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A Macroeconomic Approach of Foreign Direct Investment (FDI) in Post-Castro Cuba

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Orlando R. Villaverde

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Abstract

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The Republic of Cuba has been experiencing economic fluctuations for at least the last 50 years due to endogenous and exogenous socio-economic and political conditions. Based on these factors, Cuba has lost market share and Foreign Direct Investment (FDI). This dissertation studied macro variables from 13 countries and tested their relationships with FDI to Cuba during the period of 1998 through 2008. The results showed that level of technology, GNI per capita, and human capital had significantly impacted FDI to Cuba. The result also determined that financial capital, energy and natural resources, transportation and communication, market type, environmental factors and governmental factors in these 13 countries did not influence FDI to Cuba. Lastly, China, India and the Russian Federation had the most number of significant variables impacting FDI to Cuba. This was followed by Jamaica, Haiti, Peru, Madagascar and Nepal. The United States, Japan, France, Germany and Spain had the least impact on FDI to Cuba.

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CHAPTER I

INTRODUCTION

Background of the Research

Cuba has been allocating resources and production, primarily through its centrally planned economy, which created an inappropriate labor incentives system, leading to deteriorating economic conditions (Pellet, 1976, 1986). These factors negatively affected Cuba's economy. For example, the Gross Domestic Product (GDP) per capita in 1995 was $1,926 compared to $2,067 per capita in 1959 before the economy was transformed in the early 1960s (Maddison, 2003). Cuba's agriculture contribution to GDP has decreased from 24 percent in 1965 to 7 percent in 2000 (Maddison, 2003). However, many other countries, including Spain, Canada, Mexico, Italy and Venezuela continue to trade and invest in Cuba. This implied that economic and other activites in these countries influence their direct investments in other countries. This dissertation studied characteristics of other countries that affected FDI inflow to the Republic of Cuba.

Overview of FDI and International Trade Theories

According to Dunning’s theory of FDI in international production (Dunning, 1988a), a firm will invest abroad if the host country offers certain location-specific advantages (LSA). These specific advantages can be classified into two categories. The first category is proprietary advanced technology and expertise offered by the country providing the FDI. The second category of advantages, provided by the receiving country, is a combination of vertical and horizontal integration, economies of scales, and an internal financial market (Dunning, 1988a). Dunning’s ability to integrate LSA has been widely recognized and embodied with the onset of globalization. The increasing ability to globalize the world’s economies has been influential by embracing innovation through the expansion of FDI (Dunning, 1988a). Countries with economic stabilization and expansion will potentially attract FDI (Dunning, 1988a). Dunning’s theory has also been influential through the use of innovative technological resources such as computers and the world wide web, as countries compete for economic integration and expansion. The dominant ‘eclectic paradigm’ of international production, which relates to the characteristics of MNE’s (multinational enterprises) activity and the global economic scenario through FDI, offers a more comprehensible reason to set up production in a foreign country, since ownership, rival competition, and easy access to operating in a foreign country will allow further expansion over its competitors (Dunning, 1988a). The term ‘eclectic’ includes the three main forms of foreign investment by MNCs, which are direct investment, exports, and contractual resource transfer, and identifies the preferred route when FDI is administered from the host to a foreign country

(Dunning, 1981a) (Molina-Lacayo, 2003). Facilitating improvement to operate from a host to a foreign country by virtue of patents, proprietary technology, and or managerial and, marketing expertise would provide the firm specific advantage for Direct Foreign Investment (DFI).

Yadoung and Peng (1999) stress that in a developed economy, unskilled labor is not a distinctive resource and can be employed in the market without much networking effort. An investor in pursuit of cheap labor typically operates in an ***enclave***, in which all the resources except labor are brought in from the home-based networks (Yadoung and Peng, 1999, p. 269). This is an important milestone that the Cuban economy must undergo in order to receive FDI to expand economic development in the island nation. Local presence is also useful in building local relationships because it provides gravitational proximity to the foreign networks in which activities are centralized (Dunning, 1988a). Cuba has an abundance of local unskilled labor in which FDI is able to typically operate and mobilize its labor force (Dunning, 1988a). The ultimate purpose of FDI is for overseas investors to pursue complicated local linkages, procuring and allowing components, parts, services, research and development, and local financing to promote their migration in a foreign country (Dunning, 1988a).

Hymer (1976) also stressed that in order to engage in international production in a given host country, a firm must possess substantial advantages that offset its natural disadvantages to promote international investment(i.e. cultural uncertainty and geographic distance) vis-à-vis domestic firms in that country.

According to Adler & Hufbauer (2008), inward and outward FDI is attributed to policy liberalization explained by market forces and technological changes (Adler & Hufbauer, 2008). The inward and outward FDI can impact economic conditions, as firms are able to expand internationally to other countries, specifically developing and less developing economies who are FDI recicpients (Adler & Hufbauer, 2008). Such integration can affect the FDI inflow from the host country who are basically attempting to reallocate their resources to FDI recipient countries in an attempt to maximize their profits through globalization.

The international market has shown that a key factor that drives international competitiveness is a nation’s foreign direct investment (FDI) (Kotler, 1997). According to Kotler (1997), two policies associated with the fundamental purpose of FDI exist. The first policy, FDI in the short run, seeks to attract foreign investment, augmenting stock capital available to the nation (Kotler, 1997, p. 385). The second policy views a nation’s FDI achieving a competitive advantage over its competitor by utilizing the value chain analysis (customer value as a chain of activities transforming inputs into outputs) presented by Porter (Porter, 1996) (Kotler, 1997, p. 385) (Pearce & Robinson, 2003, p.137).

According to Kotler (1997), industrial development of a country is one of the principal factors that is highly recognized by the world’s economy. This empowers a nation to redirect its foreign policy to attract FDI. By allowing FDI, a country’s economy is affected by products and services from the country providing FDI. FDI does not only affect a country’s economy, but also provides an exposure to the world’s economy. Kotler’s (1997) Buyer’s Behavior Theory, which relates to how and why consumers purchase goods and services, is more likely to apply to FDI in a less developed economy because its consumers focus more on purchasing of goods and services and less on market structure decisions.

Porter’s competitive strategic decision making and his three generic strategies that include his product differentiation, cost leadership and focus strategy to FDI are further discussed as it pertains to market changes of a firm achieving a competitive advantages once international convergence is considered (Porter, 1980, 1996, 2001) (Pearce & Robinson, 2003).

FDI is also positively influenced by the size of the host country's economy as measured by its Gross Domestic Product (GDP) or population (Kobrin, 1976). A country in need of FDI would require the population to respond to such need. If there is a resistance to foreign capital, then FDI becomes an expensive and risky proposition (Kobrin, 1976).

Another factor influencing FDI in the international market is the level of human capital in the host countries (Noorbakhsh, Paloni, & Youseff, 2001, p. 1593). The empirical findings are: (a) human capital is a statistically significant determinant of FDI inflows; (b) human capital is one of the most important determinants; and (c) its importance has become increasingly greater through time (Noorbakhsh, Paloni, & Youseff, 2001, p. 1593). Several other factors influencing FDI can be linked to individual organizational factors, such as greater specificity and differentiation in the development of macrosocial strategies, consideration of subjectivity in relation to increased efficiency, productivity, organization through new levels of education, as well as training (Molina & Valdesfully, 2000). FDI firms adapt their human resource management to powerful social institutions in a transitional economy, such as the case with the People's Republic of China, whose human capital has allowed FDI to penetrate the country's financial institutions and grow within its transitional system, rather than FDI firms invading local institutions (Law, Tse, & Zhou, 2003).

Large markets provide a reasonable scope for investment, and hence influence market-seeking FDI (Love, 2003, p. 1167). The size of the market and its population is a measure of a country's size. As traditionally known, the land, labor, capital, and knowledge may not guarantee a host country from investing in a foreign country based on certain variables like a country's population. A systematic way of investing includes measuring a country's population to determine whether the size of the country is a determinant factor for investment. Other factors include the receiving country's ability to expand markets (Kobrin, 1976). Firms will orient themselves to invest if the conditions exist for market profitability, even if the country's ability is not conditioned for changes based on the political and economic conditions or environmental influences under which the country may be operating (Kobrin, 1976). Such condition will insure positive changes once FDI is transferred from the host country to the foreign country receiving FDI (Kobrin, 1976).

The presence of better productive infrastructure in a host country is more likely to attract Direct Foreign Investment (DFI). The number of passenger cars per square miles is used as a proxy for productive infrastructure (Kogut & Singh, 1988). Not all countries that are FDI candidates have a proxy in passenger cars per square miles. For example, telecommunications systems, such as the amount of cellular telephones or telephones lines per square miles, have been a reliable proxy in countries with less developed economies (Kogut & Singh, 1988). To have a variety of proxies, such as passenger cars and telecommunication system, allows investment firms to choose investment opportunities that will invite a furtherance of FDI from the host country (Kogut & Singh, 1988).

Per capita income is a good measure of market strength and is normalized here using purchasing power parity (PPP) (Frankel 1997). Cuba has not undergone PPP normalization since the onset of communism in 1959, when its per capita income was depleted by a black market economy and the country's population did not have the financial means to purchase products and services (Frankel, 1997). The country's ability to considered PPP is depended on inflow of FDI entering the island nation (Frankel 1997). Furthermore, Cuba's introduction of an income-based PPP to its 11 million people has been limited to internationalization distribution and marketing goods and services from an inflow of FDI from foreign investors. (Frankel, 1997).

Fuat and Ekrem (2002) wrote that FDI into low-wage countries has also witnessed a bandwagon effect or opportunism, by exploiting emerging markets through FDI. Therefore, a less developed country that has not been subject to a bandwagon effect, like Cuba, may have an overabundance of FDI entering the country once economic conditions change the country's ability to attract FDI (Fuat & Ekrem, 2002). Cuba's condition makes the country attractive to inflow of FDI. In addition, FDI flowing to developing countries has increased dramatically in the 1990s and accounts for about 40 percent of global FDI (Caves, 1971).

Statement of the Research Question

According to Kotler (1997), a nation's foreign direct investment (FDI) is an important factor in the process of globalization. The advantages that a country possesses when providing FDI to a less developed economy includes a greater return on investment (Kotler, 1997). Both the host country and the country providing the direct investment will ultimately profit. In addition, increased trade between both countries will be more likely. A base theory to answer the question or questions rests with the advantages that a host country possesses when investing abroad (Dunning, 1988). However, disadvantages to investment are costly in terms of adaptation to an environment, predominantly unknown and hostile socially and economically (Letto-Gilles, 2002). In the case of Cuba, a tremendous advantage for the host country is the restriction of trading in the open market due to its totalitarian form of government (Letto-Gilles, 2002). The objective of this dissertation was to answer the following research questions:

1. What factors in three groups of countries (advanced, developing, and less developed) impact FDI to Cuba?
2. What factors in three groups of countries (advanced, developing, and less developed) do not impact FDI to Cuba?

The list of factors to be tested includes:

1. GNI Per Capita: Measured by a country’s Gross National Income through GNI per capita (Atlas based) on the country’s domestic monetary system.
2. Financial Capital: Measured by gross fixed capital formation and gross capital formation (Dunning, 1988).
3. Level of Technology: Measured by high technology exports and industry, value added (Blomstrom & Sjoholm, 1999; Dunning, 1988a).
4. Human Capital: Measured by school enrollment and total unemployment (Sawalha, 2007).
5. Energy and Natural Resources: Measured by the ratio of know how that offers certain location specific advantages (LSA) to a foreign country through energy use and fuel imports (Dunning, 1988a).
6. Transportation and Communication: Measured by the ratio of total vertical and horizontal integration of local firms through air transport,

fixed line and mobile phone subscribers and Internet users (Dunning, 1988a).

7. Market type: The ability to create a marketing concept through FDI potentials and highly competitive value chain as measured by merchandise trade (Dunning, 1988b; Kotler, 1997; Porter, 1996).
8. Environment Factors: Measured by the agriculture value added, which has a direct and indirect affect of MNCs conducting FDI ventures (Kobrin, 1976).
9. Governmental Factors: Measured by the worker's remittances and employees' compensation as it pertains to a country's labor system.

Purpose of the Research

The purpose of this dissertation is to identify the characteristics of severals countries that impact FDI to the Republic of Cuba in a post-Castro era. The strategy for investing into the Republic of Cuba rests with Cuba’s ability to accept changes by accepting FDI for economic reforms (Dunning, 1988).

The purposes of this research are stated below.

1. The first purpose of this research was reform for international participation and economic changes would influence the Republic of Cuba to position itself for changes in order to attract foreign investment (Mesa-Lago, 2001). This research provided policy makers in Cuba and multi-national corporations with a list of factors in other countries that affect FDI to Cuba and other developing countries.
2. The natural resources that a country possesses through its FDI product firms would benefit the country’s overall competitive advantages, such as agricultural, land and unskilled labor. (Mesa-Lago, 2001). According to the theories of Dunning (1988) and Kotler (1997), the prerequisite for a nation to be highly competitive requires changing the levels of labor productivity and augmenting

capital for further reforms once an inflow of FDI is established (Dunning, 1988). Taking into consideration the process in shaping the future of the Republic of Cuba by using these fundamental aims, the second purpose of this research was to investigate two important areas of consideration including: (a) whether the acceptance of an inflow of FDI to Cuba showed a significant relationship with all of the 13 host countries analyzed in this study; and (b) whether there is a significant relationship between FDI to Cuba and the three categories of countries, classified as advanced, developing and less developed countries.

3. The researcher considered Cuba's system of government, which is and has been centrally planned but augmented competitively in the international market (Mesa-Lago, 2001). The Republic of Cuba as a nation for the last fifty-years has seen an economy in decline with little competition for expansion and a large potential

market (Mesa-Lago, 2001). The country has gone through cyclical periods with an economy that has responded very modest through the process of reform (Mesa-Lago, 2001). The third purpose of this study was to determine whether FDI to Cuba under a centrally planned economic system was significantly related to the three categories countries.

4. The country’s ability in attracting FDI through certain restrictions such as the United States embargo and other government restrictions that have decreased Cuba’s overall FDI. Coupled with a deteriorating economy and the United States laws to include the Helm-Burton and the Toricelli Acts created obstacles to promote investments and trade in the island nation through a third country (Urquhart, 1997)(Pellet, 1976, 1986). In fact, the Helm-Burton Law imposes a fine of as much as 1 million United States dollars against American companies that violate Washington’s trade embargo that includes tourism by companies

from the host countries through a third country (Urquhart, 1997)(Pellet, 1976, 1986). The ability to create a diverse group of business interest in ending the embargo and motivating 11 million citizens 90 miles from Cuba is a multibillion-dollar market waiting to occur in the travel-tourism (Birnbaum, 2002, p. 1). The fourth purpose was to determine whether the United States impacted FDI to Cuba.

Theoretical Framework

Several theoretical frameworks were presented in this research. First, the main base theory of the research focused on Dunning's 'eclectic theory/paradigm' (1988b, 1998). Dunning's theory explains the firm's contribution by investing abroad if the host country possesses certain advantages to allow an inflow of FDI to a foreign country. FDI must also be coupled with economic growth and political stability for the host country to be willing to invest abroad (Dunning, 1988a). Dunning's eclectic theory/paradigm also provided three main forms of foreign investment by MNCs conducting FDI. These are exports, contracts and resource transfer (Dunning, 1981a) (Molina-Lacayo, 2003).

The second theorist included Hymer (1960) who focused on oligopolistic theory. He observed that FDI was a means of transferring knowledge and assets, both tangible and tacit, in order to organize production abroad in a foreign country (Sethi, Guisinger, Phelan & Berg, 2003, p. 31). Hymer's own dissertation describes operations into foreign countries as costly, due to conditions of hostility and cultural diversity.

The third theory was developed by Adler & Hufbauer (2008). This theory was called inward and outward FDI theory, which identified technological spillovers as a contributing factor for impacting FDI. The inward flow of FDI influenced economic integration to developing and less developing countries such as Cuba. Such integration would also create outward flow of FDI once firms were able to transfer their operation away from the host country and reallocate their resources by adjusting their technological skills to FDI recipient countries (Adler & Hufbauer, 2008).

A fourth major theory focused on Kotler's (1975) marketing development, which was a direct result of the emerging interest in applying marketing practice and concepts to nonprofit organizations. Kotler's (1967) buyer behavior theory focused on the production, selling, and customer-oriented marketing philosophies re-directed towards the latter orientation in marketing practices. Sheth and Wright (1973, 1974) also viewed the buyer behavior theory in terms of social and public services such as population control, education, health care, transportation, and nutrition. The augmentation of redirecting a host country to invest abroad is the common link in adding value for a nation to compete outside in the international arena (Kotler, 1997). Therefore, several well-known theories such as those of Dunning (1988) and Kotler (1997) played in explaining why firms entered developing and less developing countries such as Cuba where badly needed capital was required for economic growth (Mesa-Lago, 2001).

The fifth theory includes Porter's competitive strategic decision-making and his three generic strategies. Both of these strategies that are part of this study's fifth theory was developed by Michael E. Porter (Free Press, 1985). Porter (1985) discussed the value chain concept. The core questions to be answered were "what activities added value to a firm," "what generic chain was to be expanded," as well as how to redefine the suppliers and customers through marketing strategies (Weinstein & Johnson, 1999, p. 300).

Justification and Rationale

The study provided a summary of theorists developed by Dunnning (1988b), Hymer (1960, 1970), Adler & Hufbauer (2008), Kotler (1975) and Porter (1985). These theories provide the framework required to fulfill and justify the objective of the study, which was to test if FDI to Cuba was significantly related to variables in 13 countries categorized as advanced, developing, and less developed. Several justifications are presented. First, the study attempted to examine specific hypotheses related to FDI to Cuba and macro-variables in 13 countries. Second, the study provided all parties concerned with information about factors in other countries that can influence FDI to Cuba. Third, the study was the foundation for future research on FDI to Cuba and other developing countries. Fourth, this study identified a subset of micro-variables in 13 countries that impacted FDI to Cuba and possibility of other developing countries. Lastly, the study observed the effectiveness of the U.S. trade embargo on FDI to Cuba.

The rationale of the study is unique since it attempted to observe a relationship between the macro-variables in 13 countries and the FDI to Cuba. Most of the previous studies by Mesa-Lago (1979, 2001, 2005), Suarez (1996), Institute for Cuban & Cuban-American Studies (2002), Font (1996), and Cruz (2003) focused in identifying the variables from one country or a combination of only a selected few with the Republic of Cuba. This was the first study that utilized a macroeconomic approach in order to examine FDI to Cuba. Hence, there was no comparative study of previous research done of multiple countries, with FDI to Cuba.

In summary, the research studies the relationship between the FDI to Cuba and the macro-variables in 13 countries.

Scope and Limitations of this Study

Consequently, the scope of the study focused on FDI inflow from 13 countries selected. The countries were divided into three categories, including advanced, developing, and less developing countries. The countries in the advanced category include the United States, Japan, France, Germany and Spain. The five countries (United States, Japan, France, Germany and Spain) are selected based on their current and past economic relationship and FDI investment with the Republic of Cuba (McPherson & Trumbull, 2007) (Mesa-

Lago, 2005). The United States despite the existing trade embargo with Cuba was a viable market in the past and is currently providing humanitarian aid and FDI investment on a cash basis only. The second category of countries includes China, India and the Russian Federation. All three countries are involved in significant FDI to Cuba and have previously invested into the Republic of Cuba (Mesa-Lago, 1979, 2001, 2005). The third category of countries includes Jamaica, Haiti, Peru, Madagascar and Nepal. Jamaica was chosen based on its past and current FDI investment with Cuba. Haiti, Peru, Madagascar and Nepal had similar economic conditions to Cuba (Journal of Commerce, 1998; Mesa-Lago, 2005). Haiti, Madagascar and Nepal share similar economic trades, but not necessarily with Cuba, while Peru’s natural resources that includes mining excavation allocates similar characteristics with Cuba’s natural resources.

This study did not look at all countries that could impact Cuba’s FDI. The second limitation was data. Cuba’s data was incomplete and possibly biased.

Hence, variables from Cuba could not be included in the model. The third limitation was the data used were primarily only from 1998 to 2007. The fourth limitation was the data for a few countries were not available and affected the testing of four hypotheses. The fifth limitation was the inability to compare Cuba's economy with the once centrally planned economies of Eastern Europe (Czech Republic, Slovakia, Poland, Germany) and Asia (China, South Korea) since Cuba's economy remains stagnant with no major form of reforms for the last fifty years, as well as unavailability of data.

Definition of Key Terms

International Markets

International markets are integrated within the global markets, resulting from an import and export trades where physical and environmental forces existed (Nickels, McHugh & McHugh, 2005, p. 75). As a greater degree, the international market employed in this study referred to advanced, developing and least developing countries whose economies were either in its infancy and or in a mature stage. International markets allowed products to be traded, fascilitating product development from the host country and creating a continuous incremental improvement of cost, and quality; therefore, making the product liable and attractive for overseas markets (Nickels, McHugh & McHugh, 2005).

Foreign Direct Investment

FDI defined, as the buying of permanent property, businesses in a foreign country and the ability to compare the amount of money foreign creditors owe to a nation, as well as ownership value owned in other countries (Nickels, McHugh & McHugh, 2005, p. 74). FDI separated into an expansionary type seeked to exploit the firm specific advantage in the host country, while defensive FDI seeks cheap labor in the host country to reduce cost production (Chen & Ku-YH, 2000). FDI was also defined as the cross border control of facilities through acquisition, lease, or new construction (Deichmann, 2004). According to UNCTAD's (2001), FDI involved the equity control of at least ten percent of a facility's value and as a result can established operation from the host country. According to Dunning (1979), FDI implementation may confer to such advantages as parent-local firm economies of scale in production, diversification of risk and broader access to production inputs and markets.

Advanced Countries

Advanced countries or developed economies is the name given to the industrialized nations of Western Europe, Japan, Australia, New Zealand, Canada, Israel and the United States (Ball et al., 2002). These countries classification apply to all industrialized nations, which are most technically developed based on the nations' economies. These countries have an income of $9,266 or more per annum (Ball et al, 2002, p.131). For purpose of this study, the advanced countries include United States, Japan, France, Germany and Spain.

Developing Countries

The term developing countries classifies the world's lower income nations as less technically developed. Developing countries in the global economy like Chile, Brazil, China and India have been classified as countries progressing towards becoming more industrialized (Ball et al., 2002). With the onset of the European nations after the fall of communism in the late 1980s, there are developing economies that are progressing as a lower income and less technically oriented (Ball et al., 2002). These countries have an income between $756-$9,266 or more per annum (Ball et al, 2002, p.131). For purpose of the study, the developed countries include China, India and the Russian Federation.

Less Developed Countries

Those countries with a lower standard of living, lacking natural resources, manufacturing, obstacles to trade and are highly in debt are classified as less develop countries (Nickels, McHugh, & McHugh 2005). These countries lack technical skills and are less industrialized, progressing to a low income in relations to the world's income. These countries have an income of $755 or less per annum (Ball et al, 2002, p.131). For purpose of the study, the less develop countries include Jamaica, Haiti, Peru, Madagascar and Nepal.

Summary

The summary Chapter I provides a justification for this research. It also provides an important insight of the various theories that explained FDI. The theories discussed provide a framework for FDI transfer to the Republic of Cuba from 13 international countries. Chapter 2 provided a detailed review of the theories presented in this chapter. Chapter 3 presents the methodology, which includes research design, hypothesis to be tested, and statistical estimation procedures. Chapter 4 provides the statistical results and Chapter 5 provides the conclusion and recommendations for further study.

CHAPTER 2

REVIEW OF THE LITERATURE

Overview of the Chapter

This chapter covered the keys theories developed that would explain the nature, cause, and the result of utilizing FDI in order to promote economic advantages from the host to foreign countries. They were; (1) Dunning's Eclectic Paradigm (1979, 1980);(2) Hymer's Efficiency of Multinational Corporations (1970); (3) Adler & Hufbauer (2008) Inward/Outward FDI Theories; (4) Philip Kotler (1975) Marketing Development Theory; and (5) Porter (1980, 1996, 2001), Competitive Strategic Decision Making and Three Generic Strategies (Pearce & Robinson, 2003).

The above listed theories evolved as a direct result from multinational corporations (MNCs) investing outside of their borders and engaging in socio-economic growth in the country that they served.

These were complementary and bipartisan theories in order to properly analyzed the structure of FDI and the purpose it serves when foreign countries are involved.

A discussion of FDI in Cuba's product and service sector, previous research on key variables, former centrally planned economies and a summary of the chapter was thoroughly explained.

Dunning's Eclectic Paradigm Theory

The first empirical study by Dunning (1979) stated that national firms would invest abroad in order to diversify their products and resources in a foreign country (Dunning, 1979). He further stated that MNCs was to transfer their product and services away from the host country in an attempt to acquire avenues for growth and to diversify in the international markets. MNCs were then able to develop new product lines, to acquire knowledge in the international market and to transform themselves into strong international corporations (Dunning, 1979). Dunning’s greatest contribution was that firms would also invest away from the host country in order to transfer the firms’ human skills, knowledge, and other ownership specific advantages to capitalize on those opportunities in foreign countries where markets were imperfect (Dunning, 1979). Dunning created the location and internalization (OLI) advantages-based framework to analyze why and where these multinational enterprises (MNEs) would invest abroad (Dunning, 1980). Depending on the nature of the advantages that firms were seeking, FDI would be classified into marketing seeking, resource seeking, efficiency seeking, or strategic asset seeking (Dunning, 1993). The OLI paradigm also seeked ownership advantages by improvising certain conditions of financial, social and spatial attributes of targets countries that enabled the motivating firms to invest and diversify itself away from the host country (Dunning, 1980).

According to Dunning (1992), technology contributed to unique competitive advantages, but technology transfer abroad brought with it the possibility of the dissipation of knowledge and the encouragement of competition. Though technology also brought innovation, through research and development (R&D), it played a crucial role in enhancing the competitiveness of firms. Over time, a variety of factors had encouraged a greater dispersion of R&D activities within multinational systems (Dunning, 1992). Technology, like R&D, was evidence that the host country factors were important in technology transfer (Dunning, 1992).

There was also the role of government, which according to Dunning (1992), was critical, not only in ensuring sound management of the macro economy, but also in the implementation of what was called the micro-organizational strategy or the firms level strategy that attempts to entrench MNCs in a web of local technological settings. The micro-organizational strategy was distributed through MNCs, and was considered an advantage for conducting business abroad (Dunning, 1992). Also, those MNCs companies utilizing

FDI, found it easier to expand their operations in the foreign country or in other foreign countries (Letto-Gilles, 2002). Often, competitive advantages originating in one nation would be efficiently transferred to another (e.g., proprietary technological knowledge) (Dunning, 1998). By far, Dunning’s theory (1998) has improvised internalization when penetrating foreign markets and exploiting technological advantages by allowing MNEs to choose between setting up subsidiaries and or signing up licensing agreements with foreign markets. Dunning (2003), also stated that improvised internalization allowed a MNCs ‘moral ecology’ of capitalism to transfer away from the host country to economies where FDI was needed. Most countries, where FDI had been instituted through land, labor, entrepreneurship and capital, had created ***moral ecology*** where typical MNEs firm would prosper and would provide opportunity for further economic growth in foreign countries through capitalism (Dunning, 2003). The core theory in the area of international business (IB) dealt with the analysis of multinational enterprise (MNE); whereby, the 'eclectic paradigm' proposed by Dunning was that MNEs were able to expand their operation to developing economies (Dunning, 1988).

Dunning's ***eclectic paradigm*** offered a unifying framework for determining the extent and pattern of foreign owned activities (Dunning, 1981a)(Cantwell & Narula, 2003). Through the eclectic theory, Dunning (1981a) considered the three main forms of foreign involvement by MNCs. They were direct investment, exports and contractual resource transfer (Molina-Lacayo, 2003). Dunning (1981a) eclectic theory main focus was to explain the reasons and willingness of a firm to engage in serving and choosing an international rather than a domestic market by way of exports or FDI instead of contractual resource transfers (Molina-Lacayo, 2003). It posited that multinational activities were driven by three sets of advantages, namely ownership, location and internalization (OLI) (Dunning, 1981a) (Cantwell & Narula, 2003). It was the configuration of these sets of advantages that either encouraged or discouraged a firm from undertaking foreign activities and becoming an MNE.

When Dunning (1988) wrote his original work, manufacturing and trade were the focus of MNE activities. This strategy expanded when most MNE value creation evolved from domestic to international boundaries; thereby, creating major sources of MNE competitive advantages (Cantwell & Narula, 2003, p. 456). This finding was largely consistent with the organization-location-internalization (OLI) theory of the determinants of FDI, developed by Dunning (1977). He stated that firms would undertake FDI when ownership advantages, advantages from locating in foreign countries, and incentives to internalize markets existed (Dunning, 1977) (Wooster, 2003).

According to Newburry & Yakova (2003), normal activities of firms were embedded locally rather than in the international markets, since the economic goals and non-economic goals were intertwined. These ties developed because of associations with local stakeholders based upon interdependent work practices and common culture, which lead employees to concentrate their attention locally, instead of opposed to an organizational MNC network (Newburry & Yakova, 2003; Dunning, 1995).

According to Dunning (1995), MNEs had a greater market expansion in a foreign country and emerging markets. Therefore, their goals differed from the diverse goals set for subsidiaries in industrialized countries (e.g., learning knowledge acquisition and the strengthening of corporate image) or in developing countries (e.g., raw materials and natural resources) (Luo, 2001). Dunning (1988, 1993) also viewed the role of imperfect markets as an intangible assets and the core reason why MNEs would expand and flourish, specifically when operating in a foreign country. Dunning’s eclectic theory (1988, 1993, 1995) explained the expansion into developing economies. The globalization strategies that enabled this successful expansion of its local market and having those market flourish in a foreign country. Dunning’s eclectic theory (1988, 1993, 1995) also referred to the inability of a local market to expand unless needed capital was provided by MNEs. The global market had allowed these firms to enter the local foreign market without ingesting much needed capital from the host country. Since Dunning (1993, 1995), globalization had given the added reassurance to invest due to limited tariffs and restriction. Dunning (1993) also pointed out that those local firms would not compete in certain markets away from the host country because of size, financing, marketing power or other unfair advantages that restricted these firms from expanding holistically in a developing economy. It was a strategic advantage that firms with limited capability would be able to adapt to new emerging local markets in order to reassure confidence that FDI was properly implemented. Therefore, expanding the economic infrastructure of a develop economy would achieve rising markets within and utilize local workers and local suppliers as the economy grows away from the host country (Dunning, 1993).

Lastly, Dunning’s (1977, 1980) greatest contribution occurred when he indicated through his eclectic theory that firms providing FDI were able to create vertical and horizontal spillovers of technology, expansion of greater specialization of production associated with scale economies, as well as management and logistics that would benefit a country (Blomstrom & Sjoholm, 1999). Substantial direct and indirect evidence through Dunning’s eclectic theory reiterated that FDI created spillovers that would benefit a developing economy and had greater range of expansion through local markets once FDI was administered in a foreign country (Dunning, 1977, 1980).

Hymer’s Oligopolistic Theory

In 1958, Hymer wrote an influential doctoral dissertation, the ***Dynamics of Oligopolistic Competition*** in monopoly or competitive market, where profit-maximizing decisions involved the price or output between supply and demand (Graham, 2000, p. 4).

Hymer expanded on competitive markets and elongated the demand/supply competition when differentiating in a monopoly or competitive market and an oligopolist when responding to rival firms in setting its own price or decision output (Graham, 2000, p. 4). This price (p) was formalized by a firm selling a single, undifferentiated product, deciding on what quantity (q) of this product offered in order to maximize total profits at the price. The problem was simply to maximize such total profits π where π = PQ-TC(q), when TC(q) was total cost (Graham, 2000, p. 4).

Experts on direct investment generally subscribed to the thesis first proposed by Hymer (1976). He stated that the driving force for firms to expand abroad was the application of firm-specific skills or technology to a wide market and not only to reallocate the world’s capital. Therefore, Hymer (1976) theory was used to explain the ever growing allocation of FDI in countries where capital was needed and expanding in direct proportion to economies that were considered less developed, including the Caribbean and other countries in the Western Hemisphere. This expansion was also observed in countries that acquired purchasing power (the exchange rate between two countries by changes in the country's price levels through purchasing power parity), in order to invest in their own product and services with minimum risk for failures since they depended on FDI as their main support for economic liberalization (Frankel, 1997) (Krugman & Obstfeld, 2009). As economic expansion matured in the 1980s, Hymer's (1976) oligopolistic competition theory became a model for explaining why countries expanded their FDI support. The rewards were most favorable to broaden their own scope of market penetration without using the local country's resources since the inflow of FDI was available from the host country.

Hymer (1976) pointed out many years ago why a firm would take the risk of all the problems in operating in a foreign market for market penetration. Hymer (1976) made it clear that firms would have not endured such a risk unless it did not have some advantage over local firms that had greater familiarity with the local business environment. Hymer (1976) further added that a foreign firm would penetrate the foreign market when the opportunity of market exploitation allowed for the expansion of its intellectual property rights. Exploitation of the foreign markets provided spillover benefits to the host country by allowing multinational enterprises to pay more taxes, to pay wages higher than the prevailing rate, and to increase demand for labor (Blomstrom & Sjoholm, 1999).

Hymer (1976) mentioned that markets were highly imperfects for firm-specific technology. As a result, well-managed local firms, drawing on their home court advantage, would be able to obtain a greater return on good technology than distant firms hovering in unfamiliar territory (Hymer, 1976). For these particular reasons, those MNCs that were successful would undoubtedly penetrate and exploit their proprietary technology (Hymer, 1976).

Hymer (1976) stated that MNCs would provide FDI along with technology to developing countries. The technology would be transferred to developing countries in order to compare the world's stock of FDI, to increase market share of the world's population in emerging markets, and to increase the share of the world's Gross Domestic Product (GDP) (Hymer, 1976).

In his own dissertation, Hymer (1960) tackled the problem of definition and determinants of foreign direct investment (FDI) where circumstances cause a firm to control an enterprise in a foreign country by identifying: (1) the existence of firms advantages in particular activities and the wish to exploit them profitably by establishing foreign operations; (2) gaining control of enterprises in more than one country in order to remove competition between them; and (3) diversification and risk spreading. He did not considered diversification and risk spreading to be a major determinant of FDI since it did not necessarily involve control (Letto-Gilles, 2002, p. 2).

Adler & Hufbauer Inward/Outward FDI Theories

The impact of Inward FDI stock growth was categorized as technological spillovers, since it underestimated the payoff in the impact of FDI on economic integration (Adler & Hufbauer, 2008). The evaluation of benefits of rising trade densities on economic outputs resulted from impact of inward FDI on economic integration (Adler & Hufbauer, 2008). Such integration of economic development from inward FDI would be counterproductive if FDI was not administered to developing or less developed economies since such economies would not have the foundation to attract inward FDI (Adler & Hufbauer, 2008). Developing economies with surplus resources but without an inward FDI, would not have the ability to attract or acquire FDI (Adler & Hufbauer, 2008). One such example was private GDP in the United States, over the period 1982 to 2006, growing about 13 percent per year in real terms (using 2000 dollars) (Adler & Hufbauer, 2008) (Figure 1).

Graham and Krugman (1995) identified two broadly defined avenues through which an economy would benefit from inward FDI: increased international integration and external economies (spillovers effects). Increased integration came from the impact of FDI on trade in goods, services, and knowledge (e.g., headquarters coordination) (Adler & Hufbauer, 2008). External economies usually took the form of technological spillovers that occurred when domestic firms imitated the best practices of foreign firms. In an effort to quantify the benefits of the United States inward FDI stock growth, and ultimately the role of policy liberalization, the technological spillovers would be considered (Adler & Hufbauer, 2008). Increased integration was an important benefit to the United States from inward FDI, but as Graham and Krugman (1995) indicated, an inward of FDI would provide expected returns from an abundance of integration that was qualitatively the same to the conventional gains from trades whether they were import or export types (Figure 1).

Figure 1. Worldwide reported inward FDI stock at end of year, 1985-2004 (billions of dollars)

Location of FDI Stock	1985	1990	1995	2000	2004
China	6.1	20.7	134.9	346.0	462.1
United States	184.6	394.9	535.5	1,214.3	1,473.9
Developing nations	402.5	548.0	916.7	1,939.9	2,226.0
Developed nations	569.7	1399.5	2,035.8	4,011.7	6,469.8
Total (world)	972.2	1950.3	2,992.1	6,089.9	8,895.3

(Source: Chinese Statistical Yearbook, 2001, 2005; UCTAD, 2004)

As far as outward FDI, it improved the United States supply chains with the world economy, stimulating both the United States imports and exports. Hymer (1976) first thesis also made reference to outward FDI, where the driving force was merely relying on firms expanding abroad and applying firm-specific skills or technology to a wide market and not to reallocate the world's capital (Adler & Hufbauer, 2008). Between 1982 and 2006, the United States income receipts from FDI less the forgone returns on the gains from outward capital stock grew by $188 billion (Adler & Hufbauer, 2008).

Figure 2 summarized the results from the table presented by Adler and Hufbauer (2008) and included U.S. income receipts from FDI. Using stylized facts from FDI data, roughly 30% of the United States inward FDI stock growth and 18% of the United States outward FDI stock growth between 1982 and 2006 were attributed to policy liberalization (Adler & Hufbauer, 2008). Also, their estimates suggested that about half of the growth in the United States inward and outward FDI stock would be explained by a combination of market forces and technological change. In fact, the United States inward and outward FDI stock growth between 1982 and 2006 contributed roughly $234 billion annually to the level of the United States real GDP in 2006 (Adler & Hufbauer, 2008). Of the total $234 billion annual gain, roughly $77 billion resulted from the expected rate of FDI stock growth (as a simple consequence of GDP growth); $48 billion was attributable to FDI stock growth from policy liberalization; and $112 billion was attributable to FDI stock growth from “everything else,” a combination of market forces and technological change (Adler & Hufbauer, 2008).

Figure 2. United States income receipts from FDI. (Adler & Hufbauer, 2008)

	Attributable GDP Growth	Attributable to policy liberalization	Attributable to *market forces plus technology*	Total gains
a. Parsing the growth in the United States inward and outward FDI stock, 1982-2006 (billions of dollars)				
Total inward FDI stock gain (share of total gain in parentheses)	757 (35)	385 (18)	1,041 (48)	2,183 (100)
b. Annual gain to the United States GDP in 2006 from the United States inward and outward FDI stock growth, 1982-2006 (billions of dollars)				
Gain from Inward stock growth (b)	11	14	22	46
Gain from outward stock growth (c)	66	34	90	188
Total gain to the United States GDP	77	48	112	234

a. When considering inward stock growth the United States GDP growth is used; when considering outward stock growth the GDP growth of the world except the United States is used
b. Estimates made using the Keller and Yeaple (2005)approach
c. Estimates drawn from direct investment income receipts of the United States-based multinational enterprises

Kotler’s Marketing Development Theory

Kotler (1971) described the marketplace as endlessly fascinating since marketing was constantly changing and emerging new players, new strategies and new consumers directed marketing towards a more scientific approach through the use of modeling concepts. The modeling concept was optimized with an overall marketing optimization where all marketing instruments were in need of a comprehensive marketing system (Kotler, 1971, p. 667). In the area of international FDI, for any new business launched, whether an emerging technology or a mature business, business planners must deal with at least five issues: (1) what was the total demand, (2) what price would the market bear, (3) would costs be controlled so that the product would be built and sold at a profit, (4) was the market ready for the product, (5) what were the capabilities and intentions of competitors (Bers, Lynn, & Spurling, 1997, p. 2).

Kotler (1997) further expanded marketing techniques as trend analysis, substitution analysis, and chain ratio analysis that would be applied to estimate demand from prior history and industry trends. In a mature market, new products had markets for which dimensions would be determined; either the product would displace existing competitors within established market, or the product would be reasonably close substitute for other established products (Bers, Lynn, & Spurling, 1997, p. 2).

Kotler's Buyers Behavior School of Thought

Kotler (1967) also referred to the evaluation of the managerial school of thoughts through his buyer's behavior theory. He identified the key policy issues of marketing practices and provided adequate definitions to fundamental concepts such as the product life cycle, the marketing mix, and market segmentation (Sheth, Gardner & Garrett 1988, p. 105). Through the buyer behavior theory, Kotler (1967) sharply contrasted the production, selling, and customer-oriented marketing philosophies with a strong advocacy toward the latter orientation in marketing practices. The buyer behavior school focused on customers in the market place and in addition to the demographic information on how many and who were the customers. The buyer behavior school of marketing attempted to address the question of why customers behaved, the way they did in the marketplace (Sheth, Gardner & Garrett 1988, p. 110). Such popularity of the buyer behavior school indicated an analysis suggesting two major reasons for the evaluation and rapid popularity of the behavior school: (1) the emergence of the marketing concept; and (2) the established body of knowledge in behavioral science (Sheth, Gardner & Garrett 1988, P. 111) (Figure 3). A major area of research in buyer behavior focused on social and public services such as population control, education, health care, transportation, and nutrition when utilized through FDI (Sheth & Wright, 1974). This was also a direct result of the emerging interest in applying marketing practice and concepts to nonprofit organizations (Kotler, 1975) (Figure 3).

Figure 3. Evaluation of the Buyer Behavior School (Sheth, Gardner, & Garrett, 1988, p. 126)

Criterion	Rationale	Score
Structure	Several specific constructs that are well defined and properly integrated.	8
Specification	Theories provide specific hypotheses that delimit their scope.	8
Testability	Problems with several midrange theories.	6
Empirical Support	Much Empirical research, but often-conflicting results.	8
Richness	Produced comprehensive theories and highly generalizable midrange theories.	9
Simplicity	Mixed reviews	8
	Total	47

The Activist School of Thoughts Theory

The Activist School of Thoughts was similar to the buyer behavior theory since it took the perspective of the consumer in the marketplace rather than the marketer (Sheth, Gardner, & Garrett 1988). Kotler (1972b) believed that the practice of the marketing concept with its costumer orientation was necessary to mesh the actions of business with the interests of consumers (Sheth, Gardner & Garrett 1988,

p. 131). Kotler (1972b) suggested that customer satisfaction was not sufficient to create a win-win situation between consumers and producers for two reasons, since it was difficult to define objectively customer satisfaction and what was desired by consumers would not be good for them (Sheth, Gardner & Garrett 1988, p. 131). Therefore, the marketer created a happy customer in the short run, but in the end, both the consumer and society suffered in satisfying the customer (Sheth, Gardner & Garrett 1988). Kotler provided a paradigm to classify all currents product offerings based on two dimensions of immediate satisfaction and long-term consumer welfares as described in Figure 4, in his paradigm of product categories (Sheth, Gardner & Garrett, 1988).

Figure 4. Kotler's Paradigm of Product Categories (Sheth, Gardner, & Garrett, 1988, p. 132)

Immediate Satisfaction			
Long run Consumer Welfare		Low	High
	High	Salutary Products	Desirable Products
	Low	Deficient Products	Pleasing Products

Kotler’s (1972b) fourfold classification of products (see Figure 4), based on the two criteria of long-run consumer welfare and immediate customer satisfaction had considerable merit, suggesting that long run consumer welfare measured marketing effectiveness, whereas immediate customer satisfaction measured marketing efficiency (Sheth, Gardner & Garrett 1988, p. 132). In the process of FDI, an industry with many desirable products was both effective, efficient, and balanced the interests of the company and the public (Sheth, Gardner & Garrett 1988, p. 133). On the other hand, an industry full of pleasing products would be very efficient or profitable, but would not be effective from society’s viewpoint; therefore, it would require social regulation (Sheth, Gardner & Garrett 1988, p. 133).

Kotler (1986b) proposed a broadened view of marketing, explicitly focusing on problems associated with emerging blocked or protected markets (markets characterized by high entry barriers through FDI). Kotler suggested that marketing was increasingly becoming a political exercise, by companies operating in certain markets to master the art of supplying benefits to parties other than target consumers (Sheth, Gardner & Garrett 1988, p. 144). The need extended beyond the requirements to serve and satisfy normal intermediaries like agents, distributors and agents (Sheth, Gardner & Garrett 1988, p. 144). Kotler argued that, faced with blocked or protected markets, marketers must engage in "Megamarketing, in which the concept of power and public relations were given emphasis, in addition to the four Ps of marketing strategy, product, price, place, and promotion" (Sheth, Gardner & Garrett 1988, p. 144).

In the area of pricing, Kotler (1997) related to a useful tool for guiding value pricing was the price-value grid, which helped firms when implementing FDI to determine the efficacy of their value pricing, as shown in Figure 5. (Weinstein, Johnson, & William, 1999, p. 93).

Figure 5. Price/Quality strategies.
(Weinstein & Johnson, 1999, p. 93)

Price/Quality Strategies

Strong Value	Super-Value	High-Value	Premium	Expected Value
High	Good-Value	Medium-Value	Over-Change	
(Quality)	Economy	False Economy	Rip-Off	
Low				Poor Value

Kotler's Customer Retention Theory

Kotler, the internationally renowned professor at Northwestern University, stated, "the key to customer retention is customer satisfaction" (Weinstein & Johnson, 1999, p. 119). Kotler's contribution was to identify satisfied customers in staying loyal longer, talking favorably about the organization, paying less attention to the competition, being less price sensitive, offering service ideas to the organization, and cost less to serve than new customers (Weinstein, & Johnson, 1999, p. 119). Kotler referred to the fact that customer retention through offering service ideas created innovation about the organization and ensured a superior model through loyalty (Weinstein & Johnson, 1999, p. 119). Loyalty further expanded in the core elements that created value in an organization where Kotler's theory played a vital role in the founding principle of customer retention (Weinstein & Johnson, 1999, p. 119). Customer value was built through the proper mix of quality, service, price (QSP), image, innovation, and intangible (the 3I's), those elements that attracted customer to the organization (Weinstein, & Johnson, 1999, p. 120). The traditional marketing paradigm of the 4P's of marketing, expanded by Kotler's ***Megamarketing*** created short-term perspectives. He also stated that companies would move from a short-term transaction orientation to long-term relationship-building goals, specificaly when expanding abroad from the host country (Weinstein, & Johnson, 1999, p. 132). The relationship of long-term building goals was the objective in which Kotler examined that would create a more profound, solid market foundation and a permanent principle where retention would be diluted in creating and keeping customers (Weinstein & Johnson, 1999). By creating more profound solid customer retention, a loyal customer base would represent a fundamental transformation that would enhance a traditional market for business success away from the host country (Weinstein & Johnson, 1999).

Competitive Strategic Decision-making

Through competitive strategy, a firm's central goal would create long-term superior return on investment (Porter, 1996). A strategy was situation specific, consistent of external and internal factors and distinctive competence as the central idea to the company, specifically as they expand their operations to foreign countries (Porter, 1996).

Porter, an economics professor at Harvard Business School, is a leading advocate in the strategic decision making process and a contributor in the theoretical concept of strategy as it pertained to competitive, market changes and superior performance of a firm (Porter, 1996). In strategy, managers had been learning to play by a new set of rules, where companies were flexible to respond rapidly to competitive and market changes as they transfer their operations through FDI (Porter, 1996, p. 62). Therefore, through strategy, it would be able to provide a variety of management decisions, resulting from benchmarking continuously, outsourcing aggressively to gain efficiency and positioning of a firm (Porter, 1996).

Strategy was broadly expanded from the battlefield of wars and became a more significant part of the management process after World War II (Pearce & Robinson, 2003). Through strategy, a company’s game plan was explored and broadly understood as a framework for managerial decision. A strategy reflected a company’s awareness of how, when, and where it would compete; against whom it would compete; and for what purposes it would compete (Pearce & Robinson, 2003, p. 4). Similarly, strategic management was defined as a set of decisions and actions, resulting in the formulation and implementation of plans designed to achieve a company’s objectives

(Pearce & Robinson, 2003, p. 3). Similarly, strategic decision making had social responsibilities, ranging from mission statements expressed in terms of how the company intended to contribute to the society that sustained it to corporate performance (Pearce & Robinson, 2003, p. 15).

Porter's Competitive Advantage Theory

Porter's Competitive Advantage referred to the sources surrounding the prominent sources, consisting of cost leadership, differentiation, market focus and speed (Porter, 2001). Porter (2001) illustrated that the average profitability under pressure in many industries was influenced by the Internet. Therefore, it was imperative individual companies achieved a sustainable competitive advantage by operating at a lower cost, allowing a premium price, or a combination of both (Porter, 2001). Porter (2001) further added that cost and price advantages would be achieved in two ways. One was operational effectiveness or doing the same things competitors do, but doing them better.

Second was the ability to improving operational effectiveness. Companies increased sustainable advantages if they were able to achieve and sustain higher levels of operational effectiveness than competitors (Porter, 2001, p. 71). Such sustainable advantage would be identified once companies extend their operations in a foreign country. Porter (2001) further added that rivals tended to copy best practices in competition quickly, eventually leading to competitive convergence with companies doing the same things in the same way, where customers decided on price and undermining industry profitability. A company can outperform rivals only if it established a difference that would be preserved by delivering a greater value to customers or would create comparable value at a lower cost, or do both (Porter, 1996, p. 62). The arithmetic of superior profitability followed by delivering a greater value by allowing a company to charge higher average unit prices and increasing efficiency resulting in lower average unit costs (Porter, 1996, p. 62).

By contrast, operational effectiveness referred to any number of practices that allowed a company to better utilize its inputs by reducing defects in products or developing better products faster (Porter, 1996, p. 62). Differences in operational effectiveness were at the heart of the Japanese challenge to Western companies in the 1980s, in which the Japanese were far ahead in operational effectiveness allowing them to lower cost and providing a superior quality at the same time (Porter, 1996, p. 62). This operational effectiveness was also attributed to lean production displaying an overall substantial improvement in manufacturing productivity and asset utilization, as well as TQM (Total Quality Management) and benchmarking maximizing efficiency, whereby improving customer satisfaction and best practices (Porter, 1996, p. 63). The result of the competitors by operational effectiveness would quickly imitate management techniques, new technologies, input improvements, and superior ways of meeting customer’s needs (Porter, 1996, p. 63).

The second way was achieving advantage through strategic positioning, or doing things differently from competitors in a way that delivered a unique type of value to customers (Porter 2001, p. 70). By applying strategic positioning once FDI is considered, the only way to generate higher levels of economic value was to gain a cost advantage or price premium by competing in a distinctive way, which would lead to being ahead of its competition (Porter, 2001, p. 72). Porter (2001) inferred that without distinctive strategic direction, speed and flexibility would lead nowhere, either no unique competitive advantages would be created, or improvements would be generic and would not be sustained. Porter (2001) rationale was that strategy was a matter of discipline, requiring and viewing profitability as the central focus rather than relying on a company's overall growth. Porter (2001) proactive role was the company's direction toward making tough decisions during time of upheaval, for example operating in foreign countries, while pressing on issues of the company focus on distinct positioning in the best practice to remain competitive.

Porter (1980) provided a conceptual view, such as new product introductions and price decreases that would have potentially negative impact on profitability of other players in the industry, and therefore, countermoves would be expected. By contrast, cooperative or non-threatening moves did not trigger competitive responses. Cooperative moves had the property that they did not interfere with the objectives of the rival competitor (Kuester, Homburg & Robertson, 1999, p. 91). Price increases were generally designed as cooperative moves. The initiator anticipated that other competitors would follow (Kuester et al., 1999, p. 91). A firm would respond to competitive actions, which would add sustainability or competitive advantage and would determine the company's organizational performance reacting strongly to the new product, which would jeopardized once it was introduced to the consumer (Kuester et al., 1999, p. 91).

Porter’s Three Generic Strategies

Porter’s Product Differentiation

According to Porter (1980), the first generic firm strategies was differentiation, which involved a firm creating higher value than its competitors based on various elements, including brand image, product positioning, customer service and differentiated components in a product, etc. Porter (1980) further explained that a firm used differentiation by citing to include design or brand image, technology, features, customer service, and dealer network. According to Pearce and Robinson (2003), the differentiation of products was real or perceived, often intensified by competition among existing firms. Firms operating internationally were able to compete for differentiation which was advantageous based on certain design principles or a change of technology (Pearce & Robinson, 2003). However, successful differentiation posed a competitive disadvantage for firms that attempted to enter an industry (Pearce, Robinson, 2003, p. 79).

Perceived differentiation was further expanded on firms attempting to sell their product by educating the consumer that their product differed significantly from the competition (Pearce & Robinson, 2003). The significant difference would create a symbolic value or a significant distinctiveness that would create an attraction toward certain customers (Pearce & Robinson, 2003). Porter’s (1980) differentiation theory was compared to Miles and Snow’s (1978) prospectors theory which stated that firms continually searching for new markets, for example operating through FDI ventures, which in certain cases, was favorable, but also less efficient due to the markets inability to allowed promoting from within an organization.

Porter’s Overall Cost Leadership

Porter (1980) stated in his second generic strategy that a firm, using overall cost leadership strategy, seeked to produce its product at the lowest cost in an industry. Striving for low cost leadership would achieve certain capabilities to include having secured suppliers of scarce raw materials, being in a dominant market share position, or having a high degree of capitalization (Pearce, Robinson, 2003, p. 160). Such specialization would be attributed when enduring FDI practices. A low cost leader was able to enjoy cost reduction, which would have a direct effect in improving overall sustainability in maximizing economies of scales and cost-cutting techniques in technologies and reduction in overhead expenses (Pearce & Robinson, 2003, p. 160). The cost leader was also able to apply cost advantage to charge lower prices or to enjoy higher profit margins. Therefore, a firm such as one in an FDI venture would effectively defend itself in price wars would attack competitors on price to gain market share, or, if already dominant in the industry, would simply benefit from exceptional returns (Pearce, Robinson, 2003, p. 160).

Porter’s Focus Strategy

According to Porter (1980), third generic strategy a firm would utilize focus strategy for maximizing profitability. By conducting a more profound focus of an industry, Porter (1980), added that a firm was able to concentrate on certain segment areas of strategic target market more effectively than a competitors’ holistic approach that was competing broadly. A firm pursuing a focus strategy was willing to service isolated geographic areas to satisfy the needs of customers with special financing, inventory, or servicing problems; or to tailor the product to a unique demand of the small to medium sized customer (Pearce, Robinson, 2003, p. 161). The focusing firm was able to profit from their willingness to serve otherwise ignored or underappreciated customer segment (Pearce, Robinson, 2003, p. 161). A prime example of focus strategy was firms conducting FDI through MNCs willingness to serve isolated rural areas away from urban locations, served by traditional markets. This allowed these firms utilizing a focus approach to have greater than average industry returns (Pearce & Robinson, 2003).

FDI in Cuba's Product and Service Sector

Cuba's Economic Infrastructure prior to 1959

Cuba's economy and distribution of goods was similarly well developed in the 1950s. Of the total value of wholesale trade and services in 1955, imported products accounted for 55 percent and domestic products for 45 percent (Institute for Cuban Studies, 2001, p. 1). Local markets in both the product and service sectors had a variety of wholesale and retail trades that was carried simultaneously, while there was no price list published and no indices existed to give farmers a reliable estimate of the worth of their products (Institute for Cuban Studies, 2001, p. 1). At that time, merchants had an opportunity to exploit both farmer and consumer since the goods were not subject to any grading method (Institute for Cuban Studies, 2001, p. 1). However, farmers were able to sell some products to nearby towns and in remote areas. These farmers resorted to bartering and cash exchange developed (Institute for Cuban Studies, 2001). The cash exchange between farmers and nearby towns led the way for a supply chain to develop, between retailers and wholesalers, from towns to major cities including the capital of Havana that was able to profit from these exchanges. Before 1959, retail prices were assigned inconsistently with mark-ups on the United States items ranging frequently between 20 percent and 200 percent above the United States retail price. Prices often varied according to the avenues of trades from manufacturer to consumer. Some manufactures sold directly to small retail outfits, while others preferred bulk sales to wholesalers (Institute for Cuban Studies, 2001).

Cuba was a relatively advanced country in 1958, certainly by Latin American standards and, in some areas, by world standards (Institute for Cuban Studies, 2002, p. 1). The data appeared to indicate that Cuba had maintained high levels of development in health and education, but at an extraordinary cost to the overall welfare of the Cuban people, to include access to basics levels of food, electricity and access to consumer goods availability which increased in recent decades in other Latin American countries (Institute for Cuban Studies, 2002, p. 1). Cuba had an excellent educational system and impressive literacy rates in the 1950s, which ranked the 13th lowest in the world (Institute for Cuban Studies, 2002, p. 1).

As far as the capita food consumption, Cuba ranked third in Latin America in per capita food consumption, today it ranks last (Institute for Cuban Studies, 2002, p. 1). The 1960 UN statistical yearbook ranked pre-revolutionary Cuba third out of 11 Latin American countries based on per capita daily caloric consumption. In 2002, Cuba ranked last (Institute for Cuban Studies, 2002, p. 2). The number of telephone lines in Cuba once ranked first in Latin America and fifth in the world in television sets per capita, whereas in 2002, it barely ranked fourth in Latin

America and was well back in ranks globally (Institute for Cuban Studies, 2002, p. 1). In 1957, Cuba had more television stations (23) than any other country in Latin America, easily outdistancing larger countries such as Mexico (12 television stations) and Venezuela (10 television stations) (Institute for Cuban Studies, 2002, p. 5).

During the late 1950s, Cuba ranked second only to Uruguay in Latin America in terms of radios per capita, with 169 radios per 1,000 people (Institute for Cuban Studies, 2002, p. 4). Cuba also ranked eighth in the world in number of radio stations (160), ahead of such countries as Austria (83 radio stations), United Kingdom (62), and France (50), according to UN statistical yearbook (Institute for Cuban Studies, 2002, p. 5). In addition, Cuba's rice production has fallen since 1958, when it ranked fourth in the region in production of this staple (Institute for Cuban Studies, 2002, p. 4). Cuba's export in 1958 far exceeded those of Chile and Colombia, countries that have since exceeded Cuba's export due to Cuba’s inability to diversify their export to other countries in the hemisphere (Institute for Cuban Studies, 2002). As of 1958, the value of the United States FDI (foreign direct investment) in Cuba was $861 million, and adjusting for inflation that foreign investment number amounts to more than 4.3 billion United States dollars in today’s currency (Institute for Cuban Studies, 2002, p. 5).

In the case of sugar production, the United States’ investors were not focused on the sugar industry in the beginning of 1935, and began selling their Cuban sugar holdings to Cuban firms (Institute for Cuban Studies, 2002, p. 4). By 1958, the United States’ firms owned fewer than 40 of the 161 Cuba’s sugar mills since the United States’ firms were investing in a range of other venture, especially in infrastructure development (Institute for Cuban Studies, 2002, p. 5). Advances were made in the sugar mills where the use of machinery and steam replaced animals in the production and transportation of sugar (Institute for Cuban Studies, 2002, P. 5). Cuba’s economy was healthy in 1958, with gold as a foreign exchange reserve, which was the preferred measure at that time of a healthy balance of payments. It had a total of $387 million in 1958 (Institute for Cuban Studies, 2002, p. 5). In 1958, Cuba's reserves ranked third in Latin American behind Venezuela and Brazil, which was impressive by Latin America standards since the population in the island was fewer than 7 million people (Institute for Cuban Studies, 2002, p. 5).

Cuba's Economic Infrastructure, 1959 TO 1989

On January 7, 1959, the United States recognized that the government of Fidel Castro as the ruling party of Cuba. Cuba's government changed from a dictatorship under Fulgencio Batista under a democratic economic system to a totalitarian communist centrally planned system under Fidel Castro (Institute for Cuban Studies, 2002). After Cuba signed a trade agreement with the former Soviet Union in 1960 for the purpose of Cuba bartering sugar for crude oil from the Soviet Union, the relationship between Cuba and the

United States declined during the time period of the Cold War, leading to a total trade embargo by the United States on exports to Cuba (except medicine and food) (Institute for Cuban Studies, 2002). By 1961, Fidel Castro acknowledged the Marxist-Leninist affiliation, identifying Cuba’s revolution as socialist, anti-imperialist and implementing a centrally planned system of government. The centrally planned system of government in Cuba seized private companies and the control of the public sector was solely governed by a communist regime (Institute for Cuban Studies, 2002). Soviet assistance and subsidies kept the Cuban economy afloat from the 1960s until the end of the Soviet Union in 1991 (the United States Department of State, 2003, p. 1).

Since the 1960s, the quality of life in Cuba had deteriorated with a depletion of the middle class exiting the island and migrating to the United States. The centrally planned system eliminated the private sector and the public sector was controlled by the Castro government, dictating the product/services’ supply chain (United States Department of State, 2003). Cuba per capita consumption of cereals, tubers, and meat are today all below 1950s levels (Institute for Cuban Studies, 2002, p. 1). The number of automobiles in Cuba had fallen since the 1950s, as well as telephone lines in Cuba had been virtually frozen at 1950s levels (Institute for Cuban Studies, 2002, p. 1). The Castro government also shut down what was a remarkably vibrant media sector in the 1950s. At that time, Cuba, a small country, had 58 daily newspapers of differing political views and current information on business information. Cuba ranked eighth in the world in number of radio stations (Institute for Cuban Studies, 2002, p. 1).

Cuba’s government after 1959, appraised as having one of the most advanced health care system, even though the analysis ignored the fact that the revolutionary government inherited an already advanced health care system when it took power in 1959 from the previous government of Fulgencio Batista (Institute for Cuban Studies, 2002, p. 2).

Cuba’s government before the Castro revolution was ranked has having the most literate people when it ranked fourth against Latin American countries (Institute for Cuban Studies, 2002, p. 2). Since then, Cuba has increased its literacy from 76 to 96 percent, which today places it second only to Argentina (Institute for Cuban Studies, 2002, p. 2). Although Cuba has a good education system, once students graduate they cannot earn a decent wage, since a computer engineer graduate in Cuba earns $360 a year, compared with an independent computer engineer in the United States, who earns $60,000 (Lucom, 2004, p. 1) (Figure 6).

Figure 6. Comparison between Cuba and the United States (Lucom, 2004, p. 1)

	CUBA	United States	Difference
Average yearly wage	$120	$25,000	$24,880
Average monthly wage	$10	$520	$510
Average daily wage	$0.34	$104.00	$103.66

From 1963 through 1977, an examination showed that the Cuban Economy indicated a period of rise and decline with the country’s Gross Domestic Product (GDP) (Mesa-Lago, 1979). The Cuban economy went through a decline starting from 1962-63, which was the lowest indicator in GDP as a basis of reform that the revolution undertook as a centrally planned system went into effect with a stabilization process (Mesa-Lago, 1979, p. 98). From 1963-1965, a rise in GDP occurred on a small fraction since annual GDP absolute showed 3.8 percent per 100 and 1.2 percent per 100 capita (Mesa-Lago, 1979, p. 98) (Figure 7). From 1967 through 1977, there were indicators of GDP decline due to an inflation which affected the country’s ability of economic prosperity; even though, 1966 through 1970, the country’s economy deteriorated severely with GDP declining at 0.4 percent per 100 and -1.3 percent per 100 capita (Mesa-Lago, 1979, p. 98). By 1971 through 1977, Cuba’s economy began a recuperation process due to more profound economic measures, specifically from 1971-72, particularly during the rise of sugar in the international market increasing a 4 cent rise per pound in 1970 to 65 cents per pound in November 1974 (Mesa-Lago, 1979, p. 98). However, Cuba’s sugar price in the international market declined sharply to 7 to 8 cents per pound, creating a decline in annual GDP from 3.8 percent in 1976 to 4.1 percent in 1977 (Mesa-Lago, 1979, p. 98).

Figure 7. Economic GDP in Cuba, 1963-1977
(Mesa-Lago, 1979, p. 97)

Economic GDP in Cuba from 1963 through 1977 (Average in Period)			
Years	Annual	Absolute	Per Capita
1963	1.0	3.8%	1.2%
1964	9.0	3.8%	1.2%
1965	1.5	3.8%	1.2%
1966	-3.7	0.4%	-1.3%
1967	2.4	0.4%	-1.3%
1968	6.7	0.4%	-1.3%
1969	-4.5	0.4%	-1.3%
1970	0.6	0.4%	-1.3%
1971	14.7	12.4%	10.7%
1972	25.3	12.4%	10.7%
1973	11.1	12.4%	10.7%
1974	10.5	12.4%	10.7%
1975b	17.3	12.4%	10.7%
1976b	3.8	12.4%	10.7%
1977b	4.1	12.4%	10.7%

a. 1962-66 constant price; 1966-67 current price
b. Social Global Price

Cuba’s sugar production and agriculture declined due to various factors including droughts that affected the island nation in the late 1970s, the decline in sugar price in the world's market, the delay in modernizing the country's sugar mills and agricultural mills by the assistance of the Soviet Union, which affected Cuba's economic infrastructure by start of the 1980s' (Mesa-Lago, 1979, p. 102). By 1982, Cuba was unable to repay principal on external debts estimated at 10.5 billion to 11 billion dollars, including hard currency debts of about 3 billion US dollars (Wall Street Journal, 1982, p. 1). Cuba was also subject to being unable to repay their external debts but also to repay their debts to international banks, which placed the country in a deteriorating financial crisis throughout the 1980s (Wall Street Journal, 1982, p. 1). "By 1989, the collapse of communism in Eastern Europe, followed by the former Soviet Union, brought the Cuban economy to a further decline at least 35-40 percent from 1990 through 1993, when aid to Cuba was cut off by the former Soviet Union and other Eastern Bloc countries" (Font, 1996, p. 1).

Cuban Democracy Act of 1992

By 1991, the Cuban economy contracted even further by 25 percent. It also contracted by 10 percent per year for three consecutive years, forcing the question of reform that led to the Cuban Democracy Act of 1992 with the Torriceli Act and The Helms-Burton Act that followed in 1994 (Font, 1996, p. 3). As the crisis began in the early 1990s and deepened in 1993, internal reforms were adapted by the Cuban government in order for Cubans to hold dollars and use them in commercial transactions throughout the island since the onset of the revolution in 1959 (Font, 1996, p. 5). These internal reforms led the way to a wide differential between the official exchange rate and the black-market rate (still 25-30 pesos to one U.S. dollar), but as high as 120 to 1 in 1994 (Font, 1996, p. 5). As a result, this measure encouraged the inflow of dollars, which led the way for the Cuban government in setting up dollar stores and currency exchange office to capture the bulk of incoming hard currency (Font, 1996, p. 5). As the number of goods and services transacted in dollars increased, a growing number of Cubans felt the need to obtain and use them, thus fueling the emergent markets in dollars and creating a private sector root within the central planned economic system that existed in Cuba (Font, 1996, p. 5).

The Cuban Democracy Act (CDA), introduced by the United States Representative Robert Toricelli in 1992, forbade foreign subsidiaries of the United States companies from dealing with Cuba. However, encouraged through legislation, the assistance of the Cuban people by reducing certain sanctions imposed by the United States embargo in 1960 and allowing for response to positive development in Cuba’s economy, specifically telecommunications (Inside the United States Trade, 1992, p. 8). By 1994, Cuba began consolidations, particularly on fiscal adjustments calling for higher taxes and lower expenditures as well as monetary policies to reduce pressure on the peso and accommodate the new economic sectors (Font, 1996, p. 7). The budget deficit was also reduced and the value of the dollar in the open market was brought to pre-1993 black market levels, allowing for food production and distribution with the decentralization of agriculture and the farmer’s market. This process further pushed prices down, proclaiming small positive growth rates for 1994 and 1995, at 0.7 percent and 2.5 percent, and even a higher rate of 5 percent for 1996 (Font, 1996, p. 7).

Cuba was also able to expand in the international market with Canada and Mexico where trades were common with these countries (Font, 1996, p. 10). Moreover, the relationship with Mexico expanded even further with 200 companies having commercialized relations with Cuba. In addition, Canada became one of Cuba’s leading economic partners in the 1990s. Cuba also allowed 20 to 30 Canadian companies to invest approximately 150 million U.S. dollars, largely in mining and tourism that led the way in the development of new hotels and resorts for Canadian tourist visiting the island nation (Font, 1996, p. 12). Canada’s stake even expanded with Cuba in the production of nickel and cobalt mining in eastern Cuba (Font, 1996, p. 12). The joint venture between Cuba and the Canadian company Canada’s Sherritt, Inc, invested about 165 million dollars to modernize the Moa Bay Plant initially built in the late 1950s, by the United States in order to produce 24,000 tons of nickel and cobalt a year by 1999. An additional $175 million was invested to double production in the following decades (Font, 1996, p. 12).

The Helm-Burton Law, known as the Cuban Liberty and Democratic Solidarity Act, was an attempt to tighten and broaden the United States embargo of Cuba that emerged under the late Senator, Jesse Helms, and the United States Representative, Dan Burton (Vanderbush & Haney, 2002, p. 174). One of the clauses in the Helm-Burton Law in Title IV was to deter further economic activity in Cuba by foreign companies and to induce divestment by companies currently doing business on the island (the United States Congress 1996, p. 66). The primary targets of enforcement were executives of the Canadian firm Sherritt International and the Mexican firm Grupo Domos and the Italian Company Stet International for doing business with Cuba (Vanderbush & Haney, 2002, p. 177). Grupo Domos, a partner in the Cuban telephone company relinquished its stake due to a combination of the weak Cuban peso and the threat posed by the Helm-Burton Law (Vanderbush & Haney, 2002, p. 177). Stet, another telecommunication company on the other hand, immunized itself against Helm-Burton by agreeing to compensate ITT (International Telephone & Telegraph) company for their confiscated assets (Jonquieres, 1997, p. 4). Sherritt International Corporation was later excluded from the United States because of title IV, but the clause in the Helms-Burton Law did make Canadian executives who operated in Cuba liable to law suits in United States courts and sanctions from the United States government (Font, 1996, p. 13). For Cuba, Canada was a very important and political partner. Precisely how Canada chose to exercise this advantage had considerable internal implications (Font, 1996, p. 13). The Helm-Burton Law did provide a further modification for democratization of the island to include the proposed sale of food by the United States companies and American farms, as well as medicine to the Cuban people (Vanderbush, Haney, 2002, p. 181).

For Cuba, the emerging of economic partners also surfaced in the mid 1990s with the European Union, building partnership with countries like Spain, France, and the Netherlands (Font, 1996, p. 13). In 1994-95 and after, companies like Spain’s Tabacelera, France’s Seita, and London’s Hunters & Frankau received income credits of 40 million per year from the European Union, allowing these companies to purchase tobacco crops directly from Cuba (Font, 1996, p. 13). Spanish entrepreneurs also invested $350 million in hotels and tourist facilities. However, by 1996, European Union’s suspended negotiations with the Cuban government due to Cuba’s inability to conduct economic and political reforms (Font, 1996, p. 13). Latin America, like the European Union, has also been involved in commercial and diplomatic relations with Cuba, particularly in the travel and tourism but the partnership did not create an economic integration in the 1990s like Canada, Mexico and the European Union (Font, 1996). The biggest obstacles from foreign firms integrating in an economic partnership with Cuba by the end of the decade of the 1990s was the Helm-Burton Law, creating a chilling effect with enforcement being imposed by the United States (Font, 1996, p. 15). However, there are foreign firms that see the Helm-Burton Law as an arbitrary and offensive imposition by the United State government (Font, 1996, p. 15).

Cuba's Economic Infrastructure, 1989 TO 2001

In June 2000, the United States' Congress lifted sanctions on sales of agriculture products and medicine to Cuba (Calzon, 2002, p. 3). At the start of the millennium, Cuba was financially bankrupt, accumulating a vast amount of debt since 1986. Castro's Western creditors (including Canada, France and Spain) have sought to recover some part of their $10 billion dollars in loans to Cuba (Calzon, 2002, p. 3). In fact, the amount of loans accrued from years of conducting business with Western nations like Canada, Mexico and some of the European countries created debt that had not been paid and had diminish Cuba's ability to acquire future credit (Calzon, 2002). Havana refused to even repay Moscow's larger loans from the former Soviet Union, since they insisted the debt was to the Soviet Union and not Russia, "a country that no longer exists" (Calzon, 2002, p. 3).

American agribusiness believed there were huge profits to be made by trading with Havana, since a foreign policy consideration would not prevent trade even if strengthening regimes like Libya, Iraq, and Cuba would someday put lives of the United States' servicemen at risk (Calzon, 2002, p. 3). Cuba trades with the United States had been on a humanitarian level (food and medicine) and on a cash basis only due to Cuba's inability to pay loans on credit, resulting from Cuba's past practice in defaulting on credit purchased from foreign trade countries (Calzon, 2002, p. 3).

Cuba's financial decline was due to the following

1. Cuba’s economic woes continued to mount as a result of being especially hard hit by the world wide economics slow down and the fall-off in international travel after the September 11 attacks (Calzon, 2002, p. 3).
2. Tourism, Cuba’s most important economic sector had declined sharply. Hotel occupancy was down at least 25 percent in Havana and 40 percent in Varadero (Cuba’s most popular beach resort) (Calzon, 2002, p. 3).
3. Cuba’s second largest source of foreign exchange, expatriate remittances were down due to the downturn in the United States (Calzon, 2002, p. 3).
4. Removal of Russian surveillance facilities cost the Cuban economy $200 million dollars in Russian rent (Calzon, 2002, p. 4).
5. Cuba’s former Vice President Carlos Lage had cited “the hard blow by a fall in the world prices for Cuba’s commodity exports such as sugar and nickel” (Calzon, 2002, p. 4).

Recent and reliable good economic data about Cuba are difficult to obtain, but during the year 2000, France withheld a shipment of grain due to Castro’s inability to pay for earlier transactions and canceled $160 million dollars in new credits to Havana (Calzon, 2002, p. 4). Furthermore, in earlier 2001, Chile was attempting to establish a ***payment plan*** for a $20 million debt for mackerel shipped the previous year (Calzon, 2002, p. 4).

Another country, South Africa, according to The Johannesburg Sunday Times was ***frustrated*** by Havana’s failure to settle a $13 million dollar debt, and Pretoria’s Trade and Industry Ministry refused to approve credit guarantees to Cuba (Calzon, 2002, p. 4). Lastly, Thailand also refused to provide export insurance, resulting in the cancellation of rice sales to the island worth millions of dollars (Calzon, 2002, p. 4).

According to a United States’ Commission Report, rice exports to Cuba would be worth between $40 million and $59 million dollars, increasing the value of the United States rice exports by 4 to 6 percent (Calzon, 2002, p. 4). The problem with this analogy was the United States exporters would be highly competitive with current suppliers is that Castro’s trade would be based on politics and not on economic conditions. In turn, it could backfire since a centralized system of government would favored the government ability to acquire wealth by improvising a share of more than 51 percent to Cuba’s ideological allies like China and Vietnam and not favored any FDI investment from the United States (Calzon, 2002, p.4). This evidence had been noted in previous and recent foreign business transactions where Cuba acquired a large amount of debt from countries in the Western Hemisphere and Europe; similarly creating an inability to acquire credit for future trades that would improve the country’s economic conditions (Calzon, 2002). Castro wanted the benefits of capitalism, without benefiting the Cuban workers since strikes and labor union are forbidden (Calzon, 2002, p. 6). Foreign investors would not hire workers directly, but would hire them from the government that supplied the labor to these foreign companies. Sheritt, the Canadian nickel company, pays the Castro government $9,500 dollars per year per worker; in turn, the regime pays the workers the equivalent of $20 dollars a month (Calzon, 2002, p. 6).

In 2001, Cuba began an economic slowdown due to several events, including (United States Department of State, 2003):

1. The Events of the September 11, 2001, which affected the global economy and indirectly created a slowdown in the Cuban Economy (the United States Department of State, 2003, p. 1).
2. The devastating effects of Hurricane Michelle, which hit the island in November 2001; and
3. A decline in the world market for sugar and nickel, which were Cuba’s main export commodities (United States Department of State, 2003, p. 1).

Tourism was also affected with revenues declining from over 1.9 billion dollars to 1.8 billion dollars in 2001, as well as the entire Cuban economy began a slow down with only a modest growth of 1.5 percent by 2003 (the United States Department of State 2003, p.1). In fact, a report prepared by the ***Cuba Transition Project*** (United States Department of State, 2003, p.2) indicated the following:

1. Living conditions in Cuba had deteriorated, as evidenced by an acute housing shortage estimated at 1.66 million dwelling (United States Department of State, 2003, p. 2).
2. At least 13 percent of the population was clinically undernourished, as the state food rationing system now provided for only a week to 10 days of basic alimentary needs (United States Department of State, 2003, p.2);
3. Unemployment reached 12 percent, based on official data, and as many as 30 percent of workers were displaced or underemployed (United States Department of State, 2003, p.2);
4. With real wages down nearly 50 percent since 1989, and average salaries of $10 dollars per month, university enrollment had fallen 46

percent as potential college students opted for more lucrative jobs in the tourism industry (United States Department of State, 2003, p.2);

5. Cuba was projected to have Latin America’s oldest population by 2025 with the island demographic growth expected at 0.2 percent. The elderly are already the most vulnerable as real pensions have declined by 42 percent and most pensioners survive on the equivalent of $4 dollars per month (United States Department of State, 2003, p. 2).

Cuba’s Macroeconomic Performance indicated a slow down from 6.2 percent in 1999 to 5.5 percent in 2000 and 3 percent in 2001; the rate in the last year was lower than the average of 4.3 percent during the recovery of 1995-2000 (Mesa-Lago, 2001, p. 2) (Figure 8). Cuba’s GDP by 2001 was 23 percent below the 1989 level and at the average growth rate of 1994-2001, it would take six years to recover GDP absolute level of 1989 and eight years to recover the per capita level (Mesa-Lago, 2001, p. 2) (Figure 8). Cuba’s capital formation as percentage of GDP shrunk from 26.7

percent to 5.4 percent in 1989-1993, but rose since 1995 and reached 13.2 percent in 2000, with an indicator below 1989 level (Mesa-Lago, 2001, p. 2) (Figure 8). Cuba's inflation based on consumer price index (CPI) peaked at 25.7 percent in 1994 and turned into a deflationary economy from 1999-2000, while an inflation rate of 0.5 percent was reported in 2001 (Mesa-Lago, 2001, p. 2) (Figure 8). The devaluation of the peso at the end of 2001 and particularly in early 2002 has decreased the population's purchasing power (Mesa-Lago, 2001, p.2). As a result, the price of grains, vegetables, tubers and fruits in state of dollar shops rose 26 percent in November-December of 2001 and even more in the free agricultural markets (Mesa-Lago, 2001, p. 2) (Figure 8). Fiscal deficit indicated that the island nation's percentage GDP was cut from 33.5 percent in 1993, to 2.1 percent in 1997-2000 (Mesa-Lago, 2001, p. 2) (Figure 8).

However, fiscal deficit rose to 2.5 percent or 2.7 percent in 2001, based on official sources to include the component of the deficit being the fiscal subsidy to inefficient state enterprises (concentrated in sugar and agricultural sectors), which accounts for 18 percent of total expenditures (Mesa-Lago, 2001, p. 2)(Figure 8).

Figure 8. Cuban macroeconomic indicators: 1989-2001 (Mesa-Lago, 2001)

Indicators	1989	1993	1999	2000	2001	%2001/1989
GDP Growth Rate(a)	1.2	-14.9	6.2	5.6	3.0	-19(d)
GDP per capita (pesos)(a)	1,976	1,172	1,405	1,478	1,518	-23
Gross capital formation/GDP(a)	26.7	5.4	10.3	13.2	13.3(e)	-51
Inflation rate(b)	n.a.	19.7	-2.9	-2.3	0.5	n.a.
Monetary liquidity/GDP(c)	21.6	73.2	38.8	37.9	41.0	+90
Fiscal balance/GDP (c)	-7.2	-33.5	-2.2	-2.2	-2.5	-65

(a) at constant 1981 prices (b)annual variation if the CPI (c) at current prices (d) Based on GDP at constant prices of 1981, in million pesos: 20,960 in 1989, 16,552 in 2000 and 17,053 in 2001 (e) Estimate

The Cuban external sector revealed several factors from Figure 9: Cuban External Sector Indicators: 1989-2001. The trade balance of the country showed a decline of 79 percent in 1989-1993, since the value of merchandise exports increased by 61 percent in 1993-1996, but it decreased stagnated thereafter; export value was 1.7 billion pesos in 2001, still 68 percent below the 1989 level (Mesa-Lago, 2001, p. 2) (Figure 9). Imports of goods dropped 75 percent in 1989-1993, but readily rose reaching 5.1 billion pesos in 2001, still 37 percent less than in 1989 (Mesa-Lago, 2001, p. 2)(Figure 9). The trade balance deficit of goods rose about four fold in 1993-2001, reaching the historical record of 3.2 billion pesos in 2000 and 3.4 billion in 2001, 26 percent higher than the 1989 deficit (Mesa-Lago, 2001, p. 2) (Figure 9).

One of the major differences between 2001 and 1989 was that Cuba did not benefit from long-term loans since they had to resort to short-term loans from foreign banks and other financial institutions by charging high interest (Mesa-Lago, 2001, p. 3). The merchandise trade deficit was due to compensation with a substantial surplus from services, mainly tourism, and yet the current account balance was negative: -462 million pesos in 1999 (1.8 percent of GDP), -687 million pesos in 2000 (2.5 percent of GDP) and -758 million pesos in 2001 (4.4 percent of GDP). These were the highest deficits since the end of the 1980s and exhibited a rising trend (Mesa-Lago, 2001, p. 3).

As far as trades, from 1989-2000 (Figure 9) trade decreased by 50 percentage points, resulting from a drop in sugar production dropping about one third while the price of oil jumped 2.5 times creating 18.3 percent deterioration in terms of trades (Mesa-Lago, 2001, p. 3). In 2000, rising oil prices cost $500 million dollars more of a similar volume of oil imported in 1999 and the increase in prices of sugar and nickel did not compensate for the high oil prices, resulting in 22 percent deterioration in terms of trades (Mesa-Lago, 2001, p. 4). In 2001, the price of nickel also dropped to 40 percent and prices of sugar improved, but were still below the 2000 level (prices of the main exports fell by 25 percent) (Mesa-Lago, 2001, p. 4). Astonishing was in 2000 when Cuba signed a five-year preferential agreement with Venezuela oil corporation (PDVSA), which compensated Cuba's negative terms of trades by receiving 53,000 barrels of oil daily equivalent to 3 million tons annually, meeting 35 percent of domestic needs (8.6 million tons) (Mesa-Lago, 2001, p. 4). Cuba was able to receive Venezuela oil at 25 percent discount and was estimated that the deal will amount to 2.6 billion U.S. dollar transfer, as Cuba would resell Venezuelan oil below standard market price; therefore, earning a sizeable profit in the international market (Mesa-Lago, 2001, p. 4).

The trade composition of sugar decreased between 73 percent to 27 percent of total export value from 1989-2000, as well as nickel due to world prices, resulting from 70 percent to 80 percent (about $100 million) in its export values (Mesa-Lago, 2001, p. 4). Cuba’s trade partners among others include Venezuela, Spain, Canada, Netherlands, China, Russia, France, Mexico, and Italy (Mesa-Lago, 2001, p. 4). These trades partners helped the country in achieving foreign trades, but the island nation had not reached full membership status with any of the regional commercial associations like FTAA (Free Trades of the Americas) and ACP (Asian, Caribbean and Pacific

Groups) limiting the country from expanding its foreign trades with other countries (Mesa-Lago, 2001).

Cuba’s external debts (Figure 9), jumped from $6.2 to $11.2 billions in 1989-1998 (mainly due to accumulation of non paid interests) and slightly declined to $11.1 billion in 1999 and $10.96 billion in 2000-2001, because of the depreciation of currencies that made up most of that debt in relation to the dollar (Mesa-Lago, 2001, p. 5). Most of Cuba’s debt had not been paid; even though, the country had been desperately trying to negotiate short/long term loans with their Asian, European and Latin American partners, while making contingencies with foreign creditors in order to re-establish a credit line with postpone payments that would be satisfied at a later date (Mesa-Lago, 2001).

Since 1990 after the collapse of the Soviet Union and Eastern European block countries, Cuba’s foreign investment (Figure 9) was visrtually stagnant. In 1995, it was reported at $2.1 billion and in 1998 it was $2.2 billion (Mesa-Lago, 2001, p. 5). In 2000, it increased to $4.3 billions and in 2001, it increased to $5 billions. This was more than two fold increase, which was due to Cuba's commitment in foreign investment, but not in actual investment with other countries (Mesa-Lago, 2001, p. 5). From 1989-1994 (Figure 9), the peso (Cuba's official exchange) depreciated from 7 pesos per U.S. dollars to 95 pesos per U.S. dollars. However, in 1996, it appreciated reaching 19 pesos per U.S. dollars. In 2002, it further appreciated to 27 pesos per U.S. dollars (Mesa-Lago, 2001, p. 5).

Figure 9. Cuban external sector indicators: 1989-2001

Cuban External Sector Indicators: 1989-2001

Indicators	1989	1993	1999	2000	2001	%2001/1989
Export(billions pesos)	5.4	1.1	1.4	1.7	1.7	-68
Import (billions pesos)	8.1	2.0	4.3	4.9	5.1	-37
Trade balance (billions pesos)	-2.7	-0.9	-2.9	-3.2	3.4	+26
Terms of trade (1989=100)	100.0	54.4	55.9	49.9	n.a.	-50(c)
External debt (billion the United States$)	6.2	8.8	11.1	11.0	11.0	+77
Foreign investment (billion the United States$)	n.a.	2.1(b)	2.2(b)	2.2(b)	2.5(b)	+19
Exchange rate (pesos per 1 the United States$)(a)	7	78	20	21	22	+214

(a) At the rate exchange houses (b) The first two years are 1995 and 1998; 2000 and 2001 are disbursed rather than committed investments, which were $4.3 and $5 billion respectively (c) 2001/1993(Mesa-Lago, 2001)

Figure 10 showed the problems that Cuba was facing with their physical output from 1989-2001 (Mesa-Lago, 2001). A decade after the collapse of communism and the end of Soviet economic support to Cuba had not created an economic recovery (Mesa-Lago, 2001). Even the rise of the Cuban Democracy Act of 1992 that began in the early 1990s had not improved the economy. The Cuban economy declined well into the 21st century (Mesa-Lago, 2001). The indicators in the physical output showed that the sugar industry declined since 1989 and, by 2001, the declined output was reduced to 3.5 million tons, the third lowest under the revolution. It was 30 percent below the target of 5 million tons, and 59 percent below the 1989 level (Mesa-Lago, 2001, p. 6). Nickel's production decreased 43 percent from 1989-1994, but with the assistance of investment from Sheritt International, it surpassed the previous peak in 1996, and increased to 76,000 tons in 2001, or 62 percent above the 1989 level (Mesa-Lago, 2001, p. 7). Crude oil extraction peaked at almost one million tons in

1986, but rapidly expanded in 1989-2001, reaching a record 2.8 million tons due to $450 million in foreign investment (mainly Sherritt International nickel's production), or two thirds of the total investment (Mesa-Lago, 2001, p. 7). Cuba's total energy were met by forty two percent with domestic production, mainly from bagasse (25 percent) and crude oil (17 percent). The contribution of natural gas and hydroelectric power was minimal (0.3 percent), while imported fuel covered the remaining 58 percent (Mesa-Lago, 2001, p. 7). Cuba did increase its domestic production and reduced its foreign dependency on oil. However, with the aid Venezuela was providing Cuba with the sale of oil at a discount price, Cuba dependency on foreign oil increased to 77 percent by 2001 (Mesa-Lago, 2001, p. 7).

In the manufacturing area, both for domestic consumption and export, the output was drastically reduced in 1989-1993 but rose thereafter; however, the reduced output in 2000-2001 was below the 1989 level in the following manufacturing areas: -87 percent in fertilizers, -78 percent in textiles, -65 percent in cement and -6 percent in electricity (Mesa-Lago, 2001, p. 7). Cigars production was 7 percent above the 1989 level based on the international demand and foreign companies purchasing most of the Cuban cigar industry (Mesa-Lago, 2001, p. 7). Fishing catch peaked at 244,000 tons in 1986 and by 1989 had declined to 192,000 tons. It was drastically reduced to 88,000 in 1994 but slowly increased to 162,300 tons by 2000 (Mesa-Lago, 2001, p. 7-8). By 2001, the fish production was 16 percent below the 1989 level and 34 percent below the 1986 peak. The catch in 2001 decreased as follows: 24 percent in tuna, 9 percent in shrimp, 9 percent in lobster and 24 percent in other species (Mesa-Lago, 2001, p. 8). Most of the fishing industry problems resulted from damages inflicted by several hurricanes in the late 1990s and early 2000, high indebtedness, bad financial situation, lack of liquidity both in pesos and in dollars, poor credibility among the creditors and corruption (Mesa-Lago & Carmelo, 2001, p. 8).

Lastly, Figure 10 provided an insight into agriculture since the domestic consumption and export had a history of bad performance. In 2000-2001, output levels fell compared to 1989. This included a decline in agriculture: 46 percent in milk, 43 percent in eggs, 42 percent in rice and 12 percent in citrus (Mesa-Lago & Carmelo, 2001, p. 8). The drop in dairy products has been the lack of fodder for cattle. In addition, chicken imports had fallen to 52 percent from 1989-2000. The hurricanes affected the citrus plantations creating a decline in output. This reduced production-forced Cuba to buy food products from the United States, including $35 million dollars on rice, corn and wheat, as well as $600,000 dollars for 10 million eggs (Mesa-Lago, 2001, p. 8). The third agrarian reforms, introduced in 1993-1994, was unable to resolve the problems with the agriculture industry, due to the inefficiency and lack of incentives as Cuba bought its agricultural output from its farmers at prices below the market level. This created serious disincentives and losses due to state subsidies (Mesa-Lago, 2001, p. 8).

Figure 10. Indicators
(Mesa-Lago & Carmelo, 2001)

Indicators	1989	1993	1999	2000	2001	%2001/1989
Sugar	8,121	4,246	3,783	4,059	3,532	-56
Nickel	47	27	66	71	76	+62
Oil	718	1,107	2,136	2,695	2,773	+286
Electricity (billion Kwh)	16	11	14	15	15	-6
Cement	3,759	1,049	1,785	1,633	1,324	-65
Textiles	200	51	51	47	47	-78
Fertilizers	898	94	138	118	n.a.	-87(A)
Cigars	308	106	284	241	330	7
Fish Catch	192	88	145	162	n.a.	-16(a)
Citrus	1,016	540	795	898	893	-12
Rice	532	177	369	306	n.a.	-42(a)
Milk (cow)	1,131	585	618	614	n.a.	-46(a)
Eggs	2,673	1,512	1,753	1,688	1,513	-43

a. 2000/1989 because 2001 is not available

Figure 11 provided an insight into Cuban labor, Open unemployment declined from 7.9 percent in 1989 through 1995, to 5.5 percent in 2000, and 4.5 percent in 2001, a decrease of 43 percent from 1989 to 2001

(Mesa-Lago, 2001, p. 8). One of the contributing factors resulted from state owned business and halting some of the private sector whose businesses was catering towards the tourist (Mesa-Lago, 2001). The Cuban government halted new licenses for tiny restaurants or so called (paladares), prohibiting private taxis to take tourist, closing of independent galleries, allowing only state galleries to operate under government control and taxing 300 pesos to video saloons and 800 pesos for rental of dresses (Mesa-Lago, 2001, p. 9). As a result, the unemployment rate increased and registered self employed independent workers decreased from 208,500 at the end of 1995 to 156,600 in 1999 (Mesa-Lago, 2001, p. 9). Social security wages did increase due to several factors including virtual universal health care and social assistance coverage, and low wages of retirement and pensions. Social security expenditures expanded 14 percent by 2001 from previous years and expected to continue increasing in the coming years (Mesa-Lago, 2001, p. 9).

Real wages' data were not available for 2000 and 2001. However, there was a recorded decline of about 40 percent from 1989-1999 based on a lack of connection between wages and real prices which was a disincentive to labor productivity and an obstacle for the improvement of the population consumption (Mesa-Lago, 2001, p. 9). Lastly, infant mortality and university enrollment according to Figure 11, both showed considerable decreases during the period of 1989-2001, due to the various factors affecting the country's economic slowdown and scarce resources (Mesa-Lago, 2001, p. 10). In the case of infant mortality, the rate was 11.1 percent (per 1,000 born alive) in 1989, falling to 6.4 percent in 1999, rising to 7.2 percent in 2000 and falling further in 2001 to 6.2 percent, a decline of 44 percent for the whole period (Mesa-Lago, 2001, p. 10). The contributing factor dealt with lack of proper nutrition, housing, water, sanitation and contagious diseases increasing like acute respiratory, chicken pox, hepatitis, scarlet fever, syphilis, tuberculosis and typhoid

(Mesa-Lago, 2001, p. 10). In fact, the mortality rate (per 100,000 inhabitants) increased from 29.2 to 55.7 from 1989-2000 (Mesa-Lago, 2001, p. 10). University enrollment diminished from 1989-2000, with a slight increase in 2001, for a 52 percent decline, since most university graduates were unable to find jobs within the public sector and the dwindling of the private sector prohibited them from practicing their profession (Mesa-Lago, 2001, p. 10). In addition, most university students and graduates had a more lucrative form of employment in the black market's tourist industry that was unregulated in certain sectors of the country (Mesa-Lago, 2001).

Figure 11. Cuban labor and social indicators: 1989-2001 (Mesa-Lago, 2001, p. 9)

Indicators	1989	1993	1999	2000	2001	%2001/ 1989
Open unemployment (%EAP)	7.9	7.9	6.0	5.5	4.5	-43
Social security expenditures (%GDP)	10.1	12.3	13.0	13.3	13.7	+36
Real Wages(1989=100)	100. 0	53.3	60.0	n.a.	n.a.	n.a.
Infant mortality (per 1000)	11.1	9.4	6.4	7.2	6.2	-44
University enrollment(thousand)	242	140	122	107	116	-52

Cuba's Economic Infrastructure, 2001 to 2009

By 2002, Cuban purchased from the United States Agricultural fair with 288 food producers and exporters a total of 250 million U.S. dollars, said by Pedro Alvarez, head of the state-run Alimport food procurement company (William, 2003, p. A.1). In fact, according to Pedro Alvarez, Cuba would spend at least 60 percent of its $1 billion in foreign food purchases on the U.S. products if the U.S. embargo and its credit restrictions were lifted (William, 2003, p. A.1).

The United States Chamber of Commerce is also looking at the opportunity to promote contact in Cuba despite the legal implications facing most of the United States firms from the existing embargo and the Helm-Burton Act, which creates barriers in conducting trades with Cuba (Mesa-Lago, 2001). Besides the monthly mailings, corporate members are receiving special studies on investment in Cuba, the United States and Cuban laws, and invitations to special programs and meeting of groups reflecting an optimistic view for future commercial trades with the island nation (Mesa-Lago, 2001).

AmCham Cuba is a prestigious advisory council helping the United States business copes in the relationship and forming bridges in order to access business view on Cuba’s commercial future. AmCham Cuba has promoted contacts among persons and MNCs in doing business with Cuba and establishing a long-term relationship. In fact, United States Food & Agribusiness Exhibition has been the first and remains the only event to be specifically authorized by the Office of Foreign Assets Control (OFAC) of the United States Department of the Treasury in conducting (on a cash basis only) food and agricultural product business transactions with Cuba (PWN Exhibicon, 2009). Among the products sold from the United States to Cuba since 2001, 34 states have been the source for more than 700,000 metric tons of food products and agricultural products exported to Cuba under the provisions of the Trade Sanctions and Export Enhancement Act (TRSA) of 2000 (PWN Exhibicon, 2009).

According to the official report, Cuba’s GDP grew 5 percent in 2004 (Rodriguez, 2004), slightly below the regional average of 5.5 percent (ECLAC 2004c) UN Economic Commission for Latin America and the Caribbean (ECLAC). Cuba’s growth rate in 2004 was reported at 3 percent; even though, it did not publish the inflation rate for that fiscal year (Mesa-Lago, 2005, p. 3). According to Cuban Minister of Economics and Planning, Jose Luis Rodriguez, using the purchasing power parity of the peso, compared with other currencies to buy a given basket of goods would result in calculating a GDP that was 109 percent higher than using conventional exchange rates (Mesa-Lago, 2005, p. 3). Rodriguez gave two figures of GDP growth: one based on the international methodology was 2.6 percent and another adding the value of free social services and consumption subsidies to the population was 3.8 percent (Mesa-Lago, 2005, p. 3). The unemployment rate decreased to 1.9 percent in 2004, reaching an amount to full employment and the lowest reported in Latin America and the world (Mesa-

Lago, 2005, p. 4). The only problem with this data included a modest expansion of Cuba's independent workers during the early 1990s with the Cuban Democracy Act. The private sector has been contracting since 2002 due to several problems including the restructuring of the sugar industry (Mesa-Lago, 2005, p. 4). Furthermore, there were reports from independent Cuban Journalist, in which the electricity crisis of 2004 led to the shutting of 107 industries and a number of hotels (Mesa-Lago, 2005, p. 4). Furthermore, sugar harvest was delayed from December 2004, to January 2005, and only 56 sugar mills operated during that period. To save electricity, resulting in the working day being reduced by 2.5 hours per week from October 25, 2004, to February 28, 2005, and the number of self employed workers shrank by 43 percent in 1997-2003 (Mesa-Lago, 2005, p. 4).

As far as the tourist arrivals and revenues generated during the five-year period from 2000 through 2004, the annual rates of growth slowed down to 3.1 percent for number of tourists and 3.2 percent for gross revenue (Mesa-Lago, 2005, p. 5). Cuba was also involved in the discovery of new oil deposits off shore (Mesa-Lago, 2005, p.6). By 2004, Sheritt-Pebeco found very promising deposits in Santa Cruz, offshore, located 55km east of Havana where extraction began of 1,000 tons of crude oil (Mesa-Lago, 2005, p. 7). The projected path is that Cuba would begin exploration of offshore drilling in 2006/2007 and well into the future since there were confirmations of oil in the cities of Tarara, Guanabo, and Jibacoa, which are expected to have the same features of the Santa Cruz deposit (Castro, 2004b). An agreement was made with Venezuela to supply oil to Cuba. The Venezuela's state oil corporation, PDVSA, was to deliver 53,000 barrels daily, equivalent to 2.7 million tons of oil per annum, supplying about 30 percent of domestic needs (Mesa-Lago, 2005, p. 8). By 2004, PDVSA reportedly increased its delivery from 53,000 to 78,000 barrels per day (from 2.7 million tons to 4 million tons per annum) (Mesa-Lago, 2005, p. 9). Cuba's agreement was further expanded with Venezuela signing a wider economic and trade agreements with the conditions of terms to include:

1. Economic integration of both countries, including the openings of banks and reciprocal banking credit contracts to facilitate payments in financial and commercial transactions ((Mesa-Lago, 2005, p. 9).
2. Elimination of trade tariffs in both countries, but Cuba benefiting in buying Venezuela oil at $27 a barrel (about half the current world price) and keeping 51 percent of ownership in all foreign investment including Venezuela companies investing in the country ((Mesa-Lago, 2005, p. 9).
3. Cuba sending to Venezuela tens of thousands of Cuban physicians, nurses, teachers and sport trainers who will now be paid by Venezuela (before this agreement the salaries were paid by Cuba for reimbursement of supply oil) ((Mesa-Lago, 2005, p. 9).

4. Cuba providing 2,000 annual higher education on opportunities in energy and award Cubans all the needed fellowships for research studies, while Venezuela financing Cuban projects in agriculture and industry infrastructure, energy, paving of streets, construction of aqueducts and sewage treatment facilities for improving Cuba's economy through FDI inflow from Venezuela ((Mesa-Lago, 2005, p. 9).
5. Further negotiation between Cuba, Venezuela, China and Canada's Sherritt International Corporation to built thermoelectric plants in Mariel, Cuba and rebuilding old Soviet oil refineries in Cienfuegos, Cuba ((Mesa-Lago, 2005, p. 9).

Cuba's domestic problems in the agricultural industry continue well into the 21st Century since the island nation has been suffering from severe droughts and in three years (2001-2004), the country was battered by five major hurricanes (Mesa-Lago, 2005, p. 13). The destruction of the hurricanes totaled $2.15

billion in damages to include 54,325 hectares of crops; 2.4 million animals that had to be moved causing the reduction of production of pigs and poultry (800,000 chickens died); 5,360 dwellings destroyed and 94,896 dwellings damaged (Mesa-Lago, 2005, p. 13-14). The losses also due to drought from 2003 to 2004 were reported at $834 million, including 127,600 cattle dead, 53 million liters of milk lost, 220,000 tons of tubers destroyed, 40,000 tons of tomatoes destroyed, and 28,160 hectares of other crops lost and 39,972 hectares damaged (Mesa-Lago, 2005, p. 14). Other key agricultural products were also significantly affected causing production levels to be way below 1989 levels. Sugar, rice, coffee and citrus production fell by 73 percent, 49 percent, 48 percent, 20 percent, respectively. Tobacco production fell by 36 percent. Beef, milk, and egg production also fell by 54 percent, 46 percent, and 33 percent, respectively (Mesa-Lago, 2005, p. 14).

Cuba’s biggest crisis occurred in 2004, when the Antonio Guiteras thermoelectric plant in Matanzas, one of the country's major power plants, was temporarily shut down for maintenance due to using domestically produced heavy oil with high sulfur content (Mesa-Lago, 2005, p. 16). The shutdown of the plant caused electric blackouts and severe lack of electricity, which caused the government to imposed new measures to include:

1. Shutting down of non-essential activities of state enterprises (Mesa-Lago, 2005, p. 17).
2. Granting of paid leave to non-essential workers (Mesa-Lago, 2005, p. 17).
3. Eliminating air conditioning in state offices and turning off lights early in the night (Mesa-Lago, 2005, p. 17).
4. Scheduling of irrigation activities during the evening and dawn hours (Mesa-Lago, 2005, p. 17).
5. Closing 4,000 hotel rooms in Havana, Cuba as well as Varadero, Cayo Largo del Sur, Las Tunas, Trinidad and Santiago (Mesa-Lago, 2005, p. 17).
6. Shutting down 188 factories during October 2004, including the largest steel mill (for 220 days),

sugar mills, paper producers, and citrus processing plants (Mesa-Lago, 2005, p. 17).

7. Reducing the length of the workday by 30 minutes (2.5 hours weekly) for four months, which ended on February 28, 2005 (Mesa-Lago, 2005, p. 17).

Cuba took other measures in forcing enterprises and joint ventures to deposit all hard currencies income in a single account at the BCC (Banco Central de Cuba) (Mesa-Lago, 2005, p. 39). By depositing the hard currencies in a single account and requesting its permission for all transactions involving hard currency and convertibles pesos from dollars, the BCC obtained control of credit cards in dollars and charging them with a ten percent fee, and completely prohibiting the possessions of dollars (Mesa-Lago, 2005, p. 39).

Cuba’s ill-conceived economic policies have been unable to recover GDP per capita from the 1989 level. Nine key agricultural products in 2003 decline from from 20 percent to 73 percent below their levels of 1989. Production of oil and nickel in six crucial industrial lines (cement, electricity, steel, textiles, fertilizers and cigars) were from 65 to 85 percent below their pre-crisis levels or remained stagnant from 1989 level (Mesa-Lago, 2005, p. 41).

Cuba's new leader, Raul Castro, who took over power from his ill brother Fidel Castro in 2006, began opening trades with countries like China. China's short-term economic aid may not reduce Cuba's debt, which totals $200 million (Mesa-Lago, 2005, p. 44). However, long term deals with European and Chinese partners have resume production in the nickel industry in Cuba. An investment of $500 million of it ferronickel plant left unfinished by the former Soviet Union and East European partners totaling $1.3 billion was implemented by these countries in order to improve Cuba's nickel deposit (Mesa-Lago, 2005). These two projects may not solve the economic problems that the island is currently experiencing with shortage of food and basic needs to the Cuban people (Mesa-Lago, 2005). However, the opening of the United States' embargo would be favorable for further trade with the island nation, since currently, the restrictions are still imposed by the United States Embargo on Cuba. Note that the embargo does not include food and medicines. For example, in 2005, agricultural products have made the United States Cuba's number one food supplier. Note that Cuba was the third largest U.S agricultural importer in Latin America (Mesa-Lago, 2005).

Previous Research on Key Variables

The list of factors previously tested:

According Sawalha (2007) dissertation "***The role of the multinational corporations in economic development for countries with limited resources***", his study focused on the role of MNCs in the economic development using FDI inflow towards countries with limited resources, identified as developed, developing and least developing, while making a comparison among them. His conclusion, through the null hypothesis indicated countries with higher level of financial capital, technology, human capital, energy and natural resources, transportation and communication, and leadership would increase the chances of attracting more FDI inflows (Sawalha, 2007, p. 106). Furthermore, the research result confirmed many of the previous studies that he presented in the literature review in the field of FDI and its host countries prerequisites, but added a microlevel perspective testing the relationship between the elements that constitute the independent variables and FDI inflows (Sawalha, 2007, p. 107). According to Pellet (1976, 1986) a system of labor incentives in the Cuban economy from 1950 to 1970 and socio-economic models and impacts of a small socialist economy like Cuba, makes reference that the inappropriate labor incentive was the leading cause to the deterioration of the Cuban economy. Dr. Pellet contribution was notable in the area of FDI, since he was the dissertation chairperson for Dr. Luis I. Molina-Lacayo and a committee member for Dr. Nabeel N. Sawalha, two of the reference cited.

FDI Implementation in Developing Economies

FDI implementation must have an econometric analysis using a two-stage estimation procedure, where the recipient of FDI must have a combination of governance infrastructure to promote free transparent markets (Globerman & Shapiro, 2003, p. 3). A country must also poses a macroeconomic approach in order to explore those regional distributions of FDI, which will allow the firm to invest in countries where low wage levels exist and secure its standing in new and vibrant markets (Sethi et al., 2003). FDI markets must be able to provide a geographic advantage by trading with its FDI recipient countries and should have the ability to attract technological transfer through the host country and transfer such information from the host country via spillover effects (Love, 2003). FDI has also been linked to corruption, where the levels of such corruption is either brought from the host country or created once FDI is transferred by foreign investors. This impacts the country’s competitive climate in attracting FDI (Habib & Zurawicki, 2002).

FDI must also posses economical and investment opportunities associated with short and long term effect in order to allowed a competitive edge for FDI expansion (Lall, Norman & Featherstone, 2003).

Governance Infrastructure

The importance in preserving a country's FDI depends on several factors on legislation and regulation when transacting and promoting free and transparent market. FDI preservation would be achieved through government input, by allowing FDI through diplomacy and free trade. According to Globerman and Shapiro (2003), most countries that do not receive FDI from the United States are small and are classified as developing countries. Hence, the benefits, in terms of FDI, are most pronounced for those countries (p. 3). Moreover, for countries with limited or no FDI, governance infrastructure is a contributing factor to the amount received (Globerman & Shapiro, 2003, p. 3). As governance infrastructure improves and enables a country in promoting investment decisions with MNCs, the ability of entrepreneurship would be encouraged and would increase FDI (Globerman & Shapiro, 2003, p. 3). Kaufmann, Kraay, and Zoido-Lobaton (1999) further explained that one of the governance measures is estimated by the extent of regulation and market openness, including tariffs and import control.

Governance infrastructure is correlated directly and indirectly to the probability of a country achieving FDI (Globerman & Shapiro, 2003, p. 3). The results indicated that countries failing to achieve a minimum threshold of effective governance are unlikely to receive any of the United States FDI (Globerman & Shapiro, 2003). Globerman and Shapiro (2003) made reference that a country with developing economy and a weak currency is least likely to receive any positive FDI. It is therefore imperative that those countries improve their governance in order to create a positive FDI flows.

Technological Advantages

Dunning's ***eclectic paradigm,*** made reference to the role of technology in expanding FDI. Where a company has some ownership, a company will set up production facilities in a foreign country as long as there are specific advantages in the host country, which makes FDI preferable to exporting (Love, 2003, p. 2). Love (2003) illustrates that FDI using technology is a key element in transferring that technology that would promote innovation and development from the home to the host country. Dunning (1993) often suggested that an increasing share of FDI is either skill-seeking or efficiency-seeking in high-technology industries. Such technology can be imposed in various sectors of the supply and service sector, such as the transportation and communication industry.

Fosfuri and Motta (1999), questioned the need for firm-specific advantages to give rise to multinational activity and provide a formal model of FDI in which the motivation is not to exploit existing technological advantages in a foreign country, but to access such technology and transfer it from the host economy to the investing multinational corporation via spillover effects (Love, 2003, p. 2). These spillover effects in accessing technology are beneficial to developing economies since they lack technological advances and do not have the capacity in reaching technological standing, specifically in product innovation and development (Love, 2003).

Corruption in FDI Markets

FDI and corruption has been analyzed by Habib and Zurawicki (2002, p. 1), where they referred to corruption that does not deter in absolute terms. Recent studies revealed China, Brazil, Thailand, and Mexico attract large flows of FDI, even though high levels of corruption exist within these developing countries (Habib & Zurawicki, 2002). Habib and Zurawicki (2002) provided an understanding that the pernicious role of corruption in FDI is important since it produces bottlenecks, heightens uncertainty, and raises costs. Furthermore, the corruption between the host country providing FDI assistance to the home country would be detrimental to the investors of MNCs doing business abroad (Habib & Zurawicki, 2002, p.1). The level of corruption would determine how substantial FDI is perceived and dealt with between both the host and home country (Habib & Zurawicki 2002, p. 2). Tanzi (1998) referred to corruption stemming from The World Bank and emphasized the abuse of public power for private benefit (Habib & Zurawicki 2002, p. 2). However, the benefit also applies to the private firms engaged in corruption by themselves or engaged in a business model with the public firms (Tanzi, 1998). Since most developing countries are involved in FDI investments, corruption can be operationalized as an all-inclusive factor, comprising of bribes, bureaucratic inefficiency, and political instability in both the private and public sector (Habib & Zurawicki 2002, p. 3). Foreign investors may consider corruption morally wrong and may be alienated from those countries where corruption has reached high levels (Wir, 2001). An example, several African countries, where corruption is rampant the economy of these countries are limited in their growth, would therefore ultimately receive a limited amount of FDI (Wir, 2001). Furthermore, a corrupt economy does not provide growth of its economic infrastructure, since equality for open market and competition is limited, and bribery may interfere with the ability to transfer goods in a competitive market (Wir, 2001). Similarly, corruption does persist in certain cases of FDI, because some companies can use it to advance their own interest in an open competitive market (Drabek & Payne, 1999). Drabek and Payne (1999), indicated that the use of non-transparency FDI resulted in a negative impact on the receiving country due to composite corruption, unstable economic policies, weak and poor property rights protection, and poor governance. Corruption can be monitored with the use of international organizations that allows screening for corrupt officials, deterring of corrupt environmental influences using certain watchdogs like Transparency International (TI) (Habib & Zurawicki, 2002, p. 6).

However, in countries where corruption is deeply ingrained or fully acceptable as a form of business, bringing organizations like Transparency International (TI) may not have the pursuing interest to combat corruption (Habib & Zurawicki, 2002, p. 6).

Former Centrally Planned Economies

Central and Eastern Europe

The business environment in Central and Eastern Europe has been dramatically altered by the privatization of state owned enterprises that have been on going since the fall of communism in 1989 (Fahy et al., 2003, p. 2). According to Thomas (1993), after the fall of a centrally planned system, a variety of privatization have evolved in the region from the sale of state owned assets by government which has been popular in Hungary to mass ownership transformation, as it was relatively successful in Poland and the Czech Republic after 1989 (Fahy et al., 2003, p. 2). These distinctions were visible when state owned assets were transfer to domestic investors (insiders) to foreign investors (outsiders) allowing the movement to attract further FDI and thereby increasing a firm’s resource base (Fahy et al., 2003, p. 3). According to Fahy et al. (2003), privatization was conducted partly or fully with the introduction of new personnel, the transfer of technology, equipment, the development of new skills and capabilities through training and exchange. Firms that were once state owned and were able to revert and become privatized through domestic investment, enjoyed greater access to acquiring resources through foreign assets (Fahy et al., 2003, p. 4). These foreign assets through FDI were able to transfer personnel and training. This most likely resulted in the improvement of capital intelligence in overcoming the socio-cognitive obstacles to capability development (Fahy et al., 2003, p. 4).

Foreign investment by Eastern Central European countries has shown that countries like Hungary, Poland, and Czech Republic have the most favorable macroeconomic characteristics for transition to market based economies and are, therefore, more likely to receive FDI (Smith & Rebne, 1992, p. 2). Since 1988, the number of value of the United States investments in Hungary has increased fourfold. Also, since 1992, more than three-fourths of all United States investments in East Central Europe orginated from FDI (Smith & Rebne, 1992, p. 3). By 1989, demand for FDI became a focal point of the Hungarian transition, while Poland with a transition market economy was pursuing foreign investment by privatization of state owned firms (Smith & Rebne, 1992, p. 3).

Other social science and managerial fields (such as political economy and international human resource management) would include Dunnings's (1979) eclectic theory when referring to these East Central European countries. The dimension of both FDI source and host nations are addressed by using Dunning's model and appear to be subsumed under the omnibus term foreignness, or, as Dunning has put it, "psychic distance" (Smith & Rebne, 1992, p. 5).

Ownership advantages in FDI includes several characteristics that a firm must posses such as (1) proprietorial knowledge, technology, etc.,(2) human capital, and (3) favored access to production inputs or markets, as well as (4) FDI implementation from parent local firms, economies of scales in production and (5) diversification of risk and access to production inputs and markets (Smith & Rebne, 1992, p. 5). Poland, using characteristics in developing a broad presence in Polish banking, focused on manufacturing, government, office automation and transportation (Smith & Rebne, 1992, p. 6). Polish banking in using the first three steps characteristics of ownership advantages, was able through its joint venture of Furnel International by Imperial Chemical (ICL; UK) and Furnel (Poland), to become one of Poland's top hard currency earners, and increased the country's ability to attract foreign investment (Smith & Rebne, 1992, p. 6).

In another joint venture between Linde-Technoplyn (Germany) and Technoplyn-Praha (Czechoslovakia), another state utility privatization, Germany's Linde has established a major presence as a producer of industrial gases formerly provided by the state owned firm Technoply-Praha (Smith, Rebne, 1992, p. 7). Also, United Technologies that was well established in Hungary in 1991 purchased a production site in Godollo, Hungary, as a basis for foreign sources of automotive parts (Smith & Rebne, 1992, p. 8). Expected to cost $10 million to bring the plant into production, United Technologies was able to create a domestic market through a FDI wholly owned subsidiary investment in order minimize expense (Smith & Rebne, 1992, p. 8).

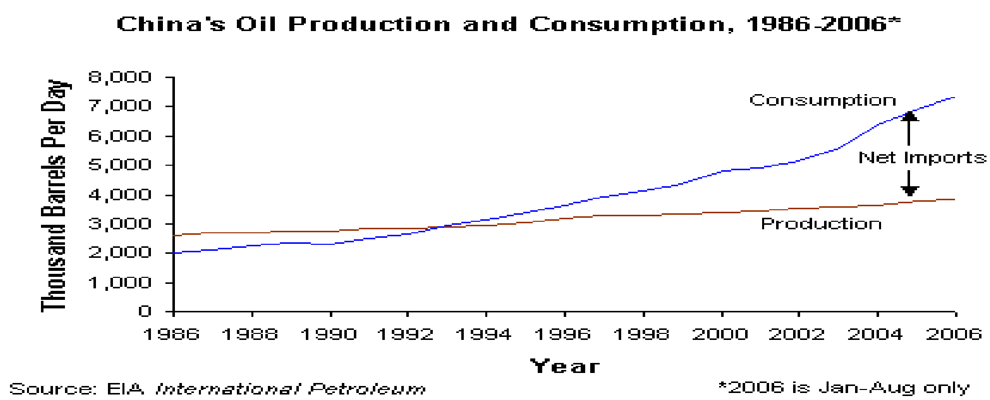
Most notably, the economic transformation of Poland that began in 1989 has created extraordinary investment opportunities through foreign firms. The Polish Agency for Foreign Investment reported that in 2001, 906 firms had made investment of at least one million dollars, totaling $53.6 in cumulative value (Deichmann, 2004, p. 1). The acceleration of investment into Poland has been widely attributed to the reversal of its government’s anti-foreign policies toward FDI (Michalak, 1993) and Poland’s radical shock therapy reform program, featuring privatization with a system of corporate stabilization, liberalization, and the promotion of inward investment (Balcerowicz, Blaszczyk, & Dabrowski, 1997, p. 2).

China’s Mixed Economy

China’s mixed economy has grown and is rapidly growing since its Gross Domestic Product (GDP) has grown considerably, expected to increase beyond 9.9 percent per annum from 2005 (Energy Information Administration (EIA), 2006). Inflow of Foreign Direct Investment (FDI) into China totaled $86.1 billion in 2005, a new record, and twice the level of 2001 (EIA, 2006).

The country’s entry into the World Trade Organization (WTO) in 2001 and the Chinese government’s ability in opening trades with foreign firms have given the country the ability to expand its economic and investment liberalization. China’s commitment to trades with foreign investment countries and modifying its once centrally planned economy to a more revolving mixed economy by opening liberalization to the private sector has given the country's a more profound ways in opening the Chinese economy to privatization. China's communist system of government remains in control of large State Owned Enterprises (SOEs), many that remain inefficient and unprofitable (EIA, 2006). China's major investment has been the recent oil exploration that began in the 1990s, but has been fully implemented since 2006. Efforts have been made to exploit onshore oil and natural gas fields in the Western providence of Xiniang, Sichuan, Gansu, and Inner Mongolia, as well as off shore fields in the Bohay Bay, Pearl River Delta, and South China Sea (EIA, 2006). China had 18.3 million barrels of proven oil reserves as of January 2006, and its consumption totaled 7.4 million barrels of oil per day that makes the country dependent on foreign oil. The reserves will undoubtedly provide the country's ability and choice for oil independence (EIA, 2006) (Figure 12).

Figure 12. China's oil production and consumption (EIA, 2006)



China’s Privatization

China’s privatization did not begin a market economy until the 1980s, when land was permitted to be leased to private users, resulting in increasing demand for foreign business causing a real estate industry to emerge (Jiang, Jinghan, & Isaac, 1998). By 1992 and 1993, increase domestic and foreign investors in the real estate industry caused it to become the leading industry, causing total revenue of the industry to increase from 52.9 to 113.6 billion yuan (Jiang, Jinghan, & Isaac, 1998, p. 2). A survey from the China State Statistical Bureau (1994) stated that more than 50 million square miles of un-salable houses located in various cities and rural areas were bought for about 3 to 6 billion yuan, causing prosperity in the real estate industry from privatization, which occurred in cities like Shanghai, Beijing and Tianjin (Jiang, Jinghan & Isaac, 1998, p. 2). As the real estate industry emerged, the Central Bank in China from 1990 and 1991 decreased the country's interest rate three times (Jiang, Jinghan, & Isaac, 1998, p. 3). These rates were notable on construction fund loans which reduced from 11.34 per cent (one-year loans) and 19.26 per cent (ten-year loans) to 8.64 per cent and 9.72 per cent to 8.64 per cent and 9.72, respectively. This reduction in interest rates benefited the real estate sector (Jiang, Jinghan, & Isaac, 1998, p. 3). Privatization of the real estate industry resulted in new investment since the banks were able to extend loans to new domestic and foreign investors (Jiang, Jinghan, & Isaac, 1998). Such reforms and readjustments allowed China to expand its real estate investment, but not at an alarming rate (Jiang, Jinghan, & Isaac, 1998, p. 4). The interest rates were increased during the years when China was transforming its economy from a planned system to a new process of privatization (Jiang, Jinghan, & Isaac, 1998, p. 4). The slow down caused China to evaluate its total revenue after 1994.

China was also able to minimize privatization through the gradual restructuring of the country's State Owned Enterprises (SOEs) that began in the mid 1980s (Varouj, Ying, & Jiaping, 2005). According to Yarrow (1986), Vickers and Yarrow (1991), and Allen and Gale (1999), less radical steps were taken to minimize privatization by using methods such as deregulation and increased competition through State Owned Enterprises (SOEs), the use of management performance contracts. There can be effective solutions for SOE restructuring. The Chinese State

Owned Enterprises (SOEs) were able to also modify or reevaluate the privatization scheme by sharing issue privatization (SIP) where some, but not all, of the government’s stake in these firms was sold to investors through a public share offerings (Varouj, Ying, & Jiaping, 2005, p. 4). China was able to apply a gradual approach to SOEs’s reform and was successful in increasing economic growth and productivity. This was different from countries like Lithuania, the Czech Republic and Russia where the reform through mass privatization has been small since they began reforms after the collapse of communism (Varouj, Ying, & Jiaping, 2005, p. 6). According to Groves et al. (1994), Chinese productivity improved significantly after 1978, because of the introduction of some basic incentives like autonomy of the firms in retaining more of their profits and the incentives of SOEs’s workers, which were strengthened via bonus payments and differing work contracts. Because of these changes, the SOEs’s firms were able to increase worker’s income and firms investments (Varouj, Ying, &

Jiaping, 2005, p. 6). Groves et al. (1995) also referred to the reform in incentive schemes in the labor market improving managerial resource allocation and in turn leading to improvements in SOEs's management productivity. In studying Chinese privatization, Li (1997), documented a significant increase in the marginal and total factor productivities of 272 State Owned Enterprises (SOEs). There was a positive indication where growth in productivity grew by approximately 90 percent since there were improved incentives, increase in the product market competition and a positive outlook for a more profound allocation of incentive programs (Varouj, Ying, & Jiaping, 2005, p. 6). In turn, Shirley and Xu (1998) concluded that incentive contracts indicated a negative impact on SOEs's, since 12 SOE contracts had no effect on profitability and labor productivity, but an adverse effects in the growth of total factor productivity (Variouj, Ying, & Jiaping, 2005, p. 6-7). Most notably, Wei, Varela, D'Souza, and Hassen (2003), conducted a study which evaluated the financial and operating performance of 208 firms in China from 1990-1997. It revealed significant growth in real output, real assets and sales efficiency after privatization (Varouj, Ying, & Jiaping, 2005, p. 7). Furthermore, Sun and Tong (2003) documented improvements of privatization of SOEs's that were significant in earning, sales, and worker's productivity for 634 SOEs's that were privatized through Share Issue Privatization (SIP) from 1994-1998 (Varouj, Ying, & Jiaping, 2005, p. 7). The impacts of corporatization on SOE performance were specified in the following formula:

$$\gamma_{it} = \alpha_{it} + \beta\chi_{it} + \gamma Zi + \lambda t + \mu i + \varepsilon$$

where the dependent variable γ_{it} is the performance measure for firm i at time t. χ_{it} is the treatment variable and is equal to 1 if date t is after corporatization of firm i, and 0 otherwise, α is a constant, and the Zi's are dummy variables of firms i's fixed characteristics including sector, location and government supervisory level (Varouj, Ying, Jiaping 2005, p. 12). These constant firm characteristics are omitted in the fixed effect model since they are captured by the fixed effect term. λt is a set of time dummy variables controlling for possible variation in the macroeconomic environment over time (Varouj, Ying,& Jiaping, 2005, p. 12). μi is the firm’s individual characteristics and is included to control for the unobservable individual effect of firm i that could be correlated with firm performance (Varouj, Ying, Jiaping 2005, p. 12). ε_{it} is the error term (Varouj, Ying, Jiaping 2005, p. 12).

China’s Technology through FDI

Since 1979, China’s ability to attract advanced technology through FDI had been notable, with its open door policy of manufacturing technology in China and exporting them abroad to foreign countries (Liu, 1995). As a result, a record of FDI has shown a distinct group of technological investment, classify as:

(1). group of advantages derived from proprietary advanced technology, such as patented technology and know how (Shi, 2001, p. 3); and

(2). group of advantages derived from synergies such as vertical and horizontal integration, which China was able to promote through technological transfer across borders through FDI (Shi, 2001, p. 3). China's technological transfer was identified through Dunning (1988a) base theory in a number of location-specific advantages (LSAs) that led the way to advantages in the areas of natural resources, cheap land and labor costs, potential local markets and government policies that China was able to promote for foreign investors (Shi, 2001, p. 3). China was able to profit from a market for technology, which allowed the country to lure foreign firms to transfer advanced technology into China (Shi, 2001, p. 6). Therefore, foreign firms were able to utilize the advanced technology and allowed in selling their products to local users through an import substitution scheme in addition to other preferential treatment (Shi, 2001, p. 6).

By establishing a market oriented production system in China, a market design strategy allowed parent companies to integrate and better internalize their labor and land in order to reduce their production cost and gradually compete in the world's market (Shi, 2001, p. 8). Technological transfer, as was the case in China in the 1980s, created an innovation through research and development (R&D) over time, which enhanced the country's ability to attract and develop competitiveness of firms over time (Young & Lan, 1997). R&D also played a crucial role on technology transfer from parent MNEs that increased foreign (R&D) affiliates and spillovers to technological upgrading through domestic privatization (Young & Lan, 1997). Dunning (1994), makes reference to China's technology transfer, assimilation and innovatory capabilities are increased when the host country is more attractive as a location for FDI with an increase value of R&D.

Summary

The literature review revealed several theories important to the research. First, Dunning’s eclectic theory (1979) was thoroughly explained which illustrated FDI through internalization of transferring the products and services away from the host to a foreign country. In his eclectic theory, Dunning (1979) referred by investing abroad the products and services have ownership advantages, along with technology, humans skills and knowledge. Dunning’s contribution also provided an explanation through FDI multinational activities that were driven by three sets of advantages such as namely ownerships, location and internatilization (Cantwell & Narula, 2003). The second theory analyze was Hymer’s Oligopolistic theory (1976), which expanded in the area of competitive market and demand/supply through FDI. Hymer’s contribution made it favorable for countries to expand their FDI support through market penetration as FDI is transferred from the host to the FDI recipient country. He made it clear that a well-managed local firm should be able to penetrate foreign markets with a greater return of good technology that would enhance in developing countries and emerging markets (Hymer, 1976). The third theoretical framework in the study was the inward/outward theories of Adler and Hufbauer (2008), whose contribution on FDI economic contribution was discussed. Adler and Hufbauer (2008) referred than an inward of FDI requires productive measures of foundation in order to attract them to develop and less develop economies. An outward of FDI, Adler and Hufbauer (2008) indicated through Hymer (1976), that firms must expand abroad by applying firms-specific skills or technology to a wide market. The fourth theory discussed was Kotler's (1971) marketing development, through his buyer's behavior theory, which contrasted production, selling and customer oriented marketing philosophies, as well as ***Megamarketing*** and how they are transcented through FDI (Weinstein & Johnson, 1999). The fifth theory focused on Porter (1996) competitive strategy and decision making where his discussion was directed at firms responding to competitive market changes as they transfer their operations through FDI. Porter (1980) provides an explanation of delivering customer satisfaction, creating comparable values for superior profitability and TQM as a strategic positioning once FDI is considered (Porter 2001, p. 70). Porter (1980) also provide through his three generic strategies an explanation of differentiation, overall cost leadership and focus strategy once firms concentrate in segments of the market when pursuing FDI (Pearce, Robinson, 2003).

Cuba's product and services and its economic infrastructure from 1959 through 2009 was thoroughly examined in order to determine the country's economic condition for FDI inflow. Data from 1959 through 2009 was able to conclude that the Republic of Cuba is a viable market for investment by foreign countries.

Lastly, a discussion of FDI implementation in developing economies and a discussion of former centrally planned economies in Europe and China was also discussed since they provided a proxy of FDI and internal restructuring of economic reforms that would be considered by the Republic of Cuba. They were beneficial in this study since these formely centrally planned economies in Eastern Europe and China would served as a proxy for Cuba’s economic reforms through FDI.

CHAPTER 3

METHODOLOGY

Proposed Research Design and Model

The purpose of this dissertation was to investigate FDI in the Republic of Cuba in a Post-Castro Cuba. This study looks at characteristics of advanced, developing and least developing countries that affect FDI to the Republic of Cuba (Sawalha, 2007). Such investment of FDI were previously researched by well-known scholars as Dunning (1977, 1979, 1980, 1988a, 1988b, 1988, 1992, 1993, 1994, 1995, 1998, 2000 & 2003) and Hymer (1970, 1976). FDI also included marketing strategies by well known authors, like Adler and Hufbauer (2008), Kotler (1967, 1971, 1972b, 1975, 1986b & 1997) and Porter (1980, 1996, & 2001). This investigation discussed the research design, data collection, statistical sampling, hypothesis development, and statistical testing.

In the design of the research, the theory discussed in Chapters 1 and 2 formulated interest and ideas about the macro-economic approach to FDI.

Research Questions Examined

The research questions of this study focused on linking the characteristics of other countries and FDI to the Republic of Cuba. The questions examined had explicit determination of relevancy that were introduced in Chapter I, and thoroughly explained in Chapter II. Conclusively, the research was used to analyze the framework of the research questions regarding the followings: (1) whether the country of Cuba had the ability to attract FDI (Foreign Direct Investment) in a post-Castro era; and (2) were countries willing to invest in Cuba during the onset of economic conditions and the country's ultimate ability in attracting FDI. By identifying these questions, the statement of the problem established the goal for this research effort.

Primary and Secondary Analysis

According to Leedy & Ormrod, (2004), the layers that were measured closest to the truth were considered primary data (p. 89). These consisted of surveys, particularly useful in describing characteristics of a large population, as described by Babbie (2001). Primary data was obtained from data queries of the World Bank, Freedom House (2000-2001), International Labor Office Database, World Investment Report, (UNCTAD, 1998-2008), World Resource Institute and United Nations for the period, 1998 through 2008 for the 13 countries obtained from the period of 1998-2008. Based on previous data queries collected, identified as primary from previous research, the same data was used in the study as secondary in order to test the hypotheses.

Secondary data, according to Leedy & Ormrod, (2004), was farther away from the truth itself, but a derivative in certain cases from the primary data (p. 89). Secondary data or analysis included various factors such as academia journals, scholarly materials from well-respected authors, respected journals, and literature research from recognized scholars in areas of research and expert testimony. Babbie (2001) also provided that a secondary analysis was a form of research where the data was collected, processed by one researcher and were further re-analyzed with different purpose by another. The secondary data were collected for the sample of the 13 countries from the World Bank, Freedom House (2000-2001), International Labor Office Database, World Resource Institute and United Nation's data queries from 1998-2008. The 13 countries were categorized into three groups: (1) advanced countries with high GNI Per Capita like the United States, Japan, Germany, France and Spain;(2) developing countries with lower and middle level GNI Per Capita like China, India and the Russian Federation; and (3) least developed countries (LCD's) with low current GNI Per Capita that included Jamaica, Haiti, Peru, Madagascar and Nepal. The 13 countries were selected based on their demographics, economic category status and or their FDI relationship with the Republic of Cuba.

Gathering Method Analysis

Through the gathering method, it should be clear in the selection process to be essential. The countries in the advanced category include the United States, Japan, France, Germany and Spain. The five countries (United States, Japan, France, Germany and Spain) were selected based on their past and present economic trade with the Republic of Cuba (McPherson & Trumbull, 2007) (Mesa-Lago, 2005). The United States despite the existing trade embargo with Cuba was a viable market before 1959. Cuba dependent on the U.S economy and profited from FDI investment of U.S. products and services. The second category of countries includes China, India and the Russian Federation. All three countries are involved in significant FDI to Cuba and have previously invested into the Republic of Cuba (Mesa-Lago, 1979, 2001, 2005). Most notably, the Russian Federation had a long political and economic relationship with Cuba after the revolution of 1959 and beyond. The third category of countries includes Jamaica, Haiti, Peru, Madagascar and Nepal. Jamaica was selected due to its long-standing trade with Cuba and as a neighboring country in the Caribbean, both Cuba and Jamaica have built coalition for positive trade relationship. Haiti, Peru, Madagascar and Nepal had similar economic conditions like Cuba, but they would differ in their economic trade since Cuba has been regulated from trading in the open market (Journal of Commerce, 1998; Mesa-Lago, 2005). Haiti, Madagascar and Nepal share similar economic trades, but not necessarily with Cuba, while Peru’s natural resources that includes mining excavation allocates similar characteristics with Cuba’s natural resources; even though, Cuba’s deteriorating economy and trade policy excluded other countries and limited only a few from investing in Cuba’s natural resources (Mesa-Lago, 2005).

Structure of the Variables

The structure of the variables obtained from the data queries of the 13 countries were grouped into three different categories. First was advanced countries and included United States, Japan, France, Germany and Spain. The second was developing countries and included China, India and the Russian Federation. Third as the least developed countries, which included Jamaica, Haiti, Peru, Madagascar and Nepal. There are nine independent variables identified as: (1) GNI per capita, (2) financial capital, (3) level of technology, (4) human capital, (5) energy and natural resources, (6) transportation and communication, (7) market type, (8) environment factors, and (9) government factors. Additionally, there are fifteen sub-variables identified as: (1) GNI per capita atlas, (2) gross fixed capital formation, (3) gross capital formation, (4) high technology exports, (5) industry value added, (6) school enrollment, (7) total unemployment, (8) energy use, (9) fuel imports, (10) air transport, (11) fixed line and mobile phone subscribers, (12) internet users, (13) merchandise trade, (14) agriculture value added, and (15) worker's remittances and employees' compensation. The unit of analysis consisted of the fifteen sub-variable data grouped into the nine variables for examination purposes. All of the sub-variable data raw values were uploaded into an excel file and transferred to a SPSS program in order to test the hypotheses through a statistical analysis against the dependent variable.

Dependent Variables

Leedy & Omrod (2004) mentioned that a variable that is potentially influenced by the independent variable that "something else" in many cases, is identified as the dependent variable, because it is influenced by, and some extent depends on the independent variable (p. 218). The dependent variable in this research was the amount of FDI per year provided to Cuba.

The dependent variable FDI to Cuba was obtained from 1998-2007, which remained constant throughout the testing of the sub-variables from the independent variables.

Independent Variables

According to Leedy & Omrod (2004), an independent variable is what a researcher studies as a possible cause of something else (p. 218). In many cases, this is one that the researcher directly manipulates is called an independent variable (Leedy & Omrod, 2004, p. 218).

The independent variables included:

1. GNI Per Capita: Measured by a country's Gross National Income through GNI per capita atlas based on the country's domestic monetary system.
2. Financial Capital: Measured by gross fixed capital formation and gross capital formation (Dunning, 1988).

3. Level of Technology: Measured by high technology exports and industry, value added (Blomstrom & Sjoholm, 1999; Dunning, 1988a).
4. Human Capital: Measured by school enrollment and total unemployment (Sawalha, 2007).
5. Energy and Natural Resources: Measured by the ratio of know how that offers certain location specific advantages (LSA) to a foreign country through energy use and fuel imports (Dunning, 1988a).
6. Transportation and Communication: Measured by the ratio of total vertical and horizontal integration of local firms through air transport, fixed line and mobile phone subscribers and Internet users (Dunning, 1988a).
7. Market type: The ability to create a marketing concept through FDI potentials and highly competitive value chain as measured by merchandise trade (Dunning, 1988b; Kotler, 1997; Porter, 1996).

8. Environment Factors: Measured by the agriculture value added, which has a direct and indirect affect of MNCs conducting FDI ventures (Kobrin, 1976).
9. Governmental Factors: Measured by the worker's remittances and employees' compensation as it pertains to a country's labor system.

Hypotheses

The hypotheses were developed based on the independent variables listed above.

Hypothesis 1 - (GNI per capita)

Hypothesis H_{01}: The level of contribution of FDI inflow to Cuba is not significantly related to the GNI per capita for the three groups of countries.

Hypothesis H_{A1}: The level of contribution of FDI inflow to Cuba is significantly related to the GNI per capita for the three groups of countries.

Hypothesis 2 - Financial Capital

Hypothesis H_{02}: The level of contribution of FDI inflow to Cuba is not significantly related to the financial capital for the three groups of countries.

Hypothesis H_{A2}: The level of contribution of FDI inflow to Cuba is significantly related to the financial capital for the three groups of countries.

Hypothesis 3 - Level of Technology

Hypothesis H_{03}: The level of contribution of FDI inflow to Cuba is not significantly related to the level of technology for the three groups of countries.

Hypothesis H_{A3}: The level of contribution of FDI inflow to Cuba is significantly related to the level of technology for the three groups of countries.

Hypothesis 4 - Human Capital

Hypothesis H_{04}: The level of contribution of FDI inflow to Cuba is not significantly related to human capital for the three groups of countries.

Hypothesis H_{A4}: The level of contribution of FDI inflow to Cuba is significantly related to human capital for the three groups of countries.

Hypothesis 5 - Energy and Natural Resources

Hypothesis H_{05}: The level of contribution of FDI inflow to Cuba is not significantly related to the energy and natural resources for the three groups of countries.

Hypothesis H_{A5}: The level of contribution of FDI inflow to Cuba is significantly related to the energy and natural resources for the three groups of countries.

Hypothesis 6 - Transportation and Communication

Hypothesis H_{06}: The level of contribution of FDI inflow to Cuba is not significantly related to the transportation and communication for the three groups of countries.

Hypothesis H_{A6}: The level of contribution of FDI inflow to Cuba is significantly related to the transportation and communication for the three groups of countries.

Hypothesis 7 - Market Type

Hypothesis H_{07}: The level of contribution of FDI inflow to Cuba is not significantly related to the market type for the three groups of countries.

Hypothesis H_{A7}: The level of contribution of FDI inflow to Cuba is significantly related to the market type for the three groups of countries.

Hypothesis 8 - Environment Factors

Hypothesis H_{08}: The level of contribution of FDI inflow to Cuba is not significantly related to the environmental factors for the three groups of countries.

Hypothesis H_{A8}: The level of contribution of FDI inflow to Cuba is significantly related to the environmental factors for the three groups of countries.

Hypothesis 9 - Governmental Factors

Hypothesis H_{09}: The level of contribution of FDI inflow to Cuba is not significantly related to the governmental factors for the three groups of countries.

Hypothesis H_{A9}: The level of contribution of FDI inflow to Cuba is significantly related to the governmental factors for the three groups of countries.

Data Collection

The data collected were obtained for 13 countries from the World Bank, Freedom House (2000-2001), International Labor Office Database, World Investment Report, (UNCTAD, 1998-2008), World Resource Institute and United Nations for the period, 1998 through 2008. The FDI to Cuba was obtained from UNCTAD (United Nations Conference on Trade and Development) through the Harvard College Library website under FDI statistics.

Reliability of the Data

Leedy and Ormrod (2004) mentioned that the reliability of the data would draw objective decision that will undoubtedly conclude drawing to an appropriate conclusion without biased or subjective terms. The reliability of the data is based on the accuracy of the data compilation done by World Bank, Freedom House, International Labor Office Database, World Investment Report, World Resource Institute and United Nations. Data are updated yearly.

Validity of the Data

The validity of the data, according to Babbie (2001), made reference to judgment of an explanation is to promote credibility. The empirical evidence of the data obtained revealed that the Republic of Cuba, as well as the 13 countries in the study belonged to the United Nations (UN) and the World Bank. Therefore, data collected from FDI to Cuba and the 13 countries showed a validity ratio per year since it was extracted from reputable organizations like the United Nations (UN) and the World Bank. The data was further evaluated for validity through other sources to include Freedom House, International Labor Office, World Investment Report and the World Resource Institute database.

Originality and Limitations of the Data

In this dissertation, the researcher identified the following limitations:

1. The researcher understood the limitation in obtaining information from countries with advanced, developing, or least developed economies (Sawalha, 2007).
2. The researcher was limited to 13 countries and the Republic of Cuba may not have been a direct correlation to the standard regarding FDI investment to the Republic of Cuba.

Sampling Techniques

The samples of the 13 countries were grouped into three different categories, including advanced countries, developing countries and least developed countries. The countries classified as advanced countries were United States, Japan, France, Germany and Spain. The developing countries were China, India and the Russian Federation. The least developed countries were Jamaica, Haiti, Peru, Madagascar and

Nepal. As stated thoroughly in chapter 1, the 13 countries were selected based on their demographics, economic category status and or their FDI relationship with the Republic of Cuba.

Statistical Methods

Multiple regression estimation techniques were employed in this dissertation in order to test the hypotheses. In addition, correlation analysis was conducted to observe the relationship between the independent variables and the dependent variable.

The hypothesis were tested using the following regression equations.

The multiple regression models utilized to test Hypothesis 1 were:

Category I (Advanced Countries):

$$FDI_{CUBA} = \alpha_O + \alpha_1 GNIPCAP_{US} + \alpha_2 GNIPCAP_{Japan} + \alpha_3 GNIPCAP_{Germany} + \alpha_4 GNIPCAP_{France} + \alpha_5 GNIPCAP_{Spain} + \varepsilon_1$$

Categories II (Developing Countries)

$$FDI_{CUBA} = \beta_O + \beta_1 GNIPCAP_{China} + \beta_2 GNIPCAP_{India} + \beta_3 GNIPCAP_{Russian\ Federation} + \varepsilon_2$$

Categories III (Least Developed Countries)

$$FDI_{CUBA} = \delta o + \delta_1 GNIPCAP_{Jamaica} + \delta_2 GNIPCAP_{Haiti} + \delta_3 GNIPCAP_{Peru} + \delta_4 GNIPCAP_{Madagascar} + \delta_5 GNIPCAP_{Nepal} + \varepsilon_3$$

Hypothesis H_{01}: The level of contribution of FDI inflow to Cuba is not significantly related to the GNI per capita for the three groups of countries.

Hypothesis H_{A1}: The level of contribution of FDI inflow to Cuba is significantly related to the GNI per capita for the three groups of countries.

The multiple regression models to test Hypothesis 2

Category I (Advanced Countries)

$$FDI_{CUBA} = \alpha_O + \alpha_1 FCPCAP_{US} + \alpha_2 FCPCAP_{Japan} + \alpha_3 FCPCAP_{Germany} + \alpha_4 FCPCAP_{France} + \alpha_5 FCPCAP_{Spain} + \varepsilon_1$$

Categories II (Developing Countries)

$$FDI_{CUBA} = \beta_O + \beta_1 FCPCAP_{China} + \beta_2 FCPCAP_{India} + \beta_3 FCPCAP_{Russian\ Federation} + \varepsilon_2$$

Categories III (Least Developed Countries)

$$FDI_{CUBA} = \delta_O + \delta_1 FCPCAP_{Jamaica} + \delta_2 FCPCAP_{Haiti} + \delta_3 FCPCAP_{Peru} + \delta_4 FCPCAP_{Madagascar} + \delta_5 FCPCAP_{Nepal} + \varepsilon_3$$

Hypothesis H_{02}: The level of contribution of FDI inflow to Cuba is not significantly related to the Financial Capital for the three groups of countries.

Hypothesis H_{A2}: The level of contribution of FDI inflow to Cuba is significantly related to the Financial Capital for the three groups of countries.

The multiple regression models to test Hypothesis 3

Category I (Advanced Countries)

$$FDI_{CUBA} = \alpha_O + \alpha_1 LEVELTECH_{US} + \alpha_2 LEVELTECH_{Japan} + \alpha_3 LEVELTECH_{Germany} + \alpha_4 LEVELTECH_{France} + \alpha_5 LEVELTECH_{Spain} + \varepsilon_1$$

Categories II (Developing Countries)

$$FDI_{CUBA} = \beta_O + \beta_1 LEVELTECH_{China} + \beta_2 LEVELTECH_{India} + \beta_3 LEVELTECH_{Russian\ Federation} + \varepsilon_2$$

Categories III (Least Developed Countries)

$$FDI_{CUBA} = \delta o + \delta_1 LEVELTECH_{Jamaica} + \delta_2 LEVELTECH_{Haiti} + \delta_3 LEVELTECH_{Peru} + \delta_4 LEVELTECH_{Madagascar} + \delta_5 LEVELTECH_{Nepal} + \varepsilon_3$$

Hypothesis H_{03}: The level of contribution of FDI inflow to Cuba is not significantly related to the Level of Technology for the three groups of countries.

Hypothesis H_{A3}: The level of contribution of FDI inflow to Cuba is significantly related to the Level of Technology for the three groups of countries.

The multiple regression models to test Hypothesis 4

Category I (Advanced Countries)

$$FDI_{CUBA} = \alpha_O + \alpha_1 HUMANCAP_{US} + \alpha_2 HUMANCAP_{Japan} + \alpha_3 HUMANCAP_{Germany} + \alpha_4 HUMANCAP_{France} + \alpha_5 HUMANCAP_{Spain} + \varepsilon_1$$

Categories II (Developing Countries)

$$FDI_{CUBA} = \beta_O + \beta_1 HUMANCAP_{China} + \beta_2 HUMANCAP_{India} + \beta_3 HUMANCAP_{Russian\ Federation} + \varepsilon_2$$

Categories III (Least Developed Countries)

$$FDI_{CUBA} = \delta o + \delta_1 HUMANCAP_{Jamaica} + \delta_2 HUMANCAP_{Haiti} + \delta_3 HUMANCAP_{Peru} + \delta_4 HUMANCAP_{Madagascar} + \delta_5 HUMANCAP_{Nepal} + \varepsilon_3$$

Hypothesis H_{04}: The level of contribution of FDI inflow to Cuba is not significantly related to Human Capital for the three groups of countries.

Hypothesis H_{A4}: The level of contribution of FDI inflow to Cuba is significantly related to Human Capital for the three groups of countries.

The multiple regression models to test Hypothesis 5

Category I (Advanced Countries)

$$FDI_{CUBA} = \alpha_O + \alpha_1 ENERGYNATRES_{US} + \alpha_2 ENERGYNATRES_{Japan} + \alpha_3 ENERGYNATRES_{Germany} + \alpha_4 ENERGYNATRES_{France} + \alpha_5 ENERGYNATRES_{Spain} + \varepsilon_1$$

Categories II (Developing Countries)

$$FDI_{CUBA} = \beta_O + \beta_1 ENERGYNATRES_{China} + \beta_2 ENERGYNATRES_{India} + \beta_3 ENERGYNATRES_{Russian\ Federation} + \varepsilon_2$$

Categories III (Least Developed Countries)

$$FDI_{CUBA} = \delta o + \delta_1 ENERGYNATRES_{Jamaica} + \delta_2 ENERGYNATRES_{Haiti} + \delta_3 ENERGYNATRES_{Peru} + \delta_4 ENERGYNATRES_{Madagascar} + \delta_5 ENERGYNATRES_{Nepal} + \varepsilon_3$$

Hypothesis H_{05}: The level of contribution of FDI inflow to Cuba is not significantly related to the Energy and Natural Resources for the three groups of countries.

Hypothesis H_{A5}: The level of contribution of FDI inflow to Cuba is significantly related to the Energy and Natural Resources for the three groups of countries.

The multiple regression models to test Hypothesis 6

Category I (Advanced Countries)

$$FDI_{CUBA} = \alpha_O + \alpha_1 TRANSPCOMMUNICATE_{US} + \alpha_2 TRANSPCOMMUNICATE_{Japan} + \alpha_3 TRANSPCOMMUNICATE_{Germany} +$$

$$\alpha_4 TRANSPCOMMUNICATE_{France} + \alpha_5 TRANSPCOMMUNICATE_{Spain} + \varepsilon_1$$

Categories II (Developing Countries)

$$FDI_{CUBA} = \beta_O + \beta_1 TRANSPCOMMUNICATE_{China} + \beta_2 TRANSPCOMMUNICATE_{India} + \beta_3 TRANSPCOMMUNICATE_{Russian\ Federation} + \varepsilon_2$$

Categories III (Least Developed Countries)

$$FDI_{CUBA} = \delta o + \delta_1 TRANSPCOMMUNICATE_{Jamaica} + \delta_2 TRANSPCOMMUNICATE_{Haiti} + \delta_3 TRANSPCOMMUNICATE_{Peru} + \delta_4 TRANSPCOMMUNICATE_{Madagascar} + \delta_5 TRANSPCOMMUNICATE_{Nepal} + \varepsilon_3$$

Hypothesis H_{06}: The level of contribution of FDI inflow to Cuba is not significantly related to the Transportation and Communication for the three groups of countries.

Hypothesis H_{A6}: The level of contribution of FDI inflow to Cuba is significantly related to the Transportation and Communication for the three groups of countries.

The multiple regression models to test Hypothesis 7

Category I (Advanced Countries)

$$FDI_{CUBA} = \alpha_O + \alpha_1 MARKETTYPE_{US} + \alpha_2 MARKETTYPE_{Japan} + \alpha_3 MARKETTYPE_{Germany} + \alpha_4 MARKETTYPE_{France} + \alpha_5 MARKETTYPE_{Spain} + \varepsilon_1$$

Categories II (Developing Countries)

$$FDI_{CUBA} = \beta_O + \beta_1 MARKETTYPE_{China} + \beta_2 MARKETTYPE_{India} + \beta_3 MARKETTYPE_{Russian\ Federation} + \varepsilon_2$$

Categories III (Least Developed Countries)

$$FDI_{CUBA} = \delta o + \delta_1 MARKETTYPE_{Jamaica} + \delta_2 MARKETTYPE_{Haiti} + \delta_3 MARKETTYPE_{Peru} + \delta_4 MARKETTYPE_{Madagascar} + \delta_5 MARKETTYPE_{Nepal} + \varepsilon_3$$

Hypothesis H_{07}: The level of contribution of FDI inflow to Cuba is not significantly related to the Market Type for the three groups of countries.

Hypothesis H_{A7}: The level of contribution of FDI inflow to Cuba is significantly related to the Market Type for the three groups of countries.

The multiple regression models to test Hypothesis 8

Category I (Advanced Countries)

$$FDI_{CUBA} = \alpha_O + \alpha_1 ENVIROFACTORS_{US} + \alpha_2 ENVIROFACTORS_{Japan} + \alpha_3 ENVIROFACTORS_{Germany} + \alpha_4 ENVIROFACTORS_{France} + \alpha_5 ENVIROFACTORS_{Spain} + \varepsilon_1$$

Categories II (Developing Countries)

$$FDI_{CUBA} = \beta_O + \beta_1 ENVIROFACTORS_{China} + \beta_2 ENVIROFACTORS_{India} + \beta_3 ENVIROFACTORS_{Russian\ Federation} + \varepsilon_2$$

Categories III (Least Developed Countries)

$$FDI_{CUBA} = \delta o + \delta 1ENVIROFACTORS_{Jamaica} + \delta 2ENVIROFACTORS_{Haiti} + \delta 3ENVIROFACTORS_{Peru} + \delta 4ENVIROFACTORS_{Madagascar} + \delta 5ENVIROFACTORS_{Nepal} + \varepsilon_3$$

Hypothesis H_{08}: The level of contribution of FDI inflow to Cuba is not significantly related to the Environment Factors for the three groups of countries.

Hypothesis H_{A8}: The level of contribution of FDI inflow to Cuba is significantly related to the Environment Factors for the three groups of countries.

The multiple regression models to test Hypothesis 9

Category I (Advanced Countries)

$$FDI_{CUBA} = \alpha_O + \alpha_1 GOVERNMENTALFACTORS_{US} + \alpha_2 GOVERNMENTALFACTORS_{Japan} + \alpha_3 GOVERNMENTALFACTORS_{Germany} +$$

$\alpha_4 GOVERNMENTALFACTORS_{France}$ +

$\alpha_5 GOVERNMENTALFACTORS_{Spain}$ + ε_1

Categories II (Developing Countries)

$FDI_{CUBA} = \beta_O + \beta_1 GOVERNMENTALFACTORS_{China}$ +

$\beta_2 GOVERNMENTALFACTORS_{India}$ +

$\beta_3 GOVERNMENTALFACTORS_{Russian\ Federation} + \varepsilon_2$

Categories III (Least Developed Countries)

$FDI_{CUBA} = \delta o + \delta_1 GOVERNMENTALFACTORS_{Jamaica}$ +

$\delta_2 GOVERNMENTALFACTORS_{Haiti}$ +

$\delta_3 GOVERNMENTALFACTORS_{Peru}$ +

$\delta_4 GOVERNMENTALFACTORS_{Madagascar}$ +

$\delta_5 GOVERNMENTALFACTORS_{Nepal} + \varepsilon_3$

Hypothesis H_{09}: The level of contribution of FDI inflow to Cuba is not significantly related to the Governmental Factors for the three groups of countries.

Hypothesis H_{A9}: The level of contribution of FDI inflow to Cuba is significantly related to the Governmental Factors for the three groups of countries.

Summary

This chapter illustrated the research methodology design for the study, which was further analyzed by proposed research and design model. The research questions were examined, describing the primary and secondary analysis, illustrating the gathering method and the structure of the variables. Furthermore, the operation of the dependent and independent variables, the research hypotheses, a measure of the data collection with sampling techniques and statistical methods in the manner the sample was selected and discussed in the research. Chapter 4 presents further evidence of the research sample and the analytical examination of the data. Furthermore, the result of the statistical examination of the research hypothesis was tested in order to verify if the null hypothesis would either be accepted or rejected.

CHAPTER 4

ANALYSIS AND FINDINGS

Introduction

This chapter provides a discussion of the data, data analysis and the research findings. This study tested the variables from 13 non-oil producing countries that can impact FDI inflow to Cuba. The variables were: GNI per capita, Financial Capital, Level of Technology, Human Capital, Energy and Natural Resources, Transportation and Communication, Market Type, Environment Factors and Governmental Factors. The 13 non-oil producing countries were selected based on their demographics, economic category status and or their FDI relationship with the Republic of Cuba.

Data

The data described in Chapter 3 were obtained for 13 countries from the World Bank, Freedom House (2000-

2001), International Labor Office Database, World Investment Report, (UNCTAD, 1998-2008), World Resource Institute and United Nations for the period, 1998 through 2008. The samples of countries were grouped into three different categories, including advanced countries, developing countries and least developed countries. The countries classified as advanced countries were United States, Japan, France, Germany and Spain. The developing countries were China, India and the Russian Federation. The least developed countries were Jamaica, Haiti, Peru, Madagascar and Nepal. All hypotheses were tested using SPSS.

Results for Hypothesis 1

FDI to Cuba was the dependent variable. For the advanced countries, the independent variables were GNI per capita for the United States, Japan, Germany, France and Spain (Sawalha, 2007). The independent variables for the developing countries were GNI per capita for China, India and the Russian Federation (Sawalha, 2007). The independent variables for the

Least Developed Countries (LCD's) were GNI per capita for Jamaica, Haiti, Peru, Madagascar and Nepal. The Republic of Cuba's GNI per capita was not included in the model as there were only three data points.

The correlation coefficient for GNI per Capita Atlas and GNI per capita PPP for the United States was 0.9926, implying that these measures were highly correlated. Similar results were found for GNI per capita for the other countries. Hence, Hypothesis 1 was only tested with GNI per Capita Atlas. The difference between GNI per Capita Atlas and PPP is based on the measurement of GNI per Capita. GNI per capita Atlas was based on the country's domestic monetary measurement, while GNI per PPP was based on the international monetary measurement (worldbank report, 2008).

The first hypothesis to be tested is:

Hypothesis H_{01}: The level of contribution of FDI inflow to Cuba is not significantly related to the GNI per capita for the three groups of countries.

Hypothesis H_{A1}: The level of contribution of FDI inflow to Cuba is significantly related to the GNI per capita for the three groups of countries.

The multiple regression models utilized to test Hypothesis 1 are listed below.

Category I (Advanced Countries)

$$FDI_{CUBA} = \alpha_O + \alpha_1 GNIPCAP_{US} + \alpha_2 GNIPCAP_{Japan} + \alpha_3 GNIPCAP_{Germany} + \alpha_4 GNIPCAP_{France} + \alpha_5 GNIPCAP_{Spain} + \varepsilon_1$$

Categories II (Developing Countries)

$$FDI_{CUBA} = \beta_O + \beta_1 GNIPCAP_{China} + \beta_2 GNIPCAP_{India} + \beta_3 GNIPCAP_{Russian\ Federation} + \varepsilon_2$$

Categories III (Least Developed Countries)

$$FDI_{CUBA} = \delta_0 + \delta_1 GNIPCAP_{Jamaica} + \delta_2 GNIPCAP_{Haiti} + \delta_3 GNIPCAP_{Peru} + \delta_4 GNIPCAP_{Madagascar} + \delta_5 GNIPCAP_{Nepal} + \varepsilon_3$$

The results were presented for the independent variables measuring GNI Per Capita Atlas for each of the three categories of countries.

Results for GNI Per Capita

Results for Category I (Advanced Countries) Using the Independent Variable, GNI Per Capita Atlas

The multiple regression analysis, with FDI to Cuba as the dependent variable and GNI Per Capita Atlas for the advanced countries, the United States, Japan, Germany, France and Spain as the independent variables, did not revealed any significant relationships. From the ANOVA, the F-value = 4.038 with a p-value = 0.100 implying that the model was not significant (Table 1). This was also seen from the multiple regression analysis where the beta coefficients were not significant, implying the null hypothesis was not rejected for these countries (Table 2). Therefore, there was no significant correlation between the FDI to Cuba and the GNI Per Capita Atlas for these advanced countries, the United States, Japan, Germany, France and Spain. This result was surprising as Germany, France and Spain had been providing significant FDI to Cuba. From the collinearity diagnostics, the variance inflation factors (VIF) were 227.125, 9.760, 2952.463, 4482.878 and 636.668 for the United States, Japan, Germany, France and Spain, respectively, implying a major multicollinearity problem. (A VIF greater than 5 is usually an indication of a multicollinearity problem.) This implies that the five independent variables are highly correlated and cannot be utilized for multiple regression analysis. A correlation analysis further reinforced this position. Simple linear regression was conducted for each of these countries.

Table 1
Regression Analysis of the United States, Japan, Germany, France, Spain & FDI Cuba

ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	938.241	5	187.648	4.038	.100
	Residual	185.859	4	46.465		
	Total	1124.100	9			

a. Predictors: (Constant), GNISPAIN, GNIJAPAN, GNIUS, GNIGERMA, GNIFRANC
b. Dependent Variable: FDICUBA

Table 2
Regression Coefficient of the United States, Japan, Germany, France, Spain & FDI Cuba

Coefficients

		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
Model		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	219.765	150.260		1.463	.217		
	GNIUS	-1.312E-02	.006	-6.430	-2.099	.104	.004	227.125
	GNIGERMA	-1.584E-02	.022	-8.132	-.736	.503	.000	2952.463
	GNIJAPAN	4.472E-03	.003	.993	1.563	.193	.102	9.760
	GNIFRANC	7.328E-03	.025	3.997	.294	.784	.000	4482.878
	GNISPAIN	1.942E-02	.010	9.918	1.933	.125	.002	636.668

a. Dependent Variable: FDICUBA

A simple linear regression analysis between FDI Cuba and GNI Per Capita Atlas for the United States did not revealed a significant relationship (β = 0.00992, p-value = 0.154). Therefore, there was not a significant correlation between the FDI to Cuba and the GNI Per Capita Atlas for the United States, implying the null hypothesis was not rejected for this country. The fact that there was no significant relationship was reinforcing the existing trade embargo between the United States and Cuba (Mesa-Lago, 2001) (Tables 3 and 4).

Table 3
Regression Analysis of the United States & FDI Cuba

ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	265.732	1	265.732	2.477	.154
	Residual	858.368	8	107.296		
	Total	1124.100	9			

a. Predictors: (Constant), GNIUS
b. Dependent Variable: FDICUBA

Table 4
Regression Coefficient Analysis of the United States & FDI Cuba

Coefficients

		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
Model		B	Std. Error	Beta		
1	(Constant)	-30.053	24.212		-1.241	.250
	GNIUS	9.924E-04	.001	.486	1.574	.154

a. Dependent Variable: FDICUBA

A simple linear regression analysis between FDI Cuba and GNI Per Capita Atlas for Japan did not revealed a significant relationship (β = 0.00253, p-value = 0.092). Therefore, there was not a significant correlation between the FDI to Cuba and the GNI Per Capita Atlas for Japan, implying the null hypothesis was not rejected for this country. The fact that there was no significant relationship implied that Japan was not a major trading partner with Cuba. However, there are examples of Japan investing in Cuba (McPherson & Trumbull, 2007) (Tables 5 and 6).

Table 5
Regression Analysis of Japan & FDI Cuba

ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	353.676	1	353.676	3.673	.092
	Residual	770.424	8	96.303		
	Total	1124.100	9			

a. Predictors: (Constant), GNIJAPAN
b. Dependent Variable: FDICUBA

Table 6
Regression Coefficient Analysis of Japan & FDI Cuba

Coefficients

		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
Model		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	-81.702	46.754		-1.747	.119		
	GNIJAPAN	2.526E-03	.001	.561	1.916	.092	1.000	1.000

a. Dependent Variable: FDICUBA

A simple linear regression analysis between FDI Cuba and GNI per Capita Atlas for Germany revealed a significant positive relationship (β = 0.00142, p-value = 0.017) (Tables 7 and 8). Therefore, a significant positive correlation existed between the FDI to Cuba and the GNI Per Capita Atlas for Germany, implying the null hypothesis was rejected for this country. This result was not surprising as Germany and other member countries from the European Union have investments in Cuba (Travieso-Diaz & Trumbull, 2003).

Table 7
Regression Analysis of Germany & FDI Cuba

ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
	Regression	597.474	1	597.474	9.076	.017
	Residual	526.626	8	65.828		
	Total	1124.100	9			

a. Predictors: (Constant), GNIGERMA
b. Dependent Variable: FDICUBA

Table 8
Regression Coefficient Analysis of Germany & FDI Cuba

Coefficients

		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
Model		B	Std. Error	Beta		
1	(Constant)	-33.922	14.052		-2.414	.042
	GNIGERMA	1.420E-03	.000	.729	3.013	.017

a. Dependent Variable: FDICUBA

A simple linear regression analysis between FDI Cuba and GNI per Capita Atlas for France revealed a significant positive relationship (β = 0.00128, p-value = 0.024) (Tables 9 and 10). Therefore, a significant positive correlation existed between the FDI to Cuba and the GNI Per Capita Atlas for France, implying the null hypothesis was rejected for this country. This was a reasonable result as France does provide FDI to Cuba (Travieso-Diaz & Trumbull, 2003).

Table 9
Regression Analysis of France & FDI Cuba

ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	552.298	1	552.298	7.727	.024
	Residual	571.802	8	71.475		
	Total	1124.100	9			

a. Predictors: (Constant), GNIFRANC
b. Dependent Variable: FDICUBA

Table 10
Regression Coefficient Analysis of France & FDI Cuba

Coefficients

		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
Model		B	Std. Error	Beta		
1	(Constant)	-29.121	13.513		-2.155	.063
	GNIFRANC	1.285E-03	.000	.701	2.780	.024

a. Dependent Variable: FDICUBA

A simple linear regression analysis between FDI Cuba and GNI per Capita Atlas for Spain revealed a significant positive relationship (β = 0.00129, p-value = 0.038) (Tables 11 and 12). Therefore, a significant positive correlation existed between the FDI to Cuba and the GNI Per Capita Atlas for Spain, implying the null hypothesis was rejected for this country. As above, this was a reasonable result (Travieso-Diaz & Trumbull, 2003).

Table 11
Regression Analysis of Spain & FDI Cuba

ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	487.425	1	487.425	6.125	.038
	Residual	636.675	8	79.584		
	Total	1124.100	9			

a. Predictors: (Constant), GNISPAIN
b. Dependent Variable: FDICUBA

Table 12
Regression Coefficient Analysis of Spain & FDI Cuba

Coefficients

		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
Model		B	Std. Error	Beta		
1	(Constant)	-17.747	10.662		-1.664	.135
	GNISPAIN	1.289E-03	.001	.658	2.475	.038

a. Dependent Variable: FDICUBA

Results for Category II (Developing Countries) Using the Independent Variable for the Measure of GNI Per Capita Atlas

The multiple regression analysis, with FDI to Cuba as the dependent variable and GNI Per Capita Atlas for the developing countries, China, India and the Russian Federation as the independent variables, did not revealed any significant relationships. From the ANOVA, the F-value = 3.291 with a p-value = 0.100 implying that the model was not significant (Table 13). This was also seen from the multiple regression analysis where the beta coefficients were not significant, implying the null hypothesis was not rejected for these countries (Table 14). Therefore, there was not a significant correlation between the FDI to Cuba and the GNI Per Capita Atlas for these developing countries China, India and the Russian Federation. This result was surprising, as the Russian Federation had been providing significant FDI to Cuba. From the collinearity diagnostics, the variance inflation factors (VIF) were 90.923, 170.533 and 43.671 for China, India and the Russian Federation, respectively, implying a major multicollinearity problem. (As stated before a VIF greater than 5 is usually an indication of a multicollinearity problem.) This implies that the three independent variables are highly correlated and cannot be utilized for multiple regression analysis. A correlation analysis further reinforced this position. Simple linear regression was conducted for each of these countries.

Table 13
Regression Analysis of Russian Federation, China, India & FDI Cuba

ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	699.202	3	233.067	3.291	.100
	Residual	424.898	6	70.816		
	Total	1124.100	9			

a. Predictors: (Constant), GNIRUSS, GNICHINA, GNIINDIA
b. Dependent Variable: FDICUBA

Table 14
Regression Coefficient Analysis of Russian Federation, China, India & FDI Cuba

Coefficients

		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics		
Model		B	Std. Error	Beta			Tolerance	VIF	
1	(Constant)	-15.840	37.045		-.428	.684			
	GNICHINA	-7.160E-02	.050	-3.431	-1.434	.202	.011	90.923	
	GNIINDIA	.161	.197	2.691	.821	.443	.006	170.533	
	GNIRUSS	7.582E-03	.009	1.357	.818	.445	.023	43.671	

a. Dependent Variable: FDICUBA

A simple linear regression analysis between FDI Cuba and GNI Per Capita Atlas for China did not revealed a significant relationship (β = 0.0119, p-value = 0.087). As a result, there was not a significant correlation between the FDI to Cuba and the GNI Per Capita Atlas for China, implying the null hypothesis was not rejected for this country. The fact that there are no significant relationship was reinforcing that China is not trading openly with Cuba during the time period from 1998-2008. However, in 2008 Cuba has begun to trade openly with China; therefore, this figure may change in the near future since Cuba has started to implement the Chinese model for economic reform (Mesa-Lago, 2005) (Tables 15 and 16).

Table 15
Regression Analysis of China & FDI Cuba

ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	362.415	1	362.415	3.806	.087
	Residual	761.685	8	95.211		
	Total	1124.100	9			

a. Predictors: (Constant), GNICHINA
b. Dependent Variable: FDICUBA

Table 16

Regression Coefficient Analysis of China & FDI Cuba

Coefficients

		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
Model		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	-8.366	8.794		-.951	.369		
	GNICHINA	1.185E-02	.006	.568	1.951	.087	1.000	1.000

a. Dependent Variable: FDICUBA

A simple linear regression analysis between FDI Cuba and GNI Per Capita Atlas for India did not revealed a significant, but a marginal relationship (β = 0.0372, p-value = 0.056). As a result, the null hypothesis was marginally rejected. Therefore, a significant positive marginal correlation existed between the FDI to Cuba and the GNI Per Capita Atlas for India. This result was not surprising since India has just recently begun FDI investment in Cuba, primarily in tourism, manufacturing of vehicles and pharmaceutical products (Cuba trade, 2008) (Tables 17 and 18).

Table 17
Regression Analysis of India & FDI Cuba

ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	432.315	1	432.315	4.999	.056
	Residual	691.785	8	86.473		
	Total	1124.100	9			

a. Predictors: (Constant), GNIINDIA
b. Dependent Variable: FDICUBA

Table 18
Regression Coefficient Analysis of India & FDI Cuba

Coefficients

		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
Model		B	Std. Error	Beta			Tolerance	VIF
	(Constant)	-14.282	10.262		-1.392	.201		
	GNIINDIA	3.719E-02	.017	.620	2.236	.056	1.000	1.000

a. Dependent Variable: FDICUBA

A simple linear regression analysis between FDI Cuba and GNI per Capita Atlas for the Russian Federation revealed a significant positive relationship (β = 0.00371, p-value = 0.036)(Tables 19 and 20). Therefore, a significant positive correlation existed between the FDI to Cuba and the GNI Per Capita Atlas for the Russian Federation, implying the null hypothesis was rejected for this country. This was a reasonable result, considering Cuba’s long-term trade and investment relationship with the Russian Federation, as well as recent investment by the Russian Federation in oil and mining exploration in Cuba (Mesa-Lago, 2005).

Table 19

Regression Analysis of Russian Federation & FDI Cuba

ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	496.232	1	496.232	6.323	.036
	Residual	627.868	8	78.483		
	Total	1124.100	9			

a. Predictors: (Constant), GNIRUSS
b. Dependent Variable: FDICUBA

Table 20

Regression Coefficient Analysis of Russian Federation & FDI Cuba

Coefficients

		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
Model		B	Std. Error	Beta		
1	(Constant)	-4.661	5.658		-.824	.434
	GNIRUSS	3.713E-03	.001	.664	2.515	.036

a. Dependent Variable: FDICUBA

Results for Category III (Least Developed Countries) Using the Independent Variable for the Measure of GNI Per Capita Atlas

For the third category of countries, multiple regression analysis was done for FDI to Cuba as the dependent variable and GNI Per Capita Atlas for the least Developing countries, Jamaica, Haiti, Peru, Madagascar, and Nepal as the independent variables. This analysis did not revealed any significant relationships with FDI to Cuba (F value = 1.711 with a p-value = 0.311) (Table 21). Again, the beta coefficients were not significant, implying the null hypothesis was not rejected for these countries (Table 22). Therefore, there was not a significant correlation between the FDI of Cuba and the GNI Per Capita Atlas for the least developing countries of Jamaica, Haiti, Peru, Madagascar, and Nepal. Like above, the GNI per capita for these five countries were highly correlated with VIFs (variance inflation factor) of 49.166, 2.389, 5.172, 10.218 and 23.979 for Nepal, Haiti, Madagascar, Jamaica and Peru, respectively. (VIF greater than 5 is usually an indication of a multicollinearity problem.) A correlation analysis was also done and reinforced the high correlation among these variables. Simple linear regression was conducted for each of these countries.

Table 21
Regression Analysis of Nepal, Haiti, Madagascar, Jamaica, Peru & FDI Cuba

ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	766.018	5	153.204	1.711	.311
	Residual	358.082	4	89.520		
	Total	1124.100	9			

a. Predictors: (Constant), GNIPERU, GNIHAITI, GNIJAM, GNIMADA, GNINEPAL
b. Dependent Variable: FDICUBA

Table 22
Regression Coefficient Analysis of Nepal, Haiti, Madagascar, Jamaica, Peru & FDI Cuba

Coefficients

		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
Model		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	-2.715	88.896		-.031	.977		
	GNINEPAL	-.295	.448	-1.304	-.659	.546	.020	49.166
	GNIHAITI	-8.298E-02	.105	-.343	-.787	.475	.419	2.389
	GNIMADA	-.269	.234	-.737	-1.148	.315	.193	5.172
	GNIJAM	1.713E-02	.035	.442	.490	.650	.098	10.218
	GNIPERU	5.835E-02	.033	2.443	1.768	.152	.042	23.979

a. Dependent Variable: FDICUBA

A simple linear regression analysis between FDI Cuba and GNI Per Capita Atlas for Jamaica did not revealed a significant relationship (β = 0.0169, p-value = 0.208)(Tables 23 and 24). Therefore, there was not a significant correlation between the FDI to Cuba and the GNI Per Capita Atlas for Jamaica, implying the null hypothesis was not rejected for this country.

Table 23
Regression Analysis of Jamaica & FDI Cuba

ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	213.912	1	213.912	1.880	.208
	Residual	910.188	8	113.773		
	Total	1124.100	9			

a. Predictors: (Constant), GNIJAM
b. Dependent Variable: FDICUBA

Table 24
Regression Coefficient Analysis of Jamaica & FDI Cuba

Coefficients

		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
Model		B	Std. Error	Beta			Tolerance	VIF
	(Constant)	-44.744	38.395		-1.165	.277		
	GNIJAM	1.689E-02	.012	.436	1.371	.208	1.000	1.000

a. Dependent Variable: FDICUBA

A simple linear regression analysis between FDI Cuba and GNI Per Capita Atlas for Haiti did not revealed a significant relationship (β = 0.1000, p-value = 0.235)(Tables 25 and 26). Therefore, there was not a significant correlation between the FDI to Cuba and the GNI Per Capita Atlas for Haiti, implying the null hypothesis was not rejected for this country.

Table 25

Regression Analysis of Haiti & FDI Cuba

ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	192.500	1	192.500	1.653	.235
	Residual	931.600	8	116.450		
	Total	1124.100	9			

a. Predictors: (Constant), GNIHAITI

b. Dependent Variable: FDICUBA

Table 26

Regression Coefficient Analysis of Haiti & FDI Cuba

Coefficients

		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
Model		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	-35.800	34.005		-1.053	.323		
	GNIHAITI	1.000E-01	.078	.414	1.286	.235	1.000	1.000

a. Dependent Variable: FDICUBA

A simple linear regression analysis between FDI Cuba and GNI per Capita Atlas for Peru revealed a significant positive relationship (β = 0.0166, p-value = 0.026)(Tables 27 and 28) Therefore, a significant positive correlation existed between the FDI to Cuba and the GNI Per Capita Atlas for Peru, implying the null hypothesis was rejected for this country. The increase in GNI per Capita Atlas in Peru was significantly related to FDI in Cuba; even though, there was no evidence to suggest that Cuba is receiving foreign investment from Peru.

Table 27
Regression Analysis of Peru & FDI Cuba

ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	540.044	1	540.044	7.397	.026
	Residual	584.056	8	73.007		
	Total	1124.100	9			

a. Predictors: (Constant), GNIPERU
b. Dependent Variable: FDICUBA

Table 28
Regression Coefficient Analysis of Peru & FDI Cuba

Coefficients

		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
Model		B	Std. Error	Beta		
1	(Constant)	-32.415	14.995		-2.162	.063
	GNIPERU	1.656E-02	.006	.693	2.720	.026

a. Dependent Variable: FDICUBA

A simple linear regression analysis between FDI Cuba and GNI Per Capita Atlas for Madagascar did not revealed a significant relationship (β = 0.148, p-value = 0.245)(Tables 29 and 30). Therefore, there was not a significant correlation between the FDI to Cuba and the GNI Per Capita Atlas for Madagascar, implying the null hypothesis was not rejected for this country. This seems reasonable as this country's development did not impact Cuba's FDI.

Table 29
Regression Analysis of Madagascar & FDI Cuba

ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	184.538	1	184.538	1.571	.245
	Residual	939.562	8	117.445		
	Total	1124.100	9			

a. Predictors: (Constant), GNIMADA
b. Dependent Variable: FDICUBA

Table 30
Regression Coefficient Analysis of Madagascar & FDI Cuba

Coefficients

		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
Model		B	Std. Error	Beta			Tolerance	VIF
	(Constant)	-31.633	31.565		-1.002	.346		
	GNIMADA	.148	.118	.405	1.254	.245	1.000	1.000

a. Dependent Variable: FDICUBA

A simple linear regression analysis between FDI Cuba and GNI Per Capita Atlas for Nepal did not revealed a significant relationship (β = 0.133, p-value = 0.075)(Tables 31 and 32). Therefore, there was not a significant correlation between the FDI to Cuba and the GNI Per Capita Atlas for Nepal, implying the null hypothesis was not rejected for this country. This seems reasonable since Cuba's GNI per Capita Atlas was not impacted by Nepal.

Table 31
Regression Analysis of Nepal & FDI Cuba

ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	386.051	1	386.051	4.185	.075
	Residual	738.049	8	92.256		
	Total	1124.100	9			

a. Predictors: (Constant), GNINEPAL
b. Dependent Variable: FDICUBA

Table 32
Regression Coefficient Analysis of Nepal & FDI Cuba

Coefficients

		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
Model		B	Std. Error	Beta			Tolerance	VIF
	(Constant)	-26.695	17.086		-1.562	.157		
	GNINEPAL	.133	.065	.586	2.046	.075	1.000	1.000

a. Dependent Variable: FDICUBA

Summary of Results for Hypothesis 1.

Category I (Advanced Countries)

Significant positive relationship existed between FDI inflow to Cuba and GNI per Capita Atlas for Germany, France and Spain. Insignificant results were found for the United States and Japan.

Category II (Developing Countries)

Significant positive relationship existed between FDI inflow to Cuba and GNI per Capita Atlas for the Russian Federation. Insignificant results were found for China, while India showed a positive marginal result.

Category III (Least Developing Countries)

Significant positive relationship existed between FDI inflow to Cuba and GNI per Capita Atlas for Peru. Insignificant results were found for Jamaica, Haiti, Madagascar and Nepal.

Results for Hypothesis 2

FDI to Cuba was the dependent variable. For the advanced countries, the independent variables were the Financial Capital for the United States, Japan, Germany, France and Spain (Sawalha, 2007). The independent variables for the developing countries were Financial Capital for China, India and the Russian Federation (Sawalha, 2007). The independent variables for the Least Developed Countries (LCD's) were Financial Capital for Jamaica, Haiti, Peru, Madagascar and Nepal. The Republic of Cuba's Financial Capital was not included in the model as there were only three data points. Proxies for financial capital included two variables, Gross Fixed Capital Formation (percent annual growth of GDP) and Gross Capital Formation (percent of GDP).

The second hypothesis to be tested is:

Hypothesis H_{02}: The level of contribution of FDI inflow to Cuba is not significantly related to the Financial Capital for the three groups of countries.

Hypothesis H_{A2}: The level of contribution of FDI inflow to Cuba is significantly related to the Financial Capital for three groups of countries.

The multiple regression models to test Hypothesis 2 are listed below.

Category I (Advanced Countries)

$$FDI_{CUBA} = \alpha_O + \alpha_1 FCPCAP_{US} + \alpha_2 FCPCAP_{Japan} + \alpha_3 FCPCAP_{Germany} + \alpha_4 FCPCAP_{France} + \alpha_5 FCPCAP_{Spain} + \varepsilon_1$$

Categories II (Developing Countries)

$$FDI_{CUBA} = \beta_O + \beta_1 FCPCAP_{China} + \beta_2 FCPCAP_{India} + \beta_3 FCPCAP_{Russian\ Federation} + \varepsilon_2$$

Categories III (Least Developed Countries)

$$FDI_{CUBA} = \delta o + \delta_1 FCPCAP_{Jamaica} + \delta_2 FCPCAP_{Haiti} + \delta_3 FCPCAP_{Peru} + \delta_4 FCPCAP_{Madagascar} + \delta_5 FCPCAP_{Nepal} + \varepsilon_3$$

The results was presented for both independent variables measuring gross fixed capital and gross capital formation for each of the three categories of countries.

Results for Gross Fixed Capital Formation

Pearson Correlation Analysis

A Pearson Correlation Analysis among the advanced, developing, and least developed non-oil producing countries revealed a significant correlation between FDI for Cuba and Gross Fixed Capital Formation (percent annual growth of GDP) for India (Table 33).

The correlations for the other countries were insignificant.

Table 33

Pearson Correlation analysis for FDI Cuba and Gross Fixed Capital formation for all the countries in the Study

FDI Cuba Pearson Correlation Sig. (2-Tailed) N	USA	Japan	Germany	France	Spain	China	India	Russian Federation
	-0.094 0.796 10	-0.135 0.709 10	0.354 0.315 10	-0.001 0.998 10	0.090 0.804 10	0.531 0.115 10	0.640* 0.046 10	-0.308 0.386 10

Jamaica	Haiti	Peru	Madagascar	Nepal
-0.317 0.372 10	0.543 0.105 10	0.377 0.283 10	0.015 0.967 10	-0.297 0.404 10

<u>Results for Category I (Advanced Countries) Using the Independent Variable, Gross Fixed Capital Formation</u>

The multiple regression analysis, with FDI to Cuba as the dependent variable and Gross Fixed Capital Formation for the advanced countries, the United States, Japan, Germany, France and Spain as the independent variables, did not revealed any significant relationships. From the ANOVA, the F-value = 0.807 with a p-value = 0.599 implying that the model was not significant (Table 34). This was also seen from the multiple regression analysis where the beta coefficients were not significant, implying the null hypothesis was not rejected for these countries (Table 35). Therefore, there was not a significant correlation between the FDI to Cuba and the Gross Fixed Capital Formation for these advanced countries, the United States, Japan, Germany, France and Spain. This result was surprising as Germany, France and Spain had been providing significant FDI to Cuba. From the collinearity diagnostics, the variance inflation factor (VIF) was 2.005, 1.578, 3.611, 5.414 and 3.356 for the United States, Japan, Germany, France and Spain, respectively, implying a multicollinearity problem. (VIF greater than 5 is usually an indication of a multicollinearity problem.) This implied that one of the five independent variables was highly correlated with one or more of the other four independent variables. A correlation analysis further reinforced this position. Simple linear regression was conducted for each of these countries.

Table 34
Regression Analysis of the United States, Japan, Germany, France, Spain & FDI Cuba

ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	564.517	5	112.903	.807	.599
	Residual	559.583	4	139.896		
	Total	1124.100	9			

a. Predictors: (Constant), SPAIN, JAPAN, USA, GERMANY, FRANCE
b. Dependent Variable: FDICUBA

Table 35
Regression Coefficient of the United States, Japan, Germany, France, Spain & FDI Cuba

Coefficients

		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
Model		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	25.647	31.834		.806	.466		
	USA	.800	5.297	.075	.151	.887	.499	2.005
	JAPAN	-3.960	3.105	-.565	-1.276	.271	.634	1.578
	GERMANY	13.263	6.936	1.282	1.912	.128	.277	3.611
	FRANCE	-9.279	8.660	-.880	-1.072	.344	.185	5.414
	SPAIN	-3.729	9.788	-.246	-.381	.723	.298	3.356

a Dependent Variable: FDICUBA

A simple linear regression analysis between FDI Cuba and Gross Fixed Capital Formation for the United States did not revealed a significant relationship (β = -1.000, p-value = 0.796) (Tables 36 and 37). Therefore, there was not a significant correlation between the FDI to Cuba and the Gross Fixed Capital

Formation for the United States, implying the null hypothesis was not rejected for this country. The fact that there was no significant relationship was reinforcing the existing trade embargo (Mesa-Lago, 2001).

Table 36

Regression Analysis of the United States & FDI Cuba

ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	10.000	1	10.000	.072	.796
	Residual	1114.100	8	139.263		
	Total	1124.100	9			

a.Predictors: (Constant), USA
b.Dependent Variable: FDICUBA

Table 37

Regression Coefficient Analysis of the United States & FDI Cuba

Coefficients

		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
Model		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	10.700	11.801		.907	.391		
	USA	-1.000	3.732	-.094	-.268	.796	1.000	1.000

a. Dependent Variable: FDICUBA

A simple linear regression analysis between FDI Cuba and Gross Fixed Capital Formation for Japan did not revealed a significant relationship (β = -0.948, p-value = 0.709) (Tables 38 and 39). Therefore, there was not a significant correlation between the FDI to Cuba and the Gross Fixed Capital Formation for Japan, implying the null hypothesis was not rejected for this country. This result was relevant since Gross Fixed Capital Formation in Japan did not correlate with FDI to Cuba.

Table 38

Regression Analysis of Japan & FDI Cuba

ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	20.563	1	20.563	.149	.709
	Residual	1103.537	8	137.942		
	Total	1124.100	9			

a. Predictors: (Constant), JAPAN
b. Dependent Variable: FDICUBA

Table 39

Regression Coefficient Analysis of Japan & FDI Cuba

Coefficients

		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
Model		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	8.742	4.592		1.904	.093		
	JAPAN	-.948	2.454	-.135	-.386	.709	1.000	1.000

a. Dependent Variable: FDICUBA

A simple linear regression analysis between FDI Cuba and Gross Fixed Capital Formation for Germany did not revealed a significant relationship (β = 3.67, p-value = 0.315) (Tables 40 and 41). Therefore, there was not a significant correlation between FDI to Cuba and the Gross Fixed Capital Formation for Germany, implying the null hypothesis was not rejected for this country. Hence, Gross Fixed Capital Formation in Germany was not related to FDI to Cuba.

Table 40
Regression Analysis of Germany & FDI Cuba

ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
	Regression	141.167	1	141.167	1.149	.315
	Residual	982.933	8	122.867		
	Total	1124.100	9			

a. Predictors: (Constant), GERMANY
b. Dependent Variable: FDICUBA

Table 41
Regression Coefficient Analysis of Germany & FDI Cuba

Coefficients

		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
Model		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	2.200	6.214		.354	.732		
	GERMANY	3.667	3.421	.354	1.072	.315	1.000	1.000

a. Dependent Variable: FDICUBA

A simple linear regression analysis between FDI Cuba and Gross Fixed Capital Formation for France did not revealed a significant relationship (β = -0.00990, p-value = 0.998) (Tables 42 and 43). Therefore, there was not a significant correlation between FDI to Cuba and the Gross Fixed Capital Formation for France, implying that the null hypothesis was not rejected for this country. This result was relevant since Gross Fixed Capital Formation in France did not correlate with FDI to Cuba.

Table 42
Regression Analysis of France & FDI Cuba

ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	9.901E-04	1	9.901E-04	.000	.998
	Residual	1124.099	8	140.512		
	Total	1124.100	9			

a. Predictors: (Constant), FRANCE
b. Dependent Variable: FDICUBA

Table 43
Regression Coefficient Analysis of France & FDI Cuba

Coefficients

		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
Model		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	7.723	9.362		.825	.433		
	FRANCE	-9.901E-03	3.730	-.001	-.003	.998	1.000	1.000

a. Dependent Variable: FDICUBA

A simple linear regression analysis between FDI Cuba and Gross Fixed Capital Formation for Spain did not revealed a significant relationship (β = 1.37, p-value = 0.804) (Tables 44 and 45). Therefore, there was not a significant correlation between FDI to Cuba and the Gross Fixed Capital Formation for Spain, implying that the null hypothesis was not rejected for this country. Hence, Gross Fixed Capital Formation in Spain was not related to FDI to Cuba.

Table 44
Regression Analysis of Spain & FDI Cuba

ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	9.161	1	9.161	.066	.804
	Residual	1114.939	8	139.367		
	Total	1124.100	9			

a. Predictors: (Constant), SPAIN
b. Dependent Variable: FDICUBA

Table 45
Regression Coefficient Analysis of Spain & FDI Cuba

Coefficients

		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
Model		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	2.367	21.132		.112	.914		
	SPAIN	1.367	5.333	.090	.256	.804	1.000	1.000

a Dependent Variable: FDICUBA

Results for Category I (Advanced Countries) Using the Independent Variable, Gross Capital Formation

Pearson Correlation Analysis

A Pearson Correlation Analysis among the advanced limited, developing, and least developed countries did not revealed a significant correlation among FDI to Cuba and Gross Capital Formation (Table 46).

Table 46

Pearson Correlation analysis for FDI Cuba and Gross Capital Formation for all the Countries in the Study

FDI Cuba Pearson Correlation Sig. (2-Tailed) N	USA	Japan	Germany	France	Spain	China	India	Russian Federation
	0.545 0.104 10	0.169 0.640 10	-0.126 0.729 10	0.477 0.163 10	0.442 0.201 10	0.575 0.082 10	0.623 0.054 10	0.045 0.902 10
Jamaica	Haiti	Peru	Madagascar	Nepal				
0.360 0.307 10	0.232 0.520 10	0.355 0.314 10	0.575 0.082 10	0.609 0.062 10				

Results for Category I (Advanced Countries) Using the Independent Variable, Gross Capital Formation

The multiple regression analysis, with FDI to Cuba as the dependent variable and Gross Capital Formation for the advanced countries, the United States, Japan, Germany, France and Spain as the independent variables, did not revealed any significant relationships. From the ANOVA, the F-value = 1.817 with a p-value = 0.291 implying that the model was not significant (Table 47). This was also seen from the multiple regression analysis where the beta coefficients were not significant, implying the null hypothesis was not rejected for these countries (Table 48). Therefore, there was not a significant correlation between the FDI to Cuba and the Gross Capital Formation for these advanced countries, the United States, Japan, Germany, France and Spain. This result is surprising as Germany, France and Spain had been providing significant FDI to Cuba. From the collinearity diagnostics, the variance inflation factor (VIF) was 5.838, 10.513, 8.113, 8.273 and 21.285 for the United States, Japan, Germany, France and Spain, respectively implying a major multicollinearity problem (A VIF greater than 5 is usually an indication of a multicollinearity problem.) This implies that all the independent variables are highly correlated and cannot be utilized for multiple regression analysis. A Pearson correlation analysis further reinforced this position. Hence, simple linear regression was conducted for each of these countries.

Table 47 *Regression Analysis of the United States, Japan, Germany, France, Spain & FDI Cuba*

ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	780.498	5	156.100	1.817	.291
	Residual	343.602	4	85.901		
	Total	1124.100	9			

a. Predictors: (Constant), SPAIN, USA, FRANCE, GERMANY, JAPAN
b. Dependent Variable: FDICUBA

Table 48
Regression Coefficient of the United States, Japan, Germany, France, Spain & FDI Cuba

Coefficients

		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
Model		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	-297.668	144.370		-2.062	.108		
	USA	6.711	8.852	.506	.758	.491	.171	5.838
	JAPAN	12.198	9.699	1.127	1.258	.277	.095	10.513
	GERMANY	-5.446	4.195	-1.022	-1.298	.264	.123	8.113
	FRANCE	-5.314	8.936	-.473	-.595	.584	.121	8.273
	SPAIN	3.227	5.610	.734	.575	.596	.047	21.285

a. Dependent Variable: FDICUBA

A simple linear regression analysis between FDI Cuba and Gross Capital Formation for the United States did not revealed a significant relationship (β = 7.22

p-value = 0.104)(Tables 49 and 50). Therefore, there was not a significant correlation between the FDI to Cuba and the Gross Capital Formation for the United States, implying the null hypothesis was not rejected for this country. The fact that there was no significant relationship was reinforcing the existing trade embargo (Mesa-Lago, 2001).

Table 49
Regression Analysis of United States & FDI Cuba

ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	333.506	1	333.506	3.375	.104
	Residual	790.594	8	98.824		
	Total	1124.100	9			

a.Predictors: (Constant), USA
b.Dependent Variable: FDICUBA

Table 50
Regression Coefficient Analysis of United States & FDI Cuba

Coefficients

		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
Model		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	-132.344	76.298		-1.735	.121		
	USA	7.219	3.930	.545	1.837	.104	1.000	1.000

a. Dependent Variable: FDICUBA

A simple linear regression analysis between FDI Cuba and Gross Capital Formation for Japan did not revealed a significant relationship (β = 1.83, p-value = 0.640) (Tables 51 and 52). Therefore, there was not a significant correlation between the FDI to Cuba and the Gross Capital Formation for Japan, implying the null hypothesis was not rejected for this country.

Table 51
Regression Analysis of Japan & FDI Cuba

ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	32.267	1	32.267	.236	.640
	Residual	1091.833	8	136.479		
	Total	1124.100	9			

a.Predictors: (Constant), JAPAN
b.Dependent Variable: FDICUBA

Table 52
Regression Coefficient Analysis of Japan & FDI Cuba

Coefficients

		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
Model		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	-36.667	91.321		-.402	.699		
	JAPAN	1.833	3.770	.169	.486	.640	1.000	1.000

a Dependent Variable: FDICUBA

A simple linear regression analysis between FDI Cuba and Gross Capital Formation for Germany did not revealed a significant relationship (β = -0.672, p-value = 0.729) (Tables 53 and 54). Therefore, there was not a significant correlation between the FDI to Cuba and the Gross Capital Formation for Germany, implying the null hypothesis was not rejected for this country.

Table 53
Regression Analysis of Germany & FDI Cuba

ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
	Regression	17.868	1	17.868	.129	.729
	Residual	1106.232	8	138.279		
	Total	1124.100	9			

a. Predictors: (Constant), GERMANY
b. Dependent Variable: FDICUBA

Table 54
Regression Coefficient Analysis of Germany & FDI Cuba

Coefficients

		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
Model		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	20.328	35.327		.575	.581		
	GERMANY	-.672	1.869	-.126	-.359	.729	1.000	1.000

a. Dependent Variable: FDICUBA

A simple linear regression analysis between FDI Cuba and Gross Capital Formation for France did not revealed a significant relationship (β = 5.36, p-value = 0.163) (Tables 55 and 56). Therefore, there was not a significant correlation between the FDI to Cuba and the Gross Capital Formation for France, implying the null hypothesis was not rejected for this country.

Table 55
Regression Analysis of France & FDI Cuba

ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	255.651	1	255.651	2.355	.163
	Residual	868.449	8	108.556		
	Total	1124.100	9			

a.Predictors: (Constant), FRANCE
b.Dependent Variable: FDICUBA

Table 56
Regression Coefficient Analysis of France & FDI Cuba

Coefficients

		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
Model		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	-98.955	69.578		-1.422	.193		
	FRANCE	5.360	3.492	.477	1.535	.163	1.000	1.000

a. Dependent Variable: FDICUBA

A simple linear regression analysis between FDI Cuba and Gross Capital Formation for Spain did not revealed a significant relationship (β = 1.94, p-value = 0.201) (Tables 57 and 58). Therefore, there was not a significant correlation between the FDI to Cuba and the Gross Capital Formation for Spain, implying the null hypothesis was not rejected for this country. As above, this was not a reasonable result since Spain is one of Cuba's largest partners for FDI investment (Chloe, 2008).

Table 57
Regression Analysis of Spain & FDI Cuba

ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	219.387	1	219.387	1.940	.201
	Residual	904.713	8	113.089		
	Total	1124.100	9			

a. Predictors: (Constant), SPAIN
b. Dependent Variable: FDICUBA

Table 58
Regression Coefficient Analysis of Spain & FDI Cuba

Coefficients

		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
Model		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	-45.349	38.236		-1.186	.270		
	SPAIN	1.943	1.395	.442	1.393	.201	1.000	1.000

a. Dependent Variable: FDICUBA

Results for Category II (Developing Countries) Using the Independent Variable, Gross Fixed Capital Formation

The multiple regression analysis, with FDI to Cuba as the dependent variable and Gross Fixed Capital Formation for the developing countries, China, India and the Russian Federation as the independent variables, did not revealed a significant relationship. From the ANOVA, the F-value = 3.524 with a p-value = 0.089 implying that the model was not significant (Table 59). This was also seen from the multiple regression analysis where the beta coefficient was not significant, implying the null hypothesis was not rejected for these countries (Table 60). This result was surprising as the Russian Federation and China have been providing significant FDI to Cuba. From the collinearity diagnostics, the variance inflation factor (VIF) was 3.011, 2.684 and 1.204 for China, India and the Russian Federation, respectively, which did not imply a major multicollinearity problem. (As stated before a VIF greater than 5 is usually an indication of a multicollinearity problem.) Simple linear regression was conducted for each of these countries.

Table 59
Regression Analysis of Russian Federation, China, India & FDI Cuba

ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	717.106	3	239.035	3.524	.089
	Residual	406.994	6	67.832		
	Total	1124.100	9			

a.Predictors: (Constant), RUSSIA, INDIA, CHINA
b.Dependent Variable: FDICUBA

Table 60
Regression Coefficient Analysis of Russian Federation, China, India & FDI Cuba

Coefficients

		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
Model		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	-23.099	15.896		-1.453	.196		
	CHINA	2.477	2.682	.394	.924	.391	.332	3.011
	INDIA	2.168	2.082	.419	1.041	.338	.373	2.684
	RUSSIA	-1.457	.752	-.522	-1.937	.101	.830	1.204

a. Dependent Variable: FDICUBA

A simple linear regression analysis between FDI Cuba and the Gross Fixed Capital Formation for China did not revealed a significant relationship (β = 3.34, p-value = 0.115) (Tables 61 and 62). Therefore, there was not a significant correlation between the FDI to Cuba and the Gross Fixed Capital Formation for China, implying the null hypothesis was not rejected for this country. This result was relevant since Gross Fixed Capital Formation in China did not correlate with FDI to Cuba. However, China is currently conducting FDI investment in Cuba since Cuba's adoption of the China model for economic reforms (Mesa-Lago, 2005).

Table 61
Regression Analysis of China & FDI Cuba

ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	316.445	1	316.445	3.134	.115
	Residual	807.655	8	100.957		
	Total	1124.100	9			

a. Predictors: (Constant), CHINA
b. Dependent Variable: FDICUBA

Table 62
Regression Coefficient Analysis of China & FDI Cuba

Coefficients

		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
Model		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	-24.345	18.377		-1.325	.222		
	CHINA	3.338	1.885	.531	1.770	.115	1.000	1.000

a Dependent Variable: FDICUBA

A simple linear regression analysis between FDI Cuba and the Gross Fixed Capital Formation for India revealed a significant positive relationship ($\beta = 3.31$, p-value = 0.046) (Tables 63 and 64). Therefore, there was a significant positive correlation between the FDI to Cuba and the Gross Fixed Capital Formation for India, implying the null hypothesis was rejected for this country. This result was surprising since India is recently conducting FDI investment in Cuba, mostly in tourism, manufacturing of vehicles and pharmaceutical products (Cuba trade, 2008). Therefore, the relationship being significant positive concludes as Gross Fixed Capital Formation in India increased then FDI to Cuba would also increased.

Table 63
Regression Analysis of India & FDI Cuba

ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	460.024	1	460.024	5.542	.046
	Residual	664.076	8	83.010		
	Total	1124.100	9			

a Predictors: (Constant), INDIA
b Dependent Variable: FDICUBA

Table 64
Regression Coefficient Analysis of India & FDI Cuba

Coefficients

		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
Model		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	-15.467	10.254		-1.508	.170		
	INDIA	3.310	1.406	.640	2.354	.046	1.000	1.000

a. Dependent Variable: FDICUBA

A simple linear regression analysis between FDI Cuba and the Gross Fixed Capital Formation for the Russian Federation did not revealed a significant relationship (β = -0.860, p-value = 0.386) (Tables 65 and 66.) Therefore, there was not a significant correlation between the FDI to Cuba and the Gross Fixed Capital Formation for the Russian Federation, implying the null hypothesis was not rejected for this country. This result was relevant since Gross Fixed Capital Formation in the Russian Federation did not correlate with FDI to Cuba; even though, the Russian Federation has had a long political and economic relationship with Cuba.

Table 65
Regression Analysis of Russian Federation & FDI Cuba

ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	106.826	1	106.826	.840	.386
	Residual	1017.274	8	127.159		
	Total	1124.100	9			

a. Predictors: (Constant), RUSSIA
b. Dependent Variable: FDICUBA

Table 66
Regression Coefficient Analysis of Russian Federation & FDI Cuba

Coefficients

		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
Model		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	12.517	6.351		1.971	.084		
	RUSSIA	-.860	.938	-.308	-.917	.386	1.000	1.000

a. Dependent Variable: FDICUBA

Results for Category II (Developing Countries) Using the Independent Variable for the Measure of Gross Capital Formation

The multiple regression analysis, with FDI to Cuba as the dependent variable and Gross Capital Formation for the developing countries, China, India and the Russian Federation as the independent variables, did not revealed a significant relationship. From the ANOVA, the F-value = 2.673 with a p-value = 0.141, implying that the model was not significant (Table 67). This was also seen from the multiple regression analysis where the beta coefficient was not significant, implying the null hypothesis was not rejected for these countries (Table 68). Therefore, there was not a significant correlation between the FDI to Cuba and the Gross Capital Formation for these developing countries, China, India and the Russian Federation. This result was surprising as the Russian Federation and China had been providing significant FDI to Cuba. From the collinearity diagnostics, the variance inflation factor (VIF) was 5.581, 6.668 and 1.638 for China, India and the Russian Federation, respectively, which implied a major multicollinearity problem. (As stated before a VIF greater than 5 is usually an indication of a multicollinearity problem.) This implies that two of the three independent variables are highly correlated and cannot be utilized for multiple regression analysis. A correlation analysis further reinforced this position through the Spearman's rho for the country of China, showing a significant correlation with the FDI of Cuba. For consistency, simple linear regression was conducted for each of these countries.

Table 67
Regression Analysis of Russian Federation, China, India & FDI Cuba

ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	643.022	3	214.341	2.673	.141
	Residual	481.078	6	80.180		
	Total	1124.100	9			

a.Predictors: (Constant), RUSSIA, CHINA, INDIA
b.Dependent Variable: FDICUBA

Table 68
Regression Coefficient Analysis of Russian Federation, China, India & FDI Cuba

Coefficients

		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
Model		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	.596	50.617		.012	.991		
	CHINA	-.258	1.908	-.085	-.135	.897	.179	5.581
	INDIA	1.976	1.316	1.036	1.502	.184	.150	6.668
	RUSSIA	-2.015	1.259	-.547	-1.601	.161	.611	1.638

a. Dependent Variable: FDICUBA

A simple linear regression analysis between FDI Cuba and the Gross Capital Formation for China did not revealed a significant relationship (β = 1.74, p-value = 0.082) (Tables 69 and 70). Therefore, there was not a significant correlation between the FDI to Cuba and the Gross Capital Formation for China, implying the null hypothesis was not rejected for this country. This result was relevant since Gross Capital Formation in China did not correlate with FDI to Cuba. However, China is currently conducting FDI investment in Cuba since Cuba's adoption of the China model for economic reforms (Mesa-Lago, 2005).

Table 69
Regression Analysis of China & FDI Cuba

ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
	Regression	371.584	1	371.584	3.950	.082
	Residual	752.516	8	94.064		
	Total	1124.100	9			

a.Predictors: (Constant), CHINA
b.Dependent Variable: FDICUBA

Table 70
Regression Coefficient Analysis of China & FDI Cuba

Coefficients

		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
Model		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	-61.679	35.041		-1.760	.116		
	CHINA	1.739	.875	.575	1.988	.082	1.000	1.000

a. Dependent Variable: FDICUBA

A simple linear regression analysis between FDI Cuba and the Gross Capital Formation for India revealed a marginally significant result (β = 1.19, p-value = 0.054) (Tables 71 and 72). Therefore, there was a marginally positive correlation between the FDI to Cuba and the Gross Capital Formation for India, implying the null hypothesis was marginally rejected. This result was relevant since India is currently conducting FDI investment in Cuba, mostly in tourism, manufacturing of vehicles and pharmaceutical products (Cuba trade, 2008).

Table 71
Regression Analysis of India & FDI Cuba

ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	436.741	1	436.741	5.083	.054
	Residual	687.359	8	85.920		
	Total	1124.100	9			

a.Predictors: (Constant), INDIA
b.Dependent Variable: FDICUBA

Table 72
Regression Coefficient Analysis of India & FDI Cuba

Coefficients

		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
Model		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	-26.902	15.625		-1.722	.123		
	INDIA	1.189	.527	.623	2.255	.054	1.000	1.000

a. Dependent Variable: FDICUBA

A simple linear regression analysis between FDI Cuba and the Gross Capital Formation for the Russian Federation did not revealed a significant relationship (β = 0.165, p-value = 0.902)(Tables 73 and 74). Therefore, there was not a significant correlation between the FDI to Cuba and the Gross Capital Formation for the Russian Federation, implying the null hypothesis was not rejected for this country. This was a surprising result since Cuba and the

Russian Federation has been involved in FDI investments.

Table 73
Regression Analysis of Russian Federation & FDI Cuba

ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	2.264	1	2.264	.016	.902
	Residual	1121.836	8	140.229		
	Total	1124.100	9			

a. Predictors: (Constant), RUSSIA
b. Dependent Variable: FDICUBA

Table 74
Regression Coefficient Analysis of Russian Federation & FDI Cuba

Coefficients

		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
Model		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	4.411	26.151		.169	.870		
	RUSSIA	.165	1.301	.045	.127	.902	1.000	1.000

a Dependent Variable: FDICUBA

Results for Category III (Least Developed Countries) Using the Independent Variable, Gross Fixed Capital Formation

For the third category of countries, multiple regression analysis was done for FDI to Cuba as the dependent variable and Gross Fixed Capital Formation for the least Developing countries Jamaica, Haiti, Peru, Madagascar and Nepal as the independent variables. This analysis did not revealed any significant relationships with FDI to Cuba (F value = 0.550 with a p-value = 0.737) (Table 75). Again, the beta coefficients were not significant, implying the null hypothesis was not rejected for these countries (Table 76). Therefore, there was not a significant correlation between the FDI to Cuba and the Gross Fixed Capital Formation for the least developing countries of Jamaica, Haiti, Peru, Madagascar and Nepal. Surprisingly, the Gross Fixed Capital Formation for these countries was not highly correlated with a VIF (variance inflation factor) of 1.266, 1.612, 1.198, 3.453 and 3.924 for Jamaica, Haiti, Peru, Madagascar and Nepal, respectively. (VIF greater than 5 is usually an indication of a multicollinearity problem.) Simple linear regression was conducted for each of these countries.

Table 75
Regression Analysis of Jamaica, Haiti, Peru, Madagascar and Nepal, & FDI Cuba

ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
	Regression	458.167	5	91.633	.550	.737
	Residual	665.933	4	166.483		
	Total	1124.100	9			

a. Predictors: (Constant), NEPAL, JAMAICA, PERU, HAITI, MADAGASC
b. Dependent Variable: FDICUBA

Table 76
Regression Coefficient Analysis Jamaica, Haiti, Peru, Madagascar and Nepal, & FDI Cuba

Coefficients

		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
Model		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	8.334	19.267		.433	.688		
	JAMAICA	-.225	1.730	-.056	-.130	.903	.790	1.266
	HAITI	2.016	2.525	.390	.799	.469	.620	1.612
	PERU	.838	1.392	.253	.602	.580	.834	1.198
	MADAGASC	.365	1.305	.200	.280	.793	.290	3.453
	NEPAL	-1.820	5.206	-.266	-.350	.744	.255	3.924

a. Dependent Variable: FDICUBA

A simple linear regression analysis between FDI Cuba and Gross Fixed Capital Formation for Jamaica did not revealed a significant relationship (β = -1.27, p-value = 0.372) (Tables 77 and 78). Therefore, there was not a significant correlation between the FDI to Cuba and the Gross Fixed Capital Formation for

Jamaica, implying the null hypothesis was not rejected for this country. This result was relevant since Gross Fixed Capital Formation in Jamaica did not correlate with the FDI to Cuba.

Table 77
Regression Analysis of Jamaica & FDI Cuba

ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	113.020	1	113.020	.894	.372
	Residual	1011.080	8	126.385		
	Total	1124.100	9			

a. Predictors: (Constant), JAMAICA
b. Dependent Variable: FDICUBA

Table 78
Regression Coefficient Analysis of Jamaica & FDI Cuba

Coefficients

		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
Model		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	8.460	3.645		2.321	.049		
	JAMAICA	-1.267	1.340	-.317	-.946	.372	1.000	1.000

a. Dependent Variable: FDICUBA

A simple linear regression analysis between FDI Cuba and the Gross Fixed Capital Formation for Haiti did not revealed a significant relationship (β = 2.81, p-value = 0.105) (Tables 79 and 80). Therefore, there was not a significant correlation between the FDI to

Cuba and the Gross Fixed Capital Formation for Haiti, implying the null hypothesis was not rejected for this country.

Table 79
Regression Analysis of Haiti & FDI Cuba

ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	331.297	1	331.297	3.343	.105
	Residual	792.803	8	99.100		
	Total	1124.100	9			

a. Predictors: (Constant), HAITI
b. Dependent Variable: FDICUBA

Table 80
Regression Coefficient Analysis of Haiti & FDI Cuba

Coefficients

		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
Model		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	5.736	3.326		1.725	.123		
	HAITI	2.805	1.534	.543	1.828	.105	1.000	1.000

a. Dependent Variable: FDICUBA

A simple linear regression analysis between FDI Cuba and the Gross Fixed Capital Formation for Peru did not revealed a significant relationship (β = 1.25, p-value = 0.283) (Tables 81 and 82). Therefore, there was not a significant correlation between the FDI to

Cuba and the Gross Fixed Capital Formation for Peru, implying the null hypothesis was not rejected for this country.

Table 81
Regression Analysis of Peru & FDI Cuba

ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	159.970	1	159.970	1.327	.283
	Residual	964.130	8	120.516		
	Total	1124.100	9			

a.Predictors: (Constant), PERU
b.Dependent Variable: FDICUBA

Table 82
Regression Coefficient Analysis of Peru & FDI Cuba

Coefficients

		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
Model		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	2.588	5.634		.459	.658		
	PERU	1.247	1.082	.377	1.152	.283	1.000	1.000

a. Dependent Variable: FDICUBA

A simple linear regression analysis between FDI Cuba and Gross Fixed Capital Formation for Madagascar did not revealed a significant relationship (β = 0.0278, p-value = 0.967) (Tables 83 and 84).

Therefore, there was not a significant correlation between the FDI to Cuba and the Gross Fixed Capital Formation for Madagascar, implying the null hypothesis was not rejected for this country.

Table 83
Regression Analysis of Madagascar & FDI Cuba

ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	.262	1	.262	.002	.967
	Residual	1123.838	8	140.480		
	Total	1124.100	9			

a.Predictors: (Constant), MADAGASC
b.Dependent Variable: FDICUBA

Table 84
Regression Coefficient Analysis of Madagascar & FDI Cuba

Coefficients

		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
Model		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	7.594	4.478		1.696	.128		
	MADAGASC	2.784E-02	.645	.015	.043	.967	1.000	1.000

a. Dependent Variable: FDICUBA

A simple linear regression analysis between FDI Cuba and the Gross Fixed Capital Formation for Nepal did not revealed a significant relationship ($\beta = -2.03$, p-value = 0.404) (Tables 85 and 86). Therefore, there was not a significant correlation between the FDI to Cuba and the Gross Fixed Capital Formation for Nepal, implying the null hypothesis was not rejected for this country.

Table 85
Regression Analysis of Nepal & FDI Cuba

ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	99.220	1	99.220	.774	.404
	Residual	1024.880	8	128.110		
	Total	1124.100	9			

a.Predictors: (Constant), NEPAL
b.Dependent Variable: FDICUBA

Table 86
Regression Coefficient Analysis of Nepal & FDI Cuba

Coefficients

		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
Model		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	15.207	9.251		1.644	.139		
	NEPAL	-2.029	2.306	-.297	-.880	.404	1.000	1.000

a Dependent Variable: FDICUBA

Results for Category III (Least Developed Countries) Using the Independent Variable, Gross Capital Formation

For the third category of countries, multiple regression analysis was done for FDI to Cuba as the

dependent variable and Gross Capital Formation for the least Developing countries, Jamaica, Haiti, Peru, Madagascar, and Nepal as the independent variables. This analysis did not revealed any significant relationships with FDI to Cuba (F value = 0.740 with a p-value = 0.632) (Table 87). Again, the beta coefficients were not significant, implying the null hypothesis was not rejected for these countries (Table 88). Therefore, there was not a significant correlation between the FDI to Cuba and the Gross Capital Formation for the least developing countries of Jamaica, Haiti, Peru, Madagascar, and Nepal. Like above, the Gross Capital Formation for four out of the five countries were not highly correlated with VIFs (variance inflation factor) of 4.259, 1.664, 1.981, 6.521 and 3.737 for Jamaica, Haiti, Peru, Madagascar and Nepal, respectively. (VIF greater than 5 is usually an indication of a multicollinearity problem.) Simple linear regression was conducted for each of these countries.

Table 87
Regression Analysis of Nepal, Haiti, Madagascar, Jamaica, Peru & FDI Cuba

ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	540.200	5	108.040	.740	.632
	Residual	583.900	4	145.975		
	Total	1124.100	9			

a.Predictors: (Constant), NEPAL, PERU, HAITI, JAMAICA, MADAGASC
b.Dependent Variable: FDICUBA

Table 88
Regression Coefficient Analysis of Nepal, Haiti, Madagascar, Jamaica, Peru & FDI Cuba

Coefficients

		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
Model		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	-83.599	136.545		-.612	.573		
	JAMAICA	.437	2.714	.120	.161	.880	.235	4.259
	HAITI	.301	2.827	.050	.107	.920	.601	1.664
	PERU	2.124	2.799	.385	.759	.490	.505	1.981
	MADAGASC	.920	2.184	.388	.421	.695	.153	6.521
	NEPAL	.419	2.686	.109	.156	.884	.268	3.737

a. Dependent Variable: FDICUBA

A simple linear regression analysis between FDI Cuba and the Gross Capital Formation for Jamaica did not revealed a significant relationship (β = 1.31, p-value = 0.307) (Tables 89 and 90). Therefore, there was not a significant correlation between the FDI to Cuba and the Gross Capital Formation for Jamaica, implying the null hypothesis was not rejected for this country. This result was relevant since Gross Capital Formation in Jamaica did not correlate with FDI to Cuba; even though, Jamaica conducts FDI investment in Cuba (UNCTAD, 2008).

Table 89
Regression Analysis of Jamaica & FDI Cuba

ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	145.458	1	145.458	1.189	.307
	Residual	978.642	8	122.330		
	Total	1124.100	9			

a. Predictors: (Constant), JAMAICA
b. Dependent Variable: FDICUBA

Table 90
Regression Coefficient Analysis of Jamaica & FDI Cuba

Coefficients

		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
Model		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	-31.159	35.807		-.870	.410		
	JAMAICA	1.313	1.204	.360	1.090	.307	1.000	1.000

a. Dependent Variable: FDICUBA

A simple linear regression analysis between FDI Cuba and the Gross Capital Formation for Haiti did not revealed a significant relationship (β = 1.41, p-value

= 0.520) (Tables 91 and 92). Therefore, there was not a significant correlation between the FDI to Cuba and the Gross Capital Formation for Haiti, implying the null hypothesis was not rejected for this country.

Table 91
Regression Analysis of Haiti & FDI Cuba

ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	60.258	1	60.258	.453	.520
	Residual	1063.842	8	132.980		
	Total	1124.100	9			

a.Predictors: (Constant), HAITI
b.Dependent Variable: FDICUBA

Table 92
Regression Coefficient Analysis of Haiti & FDI Cuba

Coefficients

		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
Model		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	-29.750	55.753		-.534	.608		
	HAITI	1.408	2.091	.232	.673	.520	1.000	1.000

a. Dependent Variable: FDICUBA

A simple linear regression analysis between FDI Cuba and the Gross Capital Formation for Peru did not revealed a significant relationship (β = 1.96, p-value = 0.314) (Tables 93 and 94). Therefore, there was not a significant correlation between the FDI to Cuba and the Gross Capital Formation for Peru, implying the null hypothesis was not rejected for this country.

Table 93
Regression Analysis of Peru & FDI Cuba

ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	141.661	1	141.661	1.154	.314
	Residual	982.439	8	122.805		
	Total	1124.100	9			

a. Predictors: (Constant), PERU
b. Dependent Variable: FDICUBA

Table 94
Regression Coefficient Analysis of Peru & FDI Cuba

Coefficients

		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
Model		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	-31.683	36.835		-.860	.415		
	PERU	1.959	1.824	.355	1.074	.314	1.000	1.000

a. Dependent Variable: FDICUBA

A simple linear regression analysis between FDI Cuba and the Gross Capital Formation for Madagascar did not revealed a significant relationship (β = 1.37, p-value = 0.082) (Tables 95 and 96). Therefore, there was not a significant correlation between the FDI to

Cuba and the Gross Capital Formation for Madagascar, implying the null hypothesis was not rejected for this country.

Table 95
Regression Analysis of Madagascar & FDI Cuba

ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	372.298	1	372.298	3.962	.082
	Residual	751.802	8	93.975		
	Total	1124.100	9			

a. Predictors: (Constant), MADAGASC
b. Dependent Variable: FDICUBA

Table 96
Regression Coefficient Analysis of Madagascar & FDI Cuba

Coefficients

		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
Model		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	-18.522	13.526		-1.369	.208		
	MADAGASC	1.366	.686	.575	1.990	.082	1.000	1.000

a. Dependent Variable: FDICUBA

A simple linear regression analysis between FDI Cuba and the Gross Capital Formation for Nepal did not revealed a significant, but marginal relationship (β = 2.35, p-value = 0.062) (Tables 97 and 98). Therefore, there was a significant positive marginal correlation between the FDI to Cuba and the Gross Capital Formation for Nepal, implying the null hypothesis was rejected for this country.

Table 97
Regression Analysis of Nepal & FDI Cuba

ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	416.280	1	416.280	4.705	.062
	Residual	707.820	8	88.478		
	Total	1124.100	9			

a. Predictors: (Constant), NEPAL
b. Dependent Variable: FDICUBA

Table 98
Regression Coefficient Analysis of Nepal & FDI Cuba

Coefficients

		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
Model		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	-48.148	25.919		-1.858	.100		
	NEPAL	2.347	1.082	.609	2.169	.062	1.000	1.000

a. Dependent Variable: FDICUBA

Summary of Results for Hypothesis 2

Category I (Advanced Countries)

The United States, Japan, France, Germany and Spain had an insignificant relationship between FDI inflow to Cuba and Gross Fixed Capital Formation.

The United States, Japan, France, Germany and Spain had an insignificant relationship between FDI inflow to Cuba and Gross Capital Formation.

Category II (Developing Countries)

Significant positive correlation existed between FDI inflow to Cuba and Gross Fixed Capital Formation for India. Insignificant relationships were found for China and the Russian Federation.

Insignificant relationship existed between FDI inflow to Cuba and Gross Capital Formation for China and the Russian Federation. A marginal positive correlation was found between the FDI inflow to Cuba and the Gross Capital Formation in India.

Category III (Least Developing Countries)

Insignificant relationship existed between FDI inflow to Cuba and Gross Fixed Capital Formation for Jamaica, Haiti, Peru, Madagascar and Nepal.

Insignificant relationship existed between FDI inflow to Cuba and Gross Capital Formation for Jamaica, Haiti, Peru, Madagascar, while Nepal showed a positive marginal result.

Results for Hypothesis 3

FDI to Cuba was the dependent variable. For the advanced countries, the independent variables were the Level of Technology for the United States, Japan, Germany, France and Spain (Sawalha, 2007). The independent variables for the developing countries were Level of Technology for China, India and the Russian Federation (Sawalha, 2007). The independent variables for the Least Developed Countries (LCD’s) were Level of Technology for Jamaica, Haiti, Peru, Madagascar and Nepal. The Republic of Cuba’s Level of Technology was not included in the model as there were only three data points. The Level of Technology hypothesis included two variables, High Technology Exports (percentage of manufactured Exports) and Industry value added (percentage of GDP).

The third hypothesis to be tested is:

Hypothesis H_{03}: The level of contribution of FDI inflow to Cuba is not significantly related to the Level of Technology for the three groups of countries.

Hypothesis H_{A3}: The level of contribution of FDI inflow to Cuba is significantly related to the Level of Technology for the three groups of countries.

The multiple regression models to test Hypothesis 3 are listed below.

Category I (Advanced Countries)

$$FDI_{CUBA} = \alpha_O + \alpha_1 LEVELTECH_{US} + \alpha_2 LEVELTECH_{Japan} + \alpha_3 LEVELTECH_{Germany} + \alpha_4 LEVELTECH_{France} + \alpha_5 LEVELTECH_{Spain} + \varepsilon_1$$

Categories II (Developing Countries)

$$FDI_{CUBA} = \beta_O + \beta_1 LEVELTECH_{China} + \beta_2 LEVELTECH_{India} + \beta_3 LEVELTECH_{Russian\ Federation} + \varepsilon_2$$

Categories III (Least Developed Countries)

$$FDI_{CUBA} = \delta o + \delta_1 LEVELTECH_{Jamaica} + \delta_2 LEVELTECH_{Haiti} + \delta_3 LEVELTECH_{Peru} + \delta_4 LEVELTECH_{Madagascar} + \delta_5 LEVELTECH_{Nepal} + \varepsilon_3$$

The results were present for both independent variables high technology exports and industry value added, for each of the three categories of countries.

Results for High Technology Exports as Measured by Percentage of Manufactured Exports

Pearson Correlation Analysis

A Pearson correlation analysis among the advanced, developing and least developed of the 13 non oil-producing countries revealed a significant negative correlation between High Technology Exports (percentage of Manufactured Exports) for the country of the Russian Federation with the FDI of Cuba (Table 99).

Table 99
Pearson Correlation analysis for FDI Cuba and High Technology Exports for all the Countries in the Study

FDI Cuba Pearson Correlation Sig. (2-Tailed) N	USA	Japan	Germany	France	Spain	China	India	Russian Federation
	-0.414 0.235 10	-0.614 0.059 10	-0.402 0.250 10	-0.273 0.445 10	-0.601 0.066 10	0.307 0.389 10	-0.203 0.574 10	-0.820** 0.004 10
Jamaica	Haiti	Peru	Madagascar	Nepal				
0.292 0.412 10	No Data	-0.316 0.374 10	0.236 0.512 10	No Data				

Results for Category I (Advanced Countries) Using the Independent Variable, High Technology Exports

The multiple regression analysis, with FDI of Cuba as the dependent variable and High Technology Exports for the advanced countries, the United States, Japan, Germany, France and Spain as the independent variables, did not revealed any significant relationships. From the ANOVA, the F-value = 1.498 with a p-value = 0.358 implying that the model was not significant (Table 100). This was also seen from the multiple regression analysis where the beta coefficients were not significant, implying the null hypothesis was not rejected for these countries (Table 101). Therefore, there was not a significant correlation between the FDI of Cuba and High Technology Exports for these advanced countries, the United States, Japan, Germany, France and Spain. This result is surprising as Germany, France and Spain had been providing significant FDI to Cuba. From the collinearity diagnostics, the variance inflation factor (VIF) was 9.365, 12.080, 3.260, 4.088 and 12.033 for the United States, Japan, Germany, France and Spain, respectively, implying a major multicollinearity problem. (A VIF greater than 5 is usually an indication of a multicollinearity problem.) This implies that three of the five independent variables are highly correlated and cannot be utilized for multiple regression analysis. A correlation analysis further reinforced this position. For consistency, simple linear regression was conducted for each of these countries.

Table 100

Regression Analysis of the United States, Japan, Germany, France, Spain & FDI Cuba

ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
	Regression	732.717	5	146.543	1.498	.358
	Residual	391.383	4	97.846		
	Total	1124.100	9			

a. Predictors: (Constant), SPAIN, GERMANY, FRANCE, USA, JAPAN
b. Dependent Variable: FDICUBA

Table 101

Regression Coefficient of the United States, Japan, Germany, France, Spain & FDI Cuba

Coefficients

		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
Model		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	-3.534	122.409		-.029	.978		
	USA	3.155	5.518	.516	.572	.598	.107	9.365
	JAPAN	-7.254	4.406	-1.688	-1.646	.175	.083	12.080
	GERMANY	-1.612	4.163	-.206	-.387	.718	.307	3.260
	FRANCE	5.075	4.008	.755	1.266	.274	.245	4.088
	SPAIN	.948	12.116	.080	.078	.941	.083	12.003

a. Dependent Variable: FDICUBA

A simple linear regression analysis between FDI Cuba and High Technology Exports for the United States did not revealed a significant relationship (β = -2.53, p-value = 0.235). Therefore, there was not a significant correlation between the FDI to Cuba and High Technology Exports for the United States, implying the null hypothesis was not rejected for this country. The fact that there was no significant relationship was reinforcing the existing trade embargo (Mesa-Lago, 2001) (Tables 102 and 103).

Table 102
Regression Analysis of the United States & FDI Cuba

ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	192.399	1	192.399	1.652	.235
	Residual	931.701	8	116.463		
	Total	1124.100	9			

a. Predictors: (Constant),USA
b. Dependent Variable: FDICUBA

Table 103
Regression Coefficient Analysis of the United States & FDI Cuba

Coefficients

		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
Model		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	86.834	61.662		1.408	.197		
	USA	-2.528	1.967	-.414	-1.285	.235	1.000	1.000

a. Dependent Variable: FDICUBA

A simple linear regression analysis between FDI Cuba and High Technology Exports for Japan revealed a marginally significant, negative relationship (β = -

2.64, p-value = 0.059), implying the null hypothesis was rejected for this country. (Tables 104 and 105).

Table 104
Regression Analysis of Japan & FDI Cuba

ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	424.047	1	424.047	4.846	.059
	Residual	700.053	8	87.507		
	Total	1124.100	9			

a. Predictors: (Constant), JAPAN
b. Dependent Variable: FDICUBA

Table 105
Regression Coefficient Analysis of Japan & FDI Cuba

Coefficients

		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
Model		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	71.294	29.040		2.455	.040		
	JAPAN	-2.639	1.199	-.614	-2.201	.059	1.000	1.000

a Dependent Variable: FDICUBA

A simple linear regression analysis between FDI Cuba and High Technology Exports for Germany did not revealed a significant relationship (β = -3.14, p-value = 0.250) (Tables 106 and 107). Therefore, there was not a significant correlation between the FDI to Cuba and High Technology Exports for Germany, implying the null hypothesis was not rejected for this country. This result was relevant since High Technology Exports in Germany did not correlate with FDI to Cuba; even though, Germany is known to invest in Cuba.

Table 106
Regression Analysis of Germany & FDI Cuba

ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	181.567	1	181.567	1.541	.250
	Residual	942.533	8	117.817		
	Total	1124.100	9			

a.Predictors: (Constant), GERMANY
b.Dependent Variable: FDICUBA

Table 107
Regression Coefficient Analysis of Germany & FDI Cuba

Coefficients

		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
Model		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	59.217	41.641		1.422	.193		
	GERMANY	-3.141	2.530	-.402	-1.241	.250	1.000	1.000

a Dependent Variable: FDICUBA

A simple linear regression analysis between FDI Cuba and High Technology Exports for France did not revealed a significant relationship (β = -1.84, p-value = 0.445) (Tables 108 and 109). Therefore, there was not a significant correlation between the FDI to Cuba and the High Technology Exports for France, implying the null hypothesis was not rejected for this country. This result was relevant since High Technology Exports in France did not correlate with FDI to Cuba; even though, France is known to invest in Cuba.

Table 108
Regression Analysis of France & FDI Cuba

ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	83.875	1	83.875	.645	.445
	Residual	1040.225	8	130.028		
	Total	1124.100	9			

a. Predictors: (Constant), FRANCE
b. Dependent Variable: FDICUBA

Table 109
Regression Coefficient Analysis of France & FDI Cuba

Coefficients

		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
Model		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	46.426	48.352		.960	.365		
	FRANCE	-1.835	2.285	-.273	-.803	.445	1.000	1.000

a. Dependent Variable: FDICUBA

A simple linear regression analysis between FDI Cuba and High Technology Exports for Spain did revealed a marginally significant negative relationship (β = -7.13, p-value = 0.066)(Tables 110 and 111), implying the null hypothesis was rejected for this country. As above, a higher level of significant was expected as Spain does provide large amount of FDI investments in Cuba (Chloe, 2008). Therefore, the relationship being marginal concludes as High Technology Exports in Spain increases then FDI inflow to Cuba would also increase (McPherson & Trumbull, 2007).

Table 110
Regression Analysis of Spain & FDI Cuba

ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	406.125	1	406.125	4.525	.066
	Residual	717.975	8	89.747		
	Total	1124.100	9			

a. Predictors: (Constant), SPAIN
b. Dependent Variable: FDICUBA

Table 111
Regression Coefficient Analysis of Spain & FDI Cuba

Coefficients

		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
Model		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	57.575	23.636		2.436	.041		
	SPAIN	-7.125	3.349	-.601	-2.127	.066	1.000	1.000

a.Dependent Variable: FDICUBA

Results for Industry, Value Added

Pearson Correlation Analysis

A Pearson correlation analysis among the advanced, developing and least developed countries revealed a significant correlation of Industry, value added with three countries, Spain, China and Peru with the FDI of Cuba (Table 112).

Table 112
Pearson Correlation analysis for FDI Cuba and Industry, Value Added for all the Countries in the Study

FDI Cuba Pearson Correlation Sig. (2-Tailed) N	USA	Japan	Germany	France	Spain	China	India	Russian Federation
	-0.298 0.404 10	-0.294 0.410 10	0.054 0.882 10	-0.288 0.420 10	0.739* 0.015 10	0.712* 0.021 10	0.610 0.061 10	0.536 0.110 10
Jamaica	Haiti	Peru	Madagascar	Nepal				
-0.256 0.475 10	-0.277 0.438 10	0.688* 0.028 10	0.500 0.141 10	-0.302 0.397 10				

Results for Category I (Advanced Countries) Using the Independent Variable for the Measure of Industry Value Added

The multiple regression analysis, with FDI to Cuba as the dependent variable and Industry, value added for the advanced countries, the United States, Japan, Germany, France and Spain as the independent variables, did not revealed any significant relationships. From the ANOVA, the F-value = 2.411 with a p-value = 0.207 implying that the model was not significant (Table 113). This was also seen from the multiple regression analysis where the beta coefficients were not significant except for Spain (Table 114). Therefore, there was not a significant correlation between the FDI to Cuba and the Industry, value for the United States, Japan, Germany, France and Spain, implying the null hypothesis was not rejected for these countries. This result is surprising as Germany, France and Spain had been providing significant FDI to Cuba. From the collinearity diagnostics, the variance inflation factor (VIF) was 1501.068, 1530.216, 6.188, 5.078 and 1.908 for the United States, Japan, Germany, France and Spain, respectively, implying a major multicollinearity problem. (A VIF greater than 5 is usually an indication of a multicollinearity problem.)

This implies that four of the five independent variables are highly correlated and cannot be utilized for multiple regression analysis. A Pearson correlation analysis further reinforced this position for the country of Spain showing a significant correlation with the FDI of Cuba. For consistency, simple linear regression was conducted for each of these countries.

Table 113
Regression Analysis of the United States, Japan, Germany, France, Spain & FDI Cuba

ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	844.040	5	168.808	2.411	.207
	Residual	280.060	4	70.015		
	Total	1124.100	9			

a. Predictors: (Constant), SPAIN, GERMANY, USA, FRANCE, JAPAN
b. Dependent Variable: FDICUBA

Table 114
Regression Coefficient of the United States, Japan, Germany, France, Spain & FDI Cuba

Coefficients

		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
Model		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	-967.139	335.421		-2.883	.045		
	USA	-16.194	14.760	-10.608	-1.097	.334	.001	1501.068
	JAPAN	12.522	11.041	11.072	1.134	.320	.001	1530.216
	GERMANY	15.588	9.923	.975	1.571	.191	.162	6.188
	FRANCE	-5.356	6.840	-.440	-.783	.477	.197	5.078
	SPAIN	20.970	7.975	.906	2.629	.058	.524	1.908

a. Dependent Variable: FDICUBA

A simple linear regression analysis between FDI Cuba and Industry, value added for the United States did not revealed a significant relationship (β = -0.454, p-value = 0.404)(Tables 115 and 116). Therefore, there was not a significant correlation between the FDI to Cuba and the Industry, value added for the United States, implying the null hypothesis was not rejected for this country. The fact that there was no significant relationship was reinforcing the existing trade embargo (Mesa-Lago, 2001).

Table 115
Regression Analysis of United States & FDI Cuba

ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	99.603	1	99.603	.778	.404
	Residual	1024.497	8	128.062		
	Total	1124.100	9			

a. Predictors: (Constant), USA
b. Dependent Variable: FDICUBA

Table 116
Regression Coefficient Analysis of United States & FDI Cuba

Coefficients

		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
Model		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	17.061	11.201		1.523	.166		
	USA	-.454	.515	-.298	-.882	.404	1.000	1.000

a Dependent Variable: FDICUBA

A simple linear regression analysis between FDI Cuba and Industry, value added for Japan did not revealed a significant relationship (β = -0.333, p-value = 0.410) (Tables 117 and 118). Therefore, there was not a significant correlation between the FDI to Cuba and the Industry, value added for Japan, implying the null hypothesis was not rejected for this country; even though, Japan is a trading partner with Cuba (McPherson & Trumbull, 2007).

Table 117
Regression Analysis of Japan & FDI Cuba

ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	97.212	1	97.212	.757	.410
	Residual	1026.888	8	128.361		
	Total	1124.100	9			

a. Predictors: (Constant), JAPAN
b. Dependent Variable: FDICUBA

Table 118
Regression Coefficient Analysis of Japan & FDI Cuba

Coefficients

		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
Model		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	16.979	11.248		1.509	.170		
	JAPAN	-.333	.382	-.294	-.870	.410	1.000	1.000

a Dependent Variable: FDICUBA

A simple linear regression analysis between FDI Cuba and Industry, value added for Germany did not revealed a significant relationship (β = 0.864, p-value = 0.882) (Tables 119 and 120). Therefore, there was not a significant correlation between the FDI to Cuba and the Industry, value added for Germany, implying the null hypothesis was not rejected for this country. This result was relevant since Industry, value added in Germany did not correlate with FDI to Cuba; even though, Germany is known to invest in Cuba.

Table 119
Regression Analysis of Germany & FDI Cuba

ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
	Regression	3.282	1	3.282	.023	.882
	Residual	1120.818	8	140.102		
	Total	1124.100	9			

a.Predictors: (Constant), GERMANY
b.Dependent Variable: FDICUBA

Table 120
Regression Coefficient Analysis of Germany & FDI Cuba

Coefficients

		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
Model		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	-17.864	167.069		-.107	.917		
	GERMANY	.864	5.643	.054	.153	.882	1.000	1.000

a. Dependent Variable: FDICUBA

A simple linear regression analysis between FDI Cuba and Industry, value added for France did not revealed a significant relationship (β = -3.50, p-value = 0.420) (Tables 121 and 122). Therefore, there was not a significant correlation between the FDI to Cuba and the Industry, value added for France, implying the null hypothesis was not rejected for this country. This result was relevant since Industry, value added in France did not correlate with FDI to Cuba; even though, France is known to invest in Cuba.

Table 121
Regression Analysis of France & FDI Cuba

ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	93.100	1	93.100	.722	.420
	Residual	1031.000	8	128.875		
	Total	1124.100	9			

a.Predictors: (Constant), FRANCE
b.Dependent Variable: FDICUBA

Table 122
Regression Coefficient Analysis of France & FDI Cuba

Coefficients

		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
Model		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	84.000	89.842		.935	.377		
	FRANCE	-3.500	4.118	-.288	-.850	.420	1.000	1.000

a Dependent Variable: FDICUBA

A simple linear regression analysis between FDI Cuba and Industry, value added for Spain revealed a significant positive relationship (β = 17.10, p-value = 0.015) (Tables 123 and 124). Therefore, there was a significant correlation between the FDI to Cuba and the Industry, value added for Spain, implying the null hypothesis was rejected for this country. This was a reasonable result since Spain is one of Cuba's largest partners for FDI investment (Chloe, 2008). Therefore, the relationship being significant positive implied that as the Industry, value added in Spain increased then FDI to Cuba would also increased.

Table 123
Regression Analysis of Spain & FDI Cuba

ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	613.719	1	613.719	9.620	.015
	Residual	510.381	8	63.798		
	Total	1124.100	9			

a. Predictors: (Constant), SPAIN
b. Dependent Variable: FDICUBA

Table 124
Regression Coefficient Analysis of Spain & FDI Cuba

Coefficients

		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
Model		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	-493.190	161.515		-3.054	.016		
	SPAIN	17.095	5.512	.739	3.102	.015	1.000	1.000

a Dependent Variable: FDICUBA

Results for Category II (Developing Countries) Using the Independent Variable, High Technology Exports

The multiple regression analysis, with FDI to Cuba as the dependent variable and High Technology Exports for the developing countries, China, India and the Russian Federation as the independent variables, did revealed a significant positive relationship. From the ANOVA, the F-value = 5.632 with a p-value = 0.035 implying that the model was significant (Table 125). This was also seen from the multiple regression analysis where the beta coefficient was significant, implying the null hypothesis was rejected for these countries (Table 126). Therefore, there was significant correlation between the FDI to Cuba and the High Technology Exports for these developing countries, the Russian Federation, China and India. This result was relevant as the Russian Federation, China and recently India within the last several years had been providing significant FDI to Cuba. Cuba has adopted the Chinese model for economic reforms, while the Russian Federation and India are involved in oil exploration in Cuba (Cuban oil, 2008)(Cuba Economy, 2008)(Mesa-Lago, 2005). From the collinearity diagnostics, the variance inflation factor (VIF) was 3.497, 2.878 and 1.674 for China, India and the Russian Federation, respectively, which did not imply a major multicollinearity problem. (As stated before a VIF greater than 5 is usually an indication of a multicollinearity problem.) This implies that the three independent variables were correlated and can be utilized for multiple regression analysis.

Table 125
Regression Analysis of Russian Federation, China, India & FDI Cuba

ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	829.543	3	276.514	5.632	.035
	Residual	294.557	6	49.093		
	Total	1124.100	9			

a. Predictors: (Constant), RUSSIA, INDIA, CHINA
b. Dependent Variable: FDICUBA

Table 126
Regression Coefficient Analysis of Russian Federation, China, India & FDI Cuba

Coefficients

		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
Model		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	69.330	30.440		2.278	.063		
	CHINA	.618	.721	.335	.857	.425	.286	3.497
	INDIA	-11.366	9.397	-.429	-1.210	.272	.347	2.878
	RUSSIA	-1.673	.676	-.669	-2.474	.048	.598	1.674

a Dependent Variable: FDICUBA

Results for Category II (Developing Countries) Using the Independent Variable for the Measure of Industry, Value Added

The multiple regression analysis, with FDI to Cuba as the dependent variable and Industry, value added for the developing countries, China, India and the Russian Federation as the independent variables, did not revealed a significant relationship. From the ANOVA, the F-value = 2.101 with a p-value = 0.202 implying that the model was not significant (Table 127). This was also seen from the multiple regression analysis where the beta coefficient was not significant, implying the null hypothesis was not rejected for these countries (Table 128). Therefore, there was not a significant correlation between the FDI to Cuba and the Industry, value added for the Russian Federation, China and India. This result was surprising as the Russian Federation and China had been providing significant FDI to Cuba. From the collinearity diagnostics, the variance inflation factor (VIF) was 8.011, 5.575 and 2.176 for China, India and the Russian Federation, respectively, which implied a major multicollinearity problem for China and India, but not for the Russian Federation. (As stated before a VIF greater than 5 is usually an indication of a multicollinearity problem.) This implies that two of the three independent variables are highly correlated and cannot be utilized for multiple regression analysis. A correlation analysis further reinforced this position through the Pearson for the country of China, showing a significant correlation with the FDI of Cuba. For consistency, simple linear regression was conducted for each of these countries.

Table 127
Regression Analysis of Russian Federation, China, India & FDI Cuba

ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	575.910	3	191.970	2.101	.202
	Residual	548.190	6	91.365		
	Total	1124.100	9			

a.Predictors: (Constant), RUSSIA, INDIA, CHINA
b.Dependent Variable: FDICUBA

Table 128
Regression Coefficient Analysis of Russian Federation, China, India & FDI Cuba

Coefficients

		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
Model		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	-246.931	138.154		-1.787	.124		
	CHINA	5.284	5.990	.712	.882	.412	.125	8.011
	INDIA	-.379	4.120	-.062	-.092	.930	.179	5.575
	RUSSIA	.509	2.646	.081	.192	.854	.460	2.176

a. Dependent Variable: FDICUBA

A simple linear regression analysis between FDI Cuba and the Industry, value added for China revealed a significant positive relationship (β = 5.28, p-value = 0.021) (Tables 129 and 130). Therefore, there was a significant positive correlation between the FDI to Cuba and the Industry, value added for China, implying the null hypothesis was rejected for this country. This may be a reasonable result, since Cuba's involvement in adopting the China model and developing FDI investment with China (Mesa-Lago, 2005). Also, Cuba's main source of credit is China who provided export finance to Cuba in the amount of 1.8 billion dollars in 2006 (Chloe, 2008). The relationship being significant positive concludes, as Industry value added in China increased then FDI to Cuba would also increase.

Table 129
Regression Analysis of China & FDI Cuba

ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	569.649	1	569.649	8.219	.021
	Residual	554.451	8	69.306		
	Total	1124.100	9			

a. Predictors: (Constant), CHINA
b. Dependent Variable: FDICUBA

Table 130
Regression Coefficient Analysis of China & FDI Cuba

Coefficients

		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
Model		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	-238.549	85.933		-2.776	.024		
	CHINA	5.284	1.843	.712	2.867	.021	1.000	1.000

a. Dependent Variable: FDICUBA

A simple linear regression analysis between FDI Cuba and the Industry, value added for India revealed a marginally significant positive relationship (β = 3.73, p-value = 0.061) (Tables 131 and 132). Therefore, there was not a significant correlation between the FDI to Cuba and the Industry value added for India, implying the null hypothesis was rejected for this country. This result was marginally relevant since India is currently conducting FDI investment in Cuba, mostly in tourism, manufacturing of vehicles and pharmaceutical products (Cuba trade, 2008). Therefore, the relationship being marginally positive concludes as Industry, value added in India increased, then FDI to Cuba would also increase.

Table 131
Regression Analysis of India & FDI Cuba

ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
	Regression	418.133	1	418.133	4.738	.061
	Residual	705.967	8	88.246		
	Total	1124.100	9			

a. Predictors: (Constant), INDIA
b. Dependent Variable: FDICUBA

Table 132

Regression Coefficient Analysis of India & FDI Cuba

Coefficients

		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
Model		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	-93.100	46.403		-2.006	.080		
	INDIA	3.733	1.715	.610	2.177	.061	1.000	1.000

a. Dependent Variable: FDICUBA

A simple linear regression analysis between FDI Cuba and the Industry, value added for the Russian Federation did not revealed a significant relationship (β = 3.37, p-value = 0.110) (Tables 133 and 134). Therefore, there was not a significant correlation between the FDI to Cuba and the Industry, value added for the Russian Federation, implying the null hypothesis was not rejected for this country. This was a surprising result since Cuba and the Russian Federation have been involved in FDI investment.

Table 133

Regression Analysis of Russian Federation & FDI Cuba

ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	323.156	1	323.156	3.228	.110
	Residual	800.944	8	100.118		
	Total	1124.100	9			

a. Predictors: (Constant), RUSSIA

b. Dependent Variable: FDICUBA

Table 134
Regression Coefficient Analysis of Russian Federation & FDI Cuba

Coefficients

		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
Model		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	-115.761	68.792		-1.683	.131		
	RUSSIA	3.373	1.878	.536	1.797	.110	1.000	1.000

a Dependent Variable: FDICUBA

Results for Category III (Least Developed Countries) Using the Independent Variable, High Technology Exports

For the third category of countries, multiple regression analysis was done for FDI to Cuba as the dependent variable and High Technology Exports for the least developing countries, Madagascar, Jamaica and Peru as the independent variables. Nepal and Haiti were not tested based on insufficient data extracted from both of these countries. This analysis did not revealed any significant relationships with FDI to Cuba (F value = 0.668 with a p-value = 0.602) (Table 135). Again, the beta coefficients were not significant, implying the null hypothesis was not rejected for these countries (Table 136). Therefore, there was not a significant correlation between the FDI of Cuba and the High Technology Exports for the least developing countries of Madagascar, Jamaica and Peru. Surprisingly, the High Technology Exports for these three countries were not highly correlated with a VIF (variance inflation factor) of 1.104, 1.145 and 1.058 for Jamaica, Peru and Madagascar respectively. (VIF greater than 5 is usually an indication of a multicollinearity problem.) A correlation analysis was also done and reinforced not having a correlation among these variables. For consistency, a simple linear regression was conducted for each of these countries.

Table 135
Regression Analysis of Madagascar, Jamaica, Peru & FDI Cuba

ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	281.443	3	93.814	.668	.602
	Residual	842.657	6	140.443		
	Total	1124.100	9			

a. Predictors: (Constant), MADAGASC, JAMAICA, PERU
b. Dependent Variable: FDICUBA

Table 136
Regression Coefficient Analysis of Madagascar, Jamaica, Peru & FDI Cuba

Coefficients

		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
Model		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	9.706	24.351		.399	.704		
	JAMAICA	8.413	13.126	.238	.641	.545	.906	1.104
	PERU	-5.119	6.047	-.320	-.847	.430	.873	1.145
	MADAGASC	.707	.760	.338	.930	.388	.945	1.058

a. Dependent Variable: FDICUBA

A simple linear regression analysis between FDI Cuba and High Technology Exports for Jamaica did not revealed a significant relationship (β = 10.33, p-value = 0.412) (Tables 137 and 138). Therefore, there was not a significant correlation between the FDI to Cuba and the High Technology Exports for Jamaica, implying the null hypothesis was not rejected for this country.

Table 137
Regression Analysis of Jamaica & FDI Cuba

ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
	Regression	96.100	1	96.100	.748	.412
	Residual	1028.000	8	128.500		
	Total	1124.100	9			

a. Predictors: (Constant), JAMAICA
b. Dependent Variable: FDICUBA

Table 138

Regression Coefficient Analysis of Jamaica & FDI Cuba

Coefficients

		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
Model		B	Std. Error	Beta			Tolerance	VIF
	(Constant)	-3.667	13.624		-.269	.795		
	JAMAICA	10.333	11.949	.292	.865	.412	1.000	1.000

a Dependent Variable: FDICUBA

A simple linear regression analysis between FDI Cuba and High Technology Exports for Peru did not revealed a significant relationship (β = -5.05, p-value = 0.374) (Tables 139 and 140). Therefore, there was not a significant correlation between the FDI to Cuba and the High Technology Exports for Peru, implying the null hypothesis was not rejected for this country.

Table 139

Regression Analysis of Peru & FDI Cuba

ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	112.009	1	112.009	.885	.374
	Residual	1012.091	8	126.511		
	Total	1124.100	9			

a. Predictors: (Constant), PERU

b. Dependent Variable: FDICUBA

Table 140
Regression Coefficient Analysis of Peru & FDI Cuba

Coefficients

		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
Model		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	20.818	14.388		1.447	.186		
	PERU	-5.045	5.362	-.316	-.941	.374	1.000	1.000

a. Dependent Variable: FDICUBA

A simple linear regression analysis between FDI Cuba and High Technology Exports for Madagascar did not revealed a significant relationship (β = 0.493, p-value = 0.512) (Tables 141 and 142). Therefore, there was not a significant correlation between the FDI to Cuba and the High Technology Exports for Madagascar, implying the null hypothesis was not rejected for this country.

Table 141
Regression Analysis of Madagascar & FDI Cuba

ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	62.487	1	62.487	.471	.512
	Residual	1061.613	8	132.702		
	Total	1124.100	9			

a. Predictors: (Constant), MADAGASC
b. Dependent Variable: FDICUBA

Table 142
Regression Coefficient Analysis of Madagascar & FDI Cuba

Coefficients

		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
Model		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	6.270	4.197		1.494	.174		
	MADAGASC	.493	.719	.236	.686	.512	1.000	1.000

a. Dependent Variable: FDICUBA

Results for Category III (Least Developed Countries) Using the Independent Variable, Industry Value Added

For the third category of countries, multiple regression analysis was done for FDI to Cuba as the dependent variable and Industry, value added for the least developing countries, Nepal, Haiti, Madagascar, Jamaica and Peru as the independent variables. This analysis did not revealed any significant relationships with FDI to Cuba (F value = 2.352 with a p-value = 0.214) (Table 143). Again, the beta coefficients were not significant, implying the null hypothesis was not rejected for these countries (Table 144). Therefore, there was not a significant correlation between the FDI of Cuba and the Industry, value added for the least developing countries of Nepal, Haiti, Madagascar, Jamaica and Peru. Like above, the Industry, value added for three of the five countries were highly correlated with VIFs (variance inflation factor) of 3.158, 6.034, 10.039, 1.780 and 5.507 for Nepal, Haiti, Madagascar, Jamaica and Peru respectively. (VIF greater than 5 is usually an indication of a multicollinearity problem.) A correlation analysis was also done and reinforced the high correlation among these variables. An analysis using the Pearson for the country of Peru did show a significant correlation with the FDI of Cuba. For consistency, simple linear regression was conducted for each of these countries.

Table 143
Regression Analysis of Nepal, Haiti, Madagascar, Jamaica, Peru & FDI Cuba

ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	838.812	5	167.762	2.352	.214
	Residual	285.288	4	71.322		
	Total	1124.100	9			

a.Predictors: (Constant), NEPAL, JAMAICA, PERU, HAITI, MADAGASC
b.Dependent Variable: FDICUBA

Table 144
Regression Coefficient Analysis of Nepal, Haiti, Madagascar, Jamaica, Peru & FDI Cuba

Coefficients

		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
Model		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	-199.510	127.313		-1.567	.192		
	JAMAICA	.369	.371	.334	.994	.376	.562	1.780
	HAITI	.866	.503	1.064	1.719	.161	.166	6.034
	PERU	5.532	2.279	1.435	2.427	.072	.182	5.507
	MADAGASC	1.688	8.105	.166	.208	.845	.100	10.039
	NEPAL	-.992	2.373	-.187	-.418	.697	.317	3.158

a. Dependent Variable: FDICUBA

A simple linear regression analysis between FDI Cuba and Industry, value added for Jamaica did not revealed a significant relationship (β = -0.283, p-value = 0.475) (Tables 145 and 146). Therefore, there was not a significant correlation between the FDI to Cuba and the Industry, value added for Jamaica, implying the null hypothesis was not rejected for this country.

Table 145
Regression Analysis of Jamaica & FDI Cuba

ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	73.819	1	73.819	.562	.475
	Residual	1050.281	8	131.285		
	Total	1124.100	9			

a.Predictors: (Constant), JAMAICA
b. Dependent Variable: FDICUBA

Table 146
Regression Coefficient Analysis of Jamaica & FDI Cuba

Coefficients

		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
Model		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	15.820	11.419		1.385	.203		
	JAMAICA	-.283	.377	-.256	-.750	.475	1.000	1.000

a. Dependent Variable: FDICUBA

A simple linear regression analysis between FDI Cuba and Industry, value added for Haiti did not revealed a significant relationship (β = -0.23, p-value = 0.438) (Tables 147 and 148). Therefore, there was not a significant correlation between the FDI to Cuba and the Industry, value added for Haiti, implying the null hypothesis was not rejected for this country.

Table 147
Regression Analysis of Haiti & FDI Cuba

ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	86.339	1	86.339	.666	.438
	Residual	1037.761	8	129.720		
	Total	1124.100	9			

a. Predictors: (Constant), HAITI
b. Dependent Variable: FDICUBA

Table 148
Regression Coefficient Analysis of Haiti & FDI Cuba

Coefficients

		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
Model		B	Std. Error	Beta			Tolerance	VIF
	(Constant)	10.789	5.226		2.065	.073		
	HAITI	-.225	.276	-.277	-.816	.438	1.000	1.000

a. Dependent Variable: FDICUBA

A simple linear regression analysis between FDI Cuba and Industry, value added for Peru revealed a significant positive relationship (β = 2.65, p-value = 0.028) (Tables 149 and 150). Therefore, there was a significant positive correlation between the FDI to Cuba and the Industry, value added for Peru, implying the null hypothesis was rejected for this country. Reasonably to determine that Cuba and Peru have a positive industry and value added relationship; however, there are no indications of FDI investment involving both countries. However, if FDI investment would occur between both countries, an increase of Peru's industry value would benefit FDI inflow to Cuba.

Table 149
Regression Analysis of Peru & FDI Cuba

ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
	Regression	532.280	1	532.280	7.195	.028
	Residual	591.820	8	73.978		
	Total	1124.100	9			

a.Predictors: (Constant), PERU
b.Dependent Variable: FDICUBA

Table 150
Regression Coefficient Analysis of Peru & FDI Cuba

Coefficients

		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
Model		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	-77.741	31.969		-2.432	.041		
	PERU	2.653	.989	.688	2.682	.028	1.000	1.000

a Dependent Variable: FDICUBA

A simple linear regression analysis between FDI Cuba and the Industry, value added for Madagascar did not revealed a significant relationship (β = 5.07, p-value = 0.141) (Tables 151 and 152). Therefore, there was not a significant correlation between the FDI to Cuba and the Industry, value added for Madagascar, implying the null hypothesis was not rejected for this country.

Table 151
Regression Analysis of Madagascar & FDI Cuba

ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	280.559	1	280.559	2.661	.141
	Residual	843.541	8	105.443		
	Total	1124.100	9			

a. Predictors: (Constant), MADAGASC
b. Dependent Variable: FDICUBA

Table 152
Regression Coefficient Analysis of Madagascar & FDI Cuba

Coefficients

		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
Model		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	-68.908	47.077		-1.464	.181		
	MADAGASC	5.073	3.110	.500	1.631	.141	1.000	1.000

a Dependent Variable: FDICUBA

A simple linear regression analysis between FDI Cuba and the Industry, value added for Nepal did not revealed a significant relationship (β = -1.60, p-value = 0.397) (Tables 153 and 154). Therefore, there was not a significant correlation between the FDI to Cuba and the Industry, value added for Nepal, implying the null hypothesis was not rejected for this country.

Table 153

Regression Analysis of Nepal & FDI Cuba

ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	102.400	1	102.400	.802	.397
	Residual	1021.700	8	127.712		
	Total	1124.100	9			

a. Predictors: (Constant), NEPAL

b. Dependent Variable: FDICUBA

Table 154

Regression Coefficient Analysis of Nepal & FDI Cuba

Coefficients

		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
Model		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	38.100	34.138		1.116	.297		
	NEPAL	-1.600	1.787	-.302	-.895	.397	1.000	1.000

a. Dependent Variable: FDICUBA

<u>Summary of Results for Hypothesis 3</u>

Category I (Advanced countries)

The United States, France and Germany had an insignificant relationship between FDI inflow to Cuba and High Technology Exports, while Japan and Spain had a negative marginally significant relationship.

Significant positive relationship existed between FDI inflow to Cuba and the Industry, value added for Spain. Insignificant results were found for the United States, Japan, France and Germany.

Category II (Developing Countries)

Significant positive correlation existed between FDI inflow to Cuba and High Technology Exports for China, India and the Russian Federation.

Significant positive correlation existed between FDI inflow to Cuba and Industry, value added for China. Insignificant results were found for the Russian Federation while India, showed a marginal positive correlation result.

Category III (Least Developing Countries)

Insignificant relationship existed between FDI inflow to Cuba and High Technology Exports for Jamaica, Peru and Madagascar. Nepal and Haiti was not tested based on insufficient data.

Significant positive correlation existed between FDI inflow to Cuba and Industry, value added for Peru. Insignificant results were found for Jamaica, Haiti, Madagascar and Nepal.

Results for Hypothesis 4

FDI to Cuba was the dependent variable. For the advanced countries, the independent variables were Human Capital for the United States, Japan, Germany, France and Spain (Sawalha, 2007). The independent variables for the developing countries were Human Capital for China, India and the Russian Federation (Sawalha, 2007). The independent variables for the Least Developed Countries (LCD's) were Human Capital for Jamaica, Haiti, Peru, Madagascar and Nepal. The Republic of Cuba's Human Capital was not included in the model as there were only three data points. The Human Capital hypothesis included two variables, School Enrollment (measured by tertiary education as a percentage of gross school enrollments) and Total

Unemployment (measured as a percentage of the total labor force).

The fourth hypothesis to be tested is:

Hypothesis H_{04}: The level of contribution of FDI inflow to Cuba is not significantly related to Human Capital for the three groups of countries.

Hypothesis H_{A4}: The level of contribution of FDI inflow to Cuba is significantly related to Human Capital for the three groups of countries.

The multiple regression models to test Hypothesis 4 are listed below.

Category I (Advanced Countries)

$$FDI_{CUBA} = \alpha_O + \alpha_1 HUMANCAP_{US} + \alpha_2 HUMANCAP_{Japan} + \alpha_3 HUMANCAP_{Germany} + \alpha_4 HUMANCAP_{France} + \alpha_5 HUMANCAP_{Spain} + \varepsilon_1$$

Categories II (Developing Countries)

$$FDI_{CUBA} = \beta_O + \beta_1 HUMANCAP_{China} + \beta_2 HUMANCAP_{India} + \beta_3 HUMANCAP_{Russian\ Federation} + \varepsilon_2$$

Categories III (Least Developed Countries)

$$FDI_{CUBA} = \delta o + \delta_1 HUMANCAP_{Jamaica} + \delta_2 HUMANCAP_{Haiti} + \delta_3 HUMANCAP_{Peru} + \delta_4 HUMANCAP_{Madagascar} + \delta_5 HUMANCAP_{Nepal} + \varepsilon_3$$

The results were presented for both independent variables, school enrollment, and total unemployment, for each of the three categories of countries.

Results for the Independent Variable, School Enrollment.

Pearson Correlation Analysis

A Pearson correlation analysis among the advanced, developing and least developed of the 13 non oil producing countries revealed a significant correlation between School Enrollment and three countries, Jamaica, Haiti and Nepal, with the FDI of Cuba (Table 155).

Table 155
Pearson Correlation Analysis for FDI Cuba and School Enrollments for all the Countries in the Study

FDI Cuba Pearson Correlation Sig. (2-Tailed) N	USA	Japan	Germany	France	Spain	China	India	Russian Federation
	0.376 0.284 10	-0.078 0.831 10	-0.269 0.452 10	-0.208 0.564 10	0.155 0.668 10	0.326 0.358 10	0.471 0.169 10	0.375 0.286 10
Jamaica	Haiti	Peru	Madagascar	Nepal				
-0.741* 0.014 10	-0.727* 0.017 10	-0.183 0.613 10	0.619 0.056 10	0.674* 0.032 10				

Results for Category I (Advanced Countries) Using the Independent Variable, School Enrollments

The multiple regression analysis, with FDI of Cuba as the dependent variable and School Enrollment for the advanced countries, the United States, Japan, Germany, France and Spain as the independent variables, did not revealed any significant relationships. From the ANOVA, the F-value = 2.477 with a p-value = 0.200 implying that the model was not significant (Table 156). This was also seen from the multiple regression analysis where the beta coefficients were not significant, implying the null hypothesis was not rejected for these countries (Table 157). Therefore, there was not a significant correlation between the FDI of Cuba and School Enrollment for these advanced countries, the United States, Japan, Germany, France and Spain. From the collinearity diagnostics, the variance inflation factor (VIF) was 3.879, 347.642, 3.488, 182.569 and 58.624 for the United States, Japan, Germany, France and Spain, respectively. (VIF greater than 5 is usually an indication of a multicollinearity problem.) This implies that there was a major multicollinearity problem with the independent variables. A correlation analysis further reinforced this position. Simple linear regression was conducted for each of these countries.

Table 156

Regression Analysis of the United States, Japan, Germany, France, Spain & FDI Cuba

ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	849.699	5	169.940	2.477	.200
	Residual	274.401	4	68.600		
	Total	1124.100	9			

a. Predictors: (Constant), SPAIN, USA, GERMANY, FRANCE, JAPAN
b. Dependent Variable: FDICUBA

Table 157

Regression Coefficient of the United States, Japan, Germany, France, Spain & FDI Cuba

Coefficients

		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
Model		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	2.267	152.281		.015	.989		
	USA	-.478	.927	-.251	-.516	.633	.258	3.879
	JAPAN	2.896	3.034	4.396	.954	.394	.003	347.642
	GERMANY	-.283	.151	-.865	-1.876	.134	.287	3.488
	FRANCE	-2.751	2.165	-4.241	-1.271	.273	.005	182.569
	SPAIN	.958	3.628	.499	.264	.805	.017	58.624

a. Dependent Variable: FDICUBA

A simple linear regression analysis for FDI Cuba with School Enrollment for the United States did not revealed a significant relationship (β = 0.716, p-value = 0.284). Therefore, there was not a significant correlation between the FDI to Cuba and School Enrollment for the United States, implying the null hypothesis was not rejected for this country. The fact that there was not a significant relationship was reinforcing the existing trade embargo (Mesa-Lago, 2001) (Tables 158 and 159).

Table 158
Regression Analysis of the United States & FDI Cuba

ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	159.040	1	159.040	1.318	.284
	Residual	965.060	8	120.633		
	Total	1124.100	9			

a. Predictors: (Constant), USA
b. Dependent Variable: FDICUBA

Table 159
Regression Coefficient Analysis of the United States & FDI Cuba

Coefficients

		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
Model		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	-47.605	48.292		-.986	.353		
	USA	.716	.624	.376	1.148	.284	1.000	1.000

a. Dependent Variable: FDICUBA

A simple linear regression analysis for FDI Cuba with School Enrollment for Japan did not revealed a significant relationship (β = -0.0513, p-value = 0.831). Therefore, there was not a significant correlation between the FDI to Cuba and School Enrollment for Japan, implying the null hypothesis was not rejected for this country (Tables 160 and 161).

Table 160
Regression Analysis of Japan & FDI Cuba

ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
	Regression	6.821	1	6.821	.049	.831
	Residual	1117.279	8	139.660		
	Total	1124.100	9			

a. Predictors: (Constant), JAPAN
b. Dependent Variable: FDICUBA

Table 161
Regression Coefficient Analysis of Japan & FDI Cuba

Coefficients

		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
Model		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	10.105	11.505		.878	.405		
	JAPAN	-5.132E-02	.232	-.078	-.221	.831	1.000	1.000

a. Dependent Variable: FDICUBA

A simple linear regression analysis between FDI Cuba and School Enrollment for Germany did not revealed a significant relationship (β = -0.082, p-value = 0.452) (Tables 162 and 163). Therefore, there was not a significant correlation between the FDI to

Cuba and School Enrollment for Germany, implying the null hypothesis was not rejected for this country.

Table 162
Regression Analysis of Germany & FDI Cuba

ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	81.602	1	81.602	.626	.452
	Residual	1042.498	8	130.312		
	Total	1124.100	9			

a. Predictors: (Constant), GERMANY
b. Dependent Variable: FDICUBA

Table 163
Regression Coefficient Analysis of Germany & FDI Cuba

Coefficients

		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
Model		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	13.379	8.033		1.665	.134		
	GERMANY	-8.818E-02	.111	-.269	-.791	.452	1.000	1.000

a. Dependent Variable: FDICUBA

A simple linear regression analysis between FDI Cuba and School Enrollment for France did not revealed a significant relationship (β = -0.135, p-value = 0.564) (Tables 164 and 165). Therefore, there was not a significant correlation between the FDI to Cuba and

School Enrollment for France, implying the null hypothesis was not rejected for this country.

Table 164
Regression Analysis of France & FDI Cuba

ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	48.613	1	48.613	.362	.564
	Residual	1075.487	8	134.436		
	Total	1124.100	9			

a. Predictors: (Constant), FRANCE
b. Dependent Variable: FDICUBA

Table 165
Regression Coefficient Analysis of France & FDI Cuba

Coefficients

		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
Model		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	14.296	11.565		1.236	.251		
	FRANCE	-.135	.224	-.208	-.601	.564	1.000	1.000

a Dependent Variable: FDICUBA

A simple linear regression analysis between FDI Cuba and School Enrollment for Spain did not revealed a significant relationship (β = 0.298, p-value = 0.668) (Tables 166 and 167). Therefore, there was not a significant correlation between the FDI to Cuba and

School Enrollment for Spain, implying the null hypothesis was not rejected for this country.

Table 166
Regression Analysis of Spain & FDI Cuba

ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	27.127	1	27.127	.198	.668
	Residual	1096.973	8	137.122		
	Total	1124.100	9			

a. Predictors: (Constant), SPAIN
b. Dependent Variable: FDICUBA

Table 167
Regression Coefficient Analysis of Spain & FDI Cuba

Coefficients

		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
Model		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	-10.768	41.686		-.258	.803		
	SPAIN	.298	.670	.155	.445	.668	1.000	1.000

a. Dependent Variable: FDICUBA

Results for the Independent Variable, Unemployment

Pearson Correlation Analysis

A Pearson correlation analysis among the advanced, developing and least developed of the 13 non oil-producing countries revealed a significant correlation of total Unemployment with the country of Japan and the FDI of Cuba (Table 168).

Table 168

Pearson Correlation analysis for FDI Cuba and total Unemployment for all the countries in the study

FDI Cuba Pearson Correlation Sig. (2-Tailed) N	USA	Japan	Germany	France	Spain	China	India	Russian Federation
	-0.242 0.501 10	-0.752* 0.012 10	0.535 0.111 10	0.274 0.443 10	-0.254 0.479 10	0.160 0.660 10	0.396 0.258 10	-0.119 0.744 10

Jamaica	Haiti	Peru	Madagascar	Nepal
-0.430 0.215 10	-0.284 0.427 10	0.048 0.895 10	-0.102 0.780 10	-0.555 0.096 10

<u>Results for Category I (Advanced Countries) Using the Independent Variable, Total Unemployment</u>

The multiple regression analysis, with FDI to Cuba as the dependent variable and total Unemployment for the advanced countries, the United States, Japan, Germany, France and Spain as the independent variables, did not revealed any significant relationships. From the ANOVA, the F-value = 2.202 with a p-value = 0.232, implying that the model was not significant (Table 169). This was also seen from the multiple regression analysis where the beta coefficients were not significant, implying the null hypothesis was not rejected for these countries (Table 170). Therefore, there was not a significant correlation between the FDI to Cuba and total Unemployment for these advanced countries, the United States, Japan, Germany, France and Spain. From the collinearity diagnostics, the variance inflation factor (VIF) was 3.665, 2.804, 7.158, 14.454 and 12.564 for the United States, Japan, Germany, France and Spain, respectively. (VIF greater than 5 is usually an indication of a multicollinearity problem.) This implies a major multicollinearity problem for the independent variables. A Pearson correlation analysis further reinforced this position for the country of Japan showing a significant correlation with the FDI of Cuba. Simple linear regression was conducted for each of these countries.

Table 169
Regression Analysis of the United States, Japan, Germany, France, Spain & FDI Cuba

ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	824.543	5	164.909	2.202	.232
	Residual	299.557	4	74.889		
	Total	1124.100	9			

a. Predictors: (Constant), SPAIN, JAPAN, GERMANY, USA, FRANCE
b. Dependent Variable: FDICUBA

Table 170
Regression Coefficient of the United States, Japan, Germany, France, Spain & FDI Cuba

Coefficients

		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
Model		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	14.458	71.629		.202	.850		
	USA	2.750	8.182	.166	.336	.754	.273	3.665
	JAPAN	-12.654	9.522	-.574	-1.329	.255	.357	2.804
	GERMANY	-1.913	6.851	-.193	-.279	.794	.140	7.158
	FRANCE	10.298	12.421	.814	.829	.454	.069	14.454
	SPAIN	-2.971	3.111	-.874	-.955	.394	.080	12.564

a. Dependent Variable: FDICUBA

A simple linear regression analysis between FDI Cuba and total Unemployment for the United States did not revealed a significant relationship (β = -4.0, p-value = 0.501) (Tables 171 and 172). Therefore, there was not a significant correlation between the FDI to Cuba and total Unemployment for the United States, implying the null hypothesis was not rejected for this country.

Table 171
Regression Analysis of United States & FDI Cuba

ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	65.600	1	65.600	.496	.501
	Residual	1058.500	8	132.312		
	Total	1124.100	9			

a. Predictors: (Constant), USA
b. Dependent Variable: FDICUBA

Table 172

Regression Coefficient Analysis of United States & FDI Cuba

Coefficients

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	27.300	28.073		.972	.359		
	USA	-4.000	5.681	-.242	-.704	.501	1.000	1.000

a. Dependent Variable: FDICUBA

A simple linear regression analysis between FDI Cuba and total unemployment for Japan revealed a significant negative relationship (β = -16.56, p-value = 0.012) (Tables 173 and 174). This implied that the null hypothesis was rejected for this country. With lower unemployment in Japan, FDI to Cuba increased. This was a reasonable result as lower unemployment in Japan implied economic growth in Japan and the rest of the world, implying more foreign investments.

Table 173

Regression Analysis of Japan & FDI Cuba

ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	635.358	1	635.358	10.400	.012
	Residual	488.742	8	61.093		
	Total	1124.100	9			

a. Predictors: (Constant), JAPAN

b. Dependent Variable: FDICUBA

Table 174
Regression Coefficient Analysis of Japan & FDI Cuba

Coefficients

		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
Model		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	85.215	24.163		3.527	.008		
	JAPAN	-16.563	5.136	-.752	-3.225	.012	1.000	1.000

a. Dependent Variable: FDICUBA

A simple linear regression analysis between FDI Cuba and total Unemployment for Germany did not revealed a significant relationship (β = 5.31, p-value = 0.111) (Tables 175 and 176). Therefore, there was not a significant correlation between the FDI to Cuba and total Unemployment for Germany, implying the null hypothesis was not rejected for this country.

Table 175
Regression Analysis of Germany & FDI Cuba

ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	321.573	1	321.573	3.206	.111
	Residual	802.527	8	100.316		
	Total	1124.100	9			

a. Predictors: (Constant), GERMANY
b. Dependent Variable: FDICUBA

Table 176
Regression Coefficient Analysis of Germany & FDI Cuba

Coefficients

		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
Model		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	-41.120	27.450		-1.498	.173		
	GERMANY	5.306	2.964	.535	1.790	.111	1.000	1.000

a. Dependent Variable: FDICUBA

A simple linear regression analysis between FDI Cuba and total Unemployment for France did not revealed a significant relationship (β = 3.47, p-value = 0.443) (Tables 177 and 178). Therefore, there was not a significant correlation between the FDI to Cuba and total Unemployment for France, implying the null hypothesis was not rejected for this country.

Table 177
Regression Analysis of France & FDI Cuba

ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
	Regression	84.579	1	84.579	.651	.443
	Residual	1039.521	8	129.940		
	Total	1124.100	9			

a. Predictors: (Constant), FRANCE
b. Dependent Variable: FDICUBA

Table 178
Regression Coefficient Analysis of France & FDI Cuba

Coefficients

		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
Model		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	-23.271	38.557		-.604	.563		
	FRANCE	3.472	4.304	.274	.807	.443	1.000	1.000

a. Dependent Variable: FDICUBA

A simple linear regression analysis between FDI Cuba and total Unemployment for Spain did not revealed a significant relationship (β = -0.863, p-value = 0.479) (Tables 179 and 180). Therefore, there was not a significant correlation between the FDI to Cuba and total Unemployment for Spain, implying the null hypothesis was not rejected for this country.

Table 179
Regression Analysis of Spain & FDI Cuba

ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	72.402	1	72.402	.551	.479
	Residual	1051.698	8	131.462		
	Total	1124.100	9			

a. Predictors: (Constant), SPAIN
b. Dependent Variable: FDICUBA

Table 180

Regression Coefficient Analysis of Spain & FDI Cuba

Coefficients

		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
Model		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	17.944	14.273		1.257	.244		
	SPAIN	-.863	1.163	-.254	-.742	.479	1.000	1.000

a. Dependent Variable: FDICUBA

Results for Category II (Developing Countries) Using the Independent Variable, School Enrollments

The multiple regression analysis, with FDI to Cuba as the dependent variable and School Enrollment for the developing countries, China, India and the Russian Federation as the independent variables, did not revealed a significant relationship. From the ANOVA, the F-value = 0.648 with a p-value = 0.612 implying that the model was not significant (Table 181). This was also seen from the multiple regression analysis where the beta coefficients were not significant, implying the null hypothesis was not rejected for these countries (Table 182). Therefore, there was not a significant correlation between the FDI to Cuba and School Enrollment for these developing countries, China, India and the Russian Federation. From the collinearity diagnostics, the variance inflation factor (VIF) was 23.863, 2.974 and 28.011 for China, India and the Russian Federation, respectively, which implied a major multicollinearity problem, except for the country of India (2.974). (As stated before a VIF greater than 5 is usually an indication of a multicollinearity problem.) This implies that two out of the three independent variables are highly correlated and cannot be utilized for multiple regression analysis. Simple linear regression was conducted for each of these countries.

Table 181
Regression Analysis of Russian Federation, China, India & FDI Cuba

ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	275.234	3	91.745	.648	.612
	Residual	848.866	6	141.478		
	Total	1124.100	9			

a. Predictors: (Constant), RUSSIA, INDIA, CHINA
b. Dependent Variable: FDICUBA

Table 182
Regression Coefficient Analysis of Russian Federation, China, India & FDI Cuba

Coefficients

		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
Model		B	Std. Error	Beta			Tolerance	VIF
	(Constant)	-74.708	94.865		-.788	.461		
	CHINA	-1.100	2.603	-.733	-.423	.687	.042	23.863
	INDIA	3.962	5.467	.443	.725	.496	.336	2.974
	RUSSIA	.881	2.258	.733	.390	.710	.036	28.011

a. Dependent Variable: FDICUBA

A simple linear regression analysis between FDI Cuba and School Enrollment for China did not revealed a significant relationship (β = 0.489, p-value = 0.358) (Tables 183 and 184). Therefore, there was not a significant correlation between the FDI to Cuba and School Enrollment for China, implying the null hypothesis was not rejected for this country.

Table 183
Regression Analysis of China & FDI Cuba

ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	119.413	1	119.413	.951	.358
	Residual	1004.687	8	125.586		
	Total	1124.100	9			

a. Predictors: (Constant), CHINA
b. Dependent Variable: FDICUBA

Table 184
Regression Coefficient Analysis of China & FDI Cuba

Coefficients

		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
Model		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	1.097	7.643		.144	.889		
	CHINA	.489	.502	.326	.975	.358	1.000	1.000

a. Dependent Variable: FDICUBA

A simple linear regression analysis between FDI Cuba and School Enrollment for India did not revealed a significant relationship (β = 4.21, p-value = 0.169) (Tables 185 and 186). Therefore, there was not a significant correlation between the FDI to Cuba and School Enrollment for India, implying the null hypothesis was not rejected for this country.

Table 185
Regression Analysis of India & FDI Cuba

ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	249.817	1	249.817	2.286	.169
	Residual	874.283	8	109.285		
	Total	1124.100	9			

a. Predictors: (Constant), INDIA
b. Dependent Variable: FDICUBA

Table 186

Regression Coefficient Analysis of India & FDI Cuba

Coefficients

		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
Model		B	Std. Error	Beta			Tolerance	VIF
	(Constant)	-37.243	29.909		-1.245	.248		
	INDIA	4.212	2.786	.471	1.512	.169	1.000	1.000

a. Dependent Variable: FDICUBA

A simple linear regression analysis between FDI Cuba and School Enrollment for the Russian Federation did not revealed a significant relationship (β = 0.451, p-value = 0.286) (Tables 187 and 188). Therefore, there was not a significant correlation between the FDI to Cuba and School Enrollment for the Russian Federation, implying the null hypothesis was not rejected for this country.

Table 187

Regression Analysis of Russian Federation & FDI Cuba

ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	157.859	1	157.859	1.307	.286
	Residual	966.241	8	120.780		
	Total	1124.100	9			

a. Predictors: (Constant), RUSSIA

b. Dependent Variable: FDICUBA

Table 188
Regression Coefficient Analysis of Russian Federation & FDI Cuba

Coefficients

		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
Model		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	-20.418	24.839		-.822	.435		
	RUSSIA	.451	.394	.375	1.143	.286	1.000	1.000

a. Dependent Variable: FDICUBA

Results for Category II (Developing Countries) Using the Independent Variable, Total Unemployment

The multiple regression analysis, with FDI to Cuba as the dependent variable and total Unemployment for the developing countries, China, India and the Russian Federation as the independent variables, did not revealed a significant relationship. From the ANOVA, the F-value = 0.776 with a p-value = 0.549 implying that the model was not significant (Table 189). This was also seen from the multiple regression analysis where the beta coefficients were not significant, implying the null hypothesis was not rejected for these countries (Table 190). Therefore, there was no significant correlation between the FDI to Cuba and total unemployment for these developing countries, China, India and the Russian Federation. From the collinearity diagnostics, the variance inflation factor (VIF) was 3.834, 2.797 and 5.642 for China, India and the Russian Federation, respectively, which implied a major multicollinearity problem for the Russian Federation but not for China (3.834) and India (2.797). (As stated before a VIF greater than 5 is usually an indication of a multicollinearity problem.) This implies that one of the three independent variables was highly correlated with the one or more of the other independent variables. A Pearson correlation analysis further reinforced this position. Simple linear regression was conducted for each of these countries.

Table 189
Regression Analysis of Russian Federation, China, India & FDI Cuba

ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	314.221	3	104.740	.776	.549
	Residual	809.879	6	134.980		
	Total	1124.100	9			

a. Predictors: (Constant), RUSSIA, INDIA, CHINA
b. Dependent Variable: FDICUBA

Table 190
Regression Coefficient Analysis of Russian Federation, China, India & FDI Cuba

Coefficients

Model		Unstandardized Coefficients B	Std. Error	Standardized Coefficients Beta	t	Sig.	Collinearity Statistics Tolerance	VIF
1	(Constant)	-124.805	112.893		-1.106	.311		
	CHINA	4.996	15.197	.223	.329	.754	.261	3.834
	INDIA	18.103	12.478	.841	1.451	.197	.357	2.797
	RUSSIA	3.525	3.883	.747	.908	.399	.177	5.642

a. Dependent Variable: FDICUBA

A simple linear regression analysis between FDI Cuba and total Unemployment for China did not revealed a significant relationship (β = 3.57, p-value = 0.660) (Tables 191 and 192). Therefore, there was not a significant correlation between the FDI to Cuba and total Unemployment for China, implying the null hypothesis was not rejected for this country.

Table 191
Regression Analysis of China & FDI Cuba

ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	28.630	1	28.630	.209	.660
	Residual	1095.470	8	136.934		
	Total	1124.100	9			

a. Predictors: (Constant), CHINA
b. Dependent Variable: FDICUBA

Table 192

Regression Coefficient Analysis of China & FDI Cuba

Coefficients

		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
Model		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	-5.775	29.701		-.194	.851		
	CHINA	3.574	7.817	.160	.457	.660	1.000	1.000

a. Dependent Variable: FDICUBA

A simple linear regression analysis between FDI Cuba and total Unemployment for India did not revealed a significant relationship (β = 8.52, p-value = 0.258) (Tables 193 and 194). Therefore, there was not a significant correlation between the FDI to Cuba and total Unemployment for India, implying the null hypothesis was not rejected for this country.

Table 193

Regression Analysis of India & FDI Cuba

ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	175.844	1	175.844	1.484	.258
	Residual	948.256	8	118.532		
	Total	1124.100	9			

a. Predictors: (Constant), INDIA

b. Dependent Variable: FDICUBA

Table 194
Regression Coefficient Analysis of India & FDI Cuba

Coefficients

		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
Model		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	-31.045	31.996		-.970	.360		
	INDIA	8.515	6.991	.396	1.218	.258	1.000	1.000

a. Dependent Variable: FDICUBA

A simple linear regression analysis between FDI Cuba and total Unemployment for the Russian Federation did not revealed a significant relationship (β = -0.560, p-value = 0.744) (Tables 195 and 196). Therefore, there was not a significant correlation between the FDI to Cuba and total Unemployment for the Russian Federation, implying the null hypothesis was not rejected for this country.

Table 195
Regression Analysis of Russian Federation & FDI Cuba

ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	15.816	1	15.816	.114	.744
	Residual	1108.284	8	138.536		
	Total	1124.100	9			

a. Predictors: (Constant), RUSSIA
b. Dependent Variable: FDICUBA

Table 196
Regression Coefficient Analysis of Russian Federation & FDI Cuba

Coefficients

		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
Model		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	12.670	15.172		.835	.428		
	RUSSIA	-.560	1.656	-.119	-.338	.744	1.000	1.000

a. Dependent Variable: FDICUBA

<u>Results for Category III (Least Developed Countries) Using the Independent Variable, School Enrollments</u>

For the third category of countries, multiple regression analysis was done for FDI to Cuba as the dependent variable and School Enrollment for the least Developing countries, Jamaica, Haiti, Peru, Madagascar and Nepal as the independent variables. This analysis did not revealed a significant, but a marginal relationships with FDI to Cuba (F value = 5.676 with a p-value = 0.059) (Table 197). Again, the beta coefficients were not significant, implying the null hypothesis was marginally rejected for these countries (Table 198). Therefore, there was not a significant correlation between the FDI of Cuba and School Enrollment for the least developing countries of

Jamaica, Haiti, Peru, Madagascar and Nepal. School Enrollment for three out of the five countries were highly correlated with a VIF (variance inflation factor) of 5.243, 2.008, 1.894, 16.249, 8.358 for Jamaica, Haiti, Peru, Madagascar and Nepal, respectively. (VIF greater than 5 is usually an indication of a multicollinearity problem.) A correlation analysis was also done and reinforced having a high correlation among these variables. Hence, simple linear regression was conducted for each of these countries.

Table 197
Regression Analysis of Madagascar, Jamaica, Peru & FDI Cuba

ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	985.226	5	197.045	5.676	.059
	Residual	138.874	4	34.718		
	Total	1124.100	9			

a. Predictors: (Constant), NEPAL, PERU, HAITI, JAMAICA, MADAGASC
b. Dependent Variable: FDICUBA

Table 198

Regression Coefficient Analysis of Madagascar, Jamaica, Peru & FDI Cuba

Coefficients

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	23.236	27.965		.831	.453		
	JAMAICA	-.681	.490	-.560	-1.391	.237	.191	5.243
	HAITI	-1.921	.891	-.537	-2.157	.097	.498	2.008
	PERU	.237	.262	.218	.903	.418	.528	1.894
	MADAGASC	-14.280	13.455	-.752	-1.061	.348	.062	16.249
	NEPAL	4.802	2.854	.855	1.682	.168	.120	8.358

a. Dependent Variable: FDICUBA

A simple linear regression analysis for FDI Cuba with School Enrollment for Jamaica revealed a significant negative relationship (β = -0.902, p-value = 0.014) (Tables 199 and 200). Therefore, there was a significant negative correlation between the FDI to Cuba and School Enrollment for Jamaica, implying the null hypothesis was rejected for this country. School Enrollment in Jamaica was not inversely related to the FDI in Cuba. However, Cuba has been building its human capital in the area of education and health by exporting its services abroad; in turn, reducing its FDI dependency from foreign investors (Cruz, 2003) (Hickling-Hudson, 2004). This can negatively affect

Cuba's FDI inflow since most investors will invest in countries that are FDI dependent, like Jamaica (Chloe, 2008). According to the UNCTAD (1998-2008) report, it revealed that Jamaica's total FDI inflow for 2007 was 997 millions of dollars, compare to Cuba's 17 millions of dollars for the same year, reinforcing the above statement as a reasonable result.

Table 199

Regression Analysis of Jamaica & FDI Cuba

ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	617.749	1	617.749	9.760	.014
	Residual	506.351	8	63.294		
	Total	1124.100	9			

a. Predictors: (Constant), JAMAICA

b. Dependent Variable: FDICUBA

Table 200

Regression Coefficient Analysis of Jamaica & FDI Cuba

Coefficients

		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
Model		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	15.477	3.539		4.373	.002		
	JAMAICA	-.902	.289	-.741	-3.124	.014	1.000	1.000

a. Dependent Variable: FDICUBA

A simple linear regression analysis between FDI Cuba and School Enrollment for Haiti revealed a significant negative relationship ($\beta = -2.60$, p-value = 0.017) (Tables 201 and 202). Therefore, there was a significant negative relationship between the FDI to Cuba and School Enrollment for Haiti, implying the null hypothesis was rejected for this country. In 2008, the Cuban government main source of income was exporting its human capital services, like education to less developed countries with a lower education standard, like Haiti (Chloe, 2008). However, such services to Haiti can reduce Cuba's FDI inflow since Cuba's less dependency would redirect countries to invest elsewhere. According to the UNCTAD (1998-2008) report, it revealed that Haiti's total FDI inflow for 2007 was 75 millions of dollars, compare to Cuba's 17 millions of dollars for the same year, reinforcing the above statement as a reasonable result.

Table 201

Regression Analysis of Haiti & FDI Cuba

ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	594.922	1	594.922	8.994	.017
	Residual	529.178	8	66.147		
	Total	1124.100	9			

a. Predictors: (Constant), HAITI
b. Dependent Variable: FDICUBA

Table 202

Regression Coefficient Analysis of Haiti & FDI Cuba

Coefficients

		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
Model		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	18.630	4.461		4.176	.003		
	HAITI	-2.602	.868	-.727	-2.999	.017	1.000	1.000

a. Dependent Variable: FDICUBA

A simple linear regression analysis between FDI Cuba and School Enrollment for Peru did not revealed a significant relationship (β = -0.198, p-value = 0.613) (Tables 203 and 204). Therefore, there was not a significant correlation between the FDI to Cuba and School Enrollment for Peru, implying the null hypothesis was not rejected for this country.

Table 203
Regression Analysis of Peru & FDI Cuba

ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
	Regression	37.634	1	37.634	.277	.613
	Residual	1086.466	8	135.808		
	Total	1124.100	9			

a. Predictors: (Constant), PERU
b. Dependent Variable: FDICUBA

Table 204
Regression Coefficient Analysis of Peru & FDI Cuba

Coefficients

		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
Model		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	13.261	11.187		1.185	.270		
	PERU	-.198	.377	-.183	-.526	.613	1.000	1.000

a. Dependent Variable: FDICUBA

A simple linear regression analysis for FDI Cuba with School Enrollment for Madagascar revealed a marginally significant positive relationship, implying the null hypothesis was rejected for this country (β = 11.77, p-value = 0.056) (Tables 205 and 206). School Enrollment in Madagascar was negatively related to the FDI in Cuba. In 2008, the Cuban government main source of income was exporting services, like education to less developed countries with a lower education standard, like Madagascar (Chloe, 2008) According to Cruz (2003), Cuba is building on its human capital services of health and education and exporting these services abroad. In turn, these services can cause a decline in Cuba’s FDI inflow allowing other countries to invest elsewhere, mostly in FDI dependent countries. According to the UNCTAD (1998-2008) report, revealed that Madagascar total FDI inflow for 2007 was 997 millions of dollars compare to Cuba’s 17 millions of dollars for the same year, reinforcing the above analysis as a reasonable result.

Table 205
Regression Analysis of Madagascar & FDI Cuba

ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	431.308	1	431.308	4.981	.056
	Residual	692.792	8	86.599		
	Total	1124.100	9			

a. Predictors: (Constant), MADAGASC
b. Dependent Variable: FDICUBA

Table 206
Regression Coefficient Analysis of Madagascar & FDI Cuba

Coefficients

		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
Model		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	-21.948	13.607		-1.613	.145		
	MADAGASC	11.765	5.272	.619	2.232	.056	1.000	1.000

a. Dependent Variable: FDICUBA

A simple linear regression analysis for FDI Cuba with School Enrollment for Nepal revealed a significant positive relationship (β = 3.79, p-value = 0.032) (Tables 207 and 208). Therefore, there was a significant correlation between the FDI to Cuba and School Enrollment for Nepal, implying the null hypothesis was rejected for this country. According to Chloe (2008), Cuba has strong diplomatic ties in Asia and the Middle East; thereby, expanding its human capital based on the country's high education and health policies. Nepal may be profiting since its UNCTAD report for 2005/2006 accounted for 14.1% (1998) of FDI inflow from Caribbean countries like Cuba. Surprisingly, Nepal's FDI inflow according to the UNCTAD report (1998-2008) for 2007 was 6 millions dollars than Cuba's FDI inflow of 17 millions of dollars for the same year. As a reasonable result, an increase of human capital services to Nepal from Cuba could hinder Cuba's ability to remain as an FDI dependent country.

Table 207
Regression Analysis of Nepal & FDI Cuba

ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
	Regression	511.253	1	511.253	6.674	.032
	Residual	612.847	8	76.606		
	Total	1124.100	9			

a. Predictors: (Constant), NEPAL
b. Dependent Variable: FDICUBA

Table 208
Regression Coefficient Analysis of Nepal & FDI Cuba

Coefficients

		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
Model		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	-14.199	8.917		-1.592	.150		
	NEPAL	3.789	1.467	.674	2.583	.032	1.000	1.000

a. Dependent Variable: FDICUBA

Results for Category III (Least Developed Countries) Using the Independent Variable, Total Unemployment

For the third category of countries, multiple regression analysis was done for FDI to Cuba as the

dependent variable and total Unemployment for the least Developing countries, Jamaica, Haiti, Peru, Madagascar, and Nepal as the independent variables. This analysis did not revealed any significant relationships with FDI to Cuba (F value = 2.022 with a p-value = 0.257) (Table 209). Again, the beta coefficients were not significant, implying the null hypothesis was not rejected for these countries (Table 210). Therefore, there was not a significant correlation between the FDI of Cuba and total Unemployment for the least developing countries of Jamaica, Haiti, Peru, Madagascar, and Nepal. Like above, total Unemployment for four of the five countries were not highly correlated with VIFs (variance inflation factor) of 4.707, 2.162, 3.231, 2.394 and 6.984 for Haiti, Peru, Madagascar, Nepal and Jamaica, respectively. (VIF greater than 5 is usually an indication of a multicollinearity problem.) A correlation analysis was also done and reinforced with the low and high correlation among these variables.

Simple linear regression was conducted for each of these countries.

Table 209
Regression Analysis of Jamaica, Haiti, Peru Madagascar and Nepal & FDI Cuba

ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	805.478	5	161.096	2.022	.257
	Residual	318.622	4	79.656		
	Total	1124.100	9			

a. Predictors: (Constant), NEPAL, HAITI, PERU, MADAGASC, JAMAICA
b. Dependent Variable: FDICUBA

Table 210
Regression Coefficient Analysis of Jamaica, Haiti, Peru, Madagascar and Nepal & FDI Cuba

Coefficients

		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
Model		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	-79.701	57.591		-1.384	.239		
	JAMAICA	-4.929	3.002	-1.155	-1.642	.176	.143	6.984
	HAITI	.307	1.660	.107	.185	.862	.212	4.707
	PERU	21.070	9.621	.857	2.190	.094	.462	2.162
	MADAGASC	-1.715	2.435	-.337	-.704	.520	.310	3.231
	NEPAL	-.866	1.134	-.314	-.764	.488	.418	2.394

a. Dependent Variable: FDICUBA

A simple linear regression analysis for FDI Cuba with total Unemployment for Jamaica did not revealed a significant relationship (β = -1.834, p-value = 0.215) (Tables 211 and 212). Therefore, there was not a significant correlation between the FDI to Cuba and total Unemployment for Jamaica, implying the null hypothesis was not rejected for this country.

Table 211
Regression Analysis of Jamaica & FDI Cuba

ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	207.778	1	207.778	1.814	.215
	Residual	916.322	8	114.540		
	Total	1124.100	9			

a. Predictors: (Constant), JAMAICA
b. Dependent Variable: FDICUBA

Table 212
Regression Coefficient Analysis of Jamaica & FDI Cuba

Coefficients

		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
Model		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	31.198	17.772		1.755	.117		
	JAMAICA	-1.834	1.362	-.430	-1.347	.215	1.000	1.000

a. Dependent Variable: FDICUBA

A simple linear regression analysis for FDI Cuba with total Unemployment for Haiti did not revealed a significant relationship (β = -0.816, p-value = 0.427) (Tables 213 and 214). Therefore, there was not a significant correlation between the FDI to Cuba and total Unemployment for Haiti, implying the null hypothesis was not rejected for this country.

Table 213
Regression Analysis of Haiti & FDI Cuba

ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	90.596	1	90.596	.701	.427
	Residual	1033.504	8	129.188		
	Total	1124.100	9			

a. Predictors: (Constant), HAITI
b. Dependent Variable: FDICUBA

Table 214
Regression Coefficient Analysis of Haiti & FDI Cuba

Coefficients

		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
Model		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	10.149	4.633		2.190	.060		
	HAITI	-.816	.975	-.284	-.837	.427	1.000	1.000

a. Dependent Variable: FDICUBA

A simple linear regression analysis for FDI Cuba with total Unemployment for Peru did not revealed a significant relationship (β = 1.19, p-value = 0.895) (Tables 215 and 216). Therefore, there was not a significant correlation between the FDI to Cuba and total Unemployment for Peru, implying the null hypothesis was not rejected for this country.

Table 215
Regression Analysis of Peru & FDI Cuba

ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	2.624	1	2.624	.019	.895
	Residual	1121.476	8	140.184		
	Total	1124.100	9			

a. Predictors: (Constant), PERU
b. Dependent Variable: FDICUBA

Table 216
Regression Coefficient Analysis of Peru & FDI Cuba

Coefficients

		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
Model		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	-1.171	64.941		-.018	.986		
	PERU	1.188	8.679	.048	.137	.895	1.000	1.000

a. Dependent Variable: FDICUBA

A simple linear regression analysis for FDI Cuba with total Unemployment for Madagascar did not revealed a significant relationship ($\beta = -0.518$, p-value = 0.780) (Tables 217 and 218). Therefore, there was not a significant correlation between the FDI to

Cuba and total Unemployment for Madagascar, implying the null hypothesis was not rejected for this country.

Table 217
Regression Analysis of Madagascar & FDI Cuba

ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	11.624	1	11.624	.084	.780
	Residual	1112.476	8	139.059		
	Total	1124.100	9			

a. Predictors: (Constant), MADAGASC
b. Dependent Variable: FDICUBA

Table 218
Regression Coefficient Analysis of Madagascar & FDI Cuba

Coefficients

		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
Model		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	9.191	6.363		1.444	.187		
	MADAGASC	-.518	1.790	-.102	-.289	.780	1.000	1.000

a. Dependent Variable: FDICUBA

A simple linear regression analysis for FDI Cuba with total Unemployment for Nepal did not revealed a significant relationship (β = -1.53, p-value = 0.096) (Tables 219 and 220). Therefore, there was not a significant correlation between the FDI to Cuba and total Unemployment for Nepal, implying the null hypothesis was not rejected for this country.

Table 219
Regression Analysis of Nepal & FDI Cuba

ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	346.384	1	346.384	3.563	.096
	Residual	777.716	8	97.215		
	Total	1124.100	9			

a. Predictors: (Constant), NEPAL
b. Dependent Variable: FDICUBA

Table 220
Regression Coefficient Analysis of Nepal & FDI Cuba

Coefficients

		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
Model		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	12.707	4.094		3.104	.015		
	NEPAL	-1.529	.810	-.555	-1.888	.096	1.000	1.000

a. Dependent Variable: FDICUBA

Summary of Results for Hypothesis 4

Category I (Advanced Countries)

The United States, Japan, France, Germany and Spain had an insignificant relationship between FDI inflow to Cuba and School Enrollment.

The United States, France, Germany and Spain had an insignificant relationship between FDI inflow to Cuba and total unemployment. Japan revealed a significant negative relationship.

Category II (Developing Countries)

China, India and the Russian Federation had an insignificant relationship between FDI inflow to Cuba and School Enrollment.

China, India and the Russian Federation had an insignificant relationship between FDI inflow to Cuba and total Unemployment.

Category III (Least Developing Countries)

Significant positive correlation existed between FDI inflow to Cuba and School Enrollment for Nepal. Jamaica and Haiti revealed a significant negative relationship. Insignificant result was found for Peru, while Madagascar showed a marginally significant positive relationship.

Jamaica, Haiti, Peru, Madagascar and Nepal had an insignificant relationship between FDI inflow to Cuba and total Unemployment.

Results for Hypothesis 5

FDI to Cuba was the dependent variable. For the advanced countries, the independent variables were Energy and Natural Resources for the United States, Japan, Germany, France and Spain (Sawalha, 2007). The independent variables for the developing countries were Energy and Natural Resources for China, India and the Russian Federation (Sawalha, 2007). The independent variables for the Least Developed Countries (LCD's) were Energy and Natural Resources for Jamaica, Haiti, Peru, Madagascar and Nepal. The Republic of Cuba's Energy and Natural Resources was not included in the model as there were only three data points. The Energy and Natural Resources hypothesis included two variables, Energy Use (measured in kilograms of oil equivalent per capita) and Fuel Imports (measured as a percentage of merchandise imports in United States dollars).

The fifth hypothesis to be tested is:

> Hypothesis H_{05}: The level of contribution of FDI inflow to Cuba is not significantly related to the Energy and Natural Resources for the three groups of countries.
>
> Hypothesis H_{A5}: The level of contribution of FDI inflow to Cuba is significantly related to the Energy and Natural Resources for the three groups of countries.

The multiple regression models to test Hypothesis 5 are listed below.

Category I (Advanced Countries)

$$FDI_{CUBA} = \alpha_O + \alpha_1 ENERGYNATRES_{US} + \alpha_2 ENERGYNATRES_{Japan} + \alpha_3 ENERGYNATRES_{Germany} + \alpha_4 ENERGYNATRES_{France} + \alpha_5 ENERGYNATRES_{Spain} + \varepsilon_1$$

Categories II (Developing Countries)

$$FDI_{CUBA} = \beta_O + \beta_1 ENERGYNATRES_{China} + \beta_2 ENERGYNATRES_{India} + \beta_3 ENERGYNATRES_{Russian\ Federation} + \varepsilon_2$$

Categories III (Least Developed Countries)

$$FDI_{CUBA} = \delta o + \delta_1 ENERGYNATRES_{Jamaica} + \delta_2 ENERGYNATRES_{Haiti} + \delta_3 ENERGYNATRES_{Peru} + \delta_4 ENERGYNATRES_{Madagascar} + \delta_5 ENERGYNATRES_{Nepal} + \varepsilon_3$$

The results were presented for both independent variables, energy use and fuel imports, for each of the three categories of countries.

Results for the First Independent Variable, Energy Use

Pearson Correlation Analysis

A Pearson correlation analysis among the advanced, developing and least developed of the 13 non-oil producing countries revealed a significant correlation between Energy Use with the country of Haiti and the FDI of Cuba (Table 221).

Table 221
Pearson Correlation analysis for FDI Cuba and Energy Use for all the Countries in the Study

FDI Cuba Pearson Correlation Sig. (2-Tailed) N	USA	Japan	Germany	France	Spain	China	India	Russian Federation
	-0.616 0.077 9	0.082 0.834 9	0.224 0.562 9	-0.063 0.873 9	0.031 0.937 9	0.568 0.111 9	0.498 0.172 9	0.352 0.352 9
Jamaica	Haiti	Peru	Madagascar	Nepal				
0.281 0.464 9	0.703* 0.034 9	0.503 0.167 9	No Data	-0.078 0.842 9				

Results for Category I (Advanced Countries) Using the Independent Variable, Energy Use

The multiple regression analysis, with FDI of Cuba as the dependent variable and Energy Use for the advanced countries, the United States, Japan, Germany, France and Spain as the independent variables, did not revealed a significant, but a marginal relationships. From the ANOVA, the F-value = 7.415 with a p-value = 0.065 implying that the model was not significant (Table 222). Also, two beta coefficients (beta coefficient for U.S. = - 0.181 with a p-value = 0.012, and beta coefficient for Japan = 0.322 with a p-value = 0.029) were significant, which contradicted the result of model insignificant (Table 223). This indicated multicollinearity problems. From the collinearity diagnostics, the variance inflation factor (VIF) was 4.048, 5.463, 3.112, 11.893 and 21.731 for the United States, Japan, Germany, France and Spain, respectively. (VIF greater than 5 is usually an indication of a multicollinearity problem.) As suspected, this implied that there was a major multicollinearity problem with the independent variables. Simple linear regression was conducted for each of these countries.

Table 222
Regression Analysis of the United States, Japan, Germany, France, Spain & FDI Cuba

ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	951.043	5	190.209	7.415	.065
	Residual	76.957	3	25.652		
	Total	1028.000	8			

a. Predictors: (Constant), SPAIN, GERMANY, JAPAN, USA, FRANCE
b. Dependent Variable: FDICUBA

Table 223

Regression Coefficient of the United States, Japan, Germany, France, Spain & FDI Cuba

Coefficients

Model		Unstandardized Coefficients B	Std. Error	Standardized Coefficients Beta	t	Sig.	Collinearity Statistics Tolerance	VIF
	(Constant)	727.699	360.042		2.021	.137		
	USA	-.181	.033	-1.734	-5.455	.012	.247	4.048
	JAPAN	.322	.082	1.453	3.935	.029	.183	5.463
	GERMANY	-.172	.075	-.637	-2.285	.106	.321	3.112
	FRANCE	.132	.084	.852	1.563	.216	.084	11.893
	SPAIN	-.147	.051	-2.132	-2.895	.063	.046	21.731

a. Dependent Variable: FDICUBA

A simple linear regression analysis between FDI Cuba and Energy Use for the United States did not revealed a significant relationship (β = -0.0643, p-value = 0.077). Therefore, there was not a significant correlation between the FDI to Cuba and Energy Use for the advanced country of the United States, implying the null hypothesis was not rejected for this country. The fact that there was not a significant relationship was reinforcing the existing trade embargo (Mesa-Lago, 2001)(Tables 224 and 225).

Table 224
Regression Analysis of the United States & FDI Cuba

ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	390.091	1	390.091	4.281	.077
	Residual	637.909	7	91.130		
	Total	1028.000	8			

a. Predictors: (Constant), USA
b. Dependent Variable: FDICUBA

Table 225
Regression Coefficient Analysis of the United States & FDI Cuba

Coefficients

		Unstandardized Coefficients		Standardized Coefficients	T	Sig.	Collinearity Statistics	
Model		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	516.677	246.526		2.096	.074		
	USA	-6.427E-02	.031	-.616	-2.069	.077	1.000	1.000

a. Dependent Variable: FDICUBA

A simple linear regression analysis between FDI Cuba and Energy Use for Japan did not revealed a significant relationship (β = 0.0182, p-value = 0.834). Therefore, there was not a significant correlation between the FDI to Cuba and Energy Use for the advanced country of Japan, implying the null hypothesis was not rejected for this country (Tables 226 and 227).

Table 226

Regression Analysis of Japan & FDI Cuba

ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	6.903	1	6.903	.047	.834
	Residual	1021.097	7	145.871		
	Total	1028.000	8			

a. Predictors: (Constant), JAPAN

b. Dependent Variable: FDICUBA

Table 227

Regression Coefficient Analysis of Japan & FDI Cuba

Coefficients

		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
Model		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	-67.687	341.819		-.198	.849		
	JAPAN	1.817E-02	.084	.082	.218	.834	1.000	1.000

a. Dependent Variable: FDICUBA

A simple linear regression analysis between FDI Cuba and Energy Use for Germany did not revealed a significant relationship (β = 0.0606, p-value = 0.562) (Tables 228 and 229). Therefore, there was not a significant correlation between the FDI to Cuba and Energy Use for Germany, implying the null hypothesis was not rejected for this country.

Table 228
Regression Analysis of Germany & FDI Cuba

ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
	Regression	51.574	1	51.574	.370	.562
	Residual	976.426	7	139.489		
	Total	1028.000	8			

a. Predictors: (Constant), GERMANY
b. Dependent Variable: FDICUBA

Table 229
Regression Coefficient Analysis of Germany & FDI Cuba

Coefficients

		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
Model		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	-248.692	419.976		-.592	.572		
	GERMANY	6.063E-02	.100	.224	.608	.562	1.000	1.000

a. Dependent Variable: FDICUBA

A simple linear regression analysis between FDI Cuba and Energy Use for France did not revealed a significant relationship (β = -0.00970, p-value = 0.873) (Tables 230 and 231). Therefore, there was not a significant correlation between the FDI to Cuba and Energy Use for France, implying the null hypothesis was not rejected for this country.

Table 230

Regression Analysis of France & FDI Cuba

ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	4.052	1	4.052	.028	.873
	Residual	1023.948	7	146.278		
	Total	1028.000	8			

a. Predictors: (Constant), FRANCE

b. Dependent Variable: FDICUBA

Table 231

Regression Coefficient Analysis of France & FDI Cuba

Coefficients

		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
Model		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	49.928	259.946		.192	.853		
	FRANCE	-9.702E-03	.058	-.063	-.166	.873	1.000	1.000

a. Dependent Variable: FDICUBA

A simple linear regression analysis between FDI Cuba and Energy Use for Spain did not revealed a significant relationship (β = 0.00213, p-value = 0.937) (Tables 232 and 233). Therefore, there was not a significant correlation between the FDI to Cuba and Energy Use for Spain, implying the null hypothesis was not rejected for this country. As a reasonable result, Spain is one of Cuba’s largest partners for FDI investment; however, most of Cuba’s energy use comes from Venezuela, followed by China and the Russian

Federation who are investing in Cuba's energy source (Chloe, 2008) (Mesa-Lago, 2005).

Table 232
Regression Analysis of Spain & FDI Cuba

ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	.978	1	.978	.007	.937
	Residual	1027.022	7	146.717		
	Total	1028.000	8			

a. Predictors: (Constant), SPAIN
b. Dependent Variable: FDICUBA

Table 233
Regression Coefficient Analysis of Spain & FDI Cuba

Coefficients

		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
Model		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	-6.072E-02	82.486		-.001	.999		
	SPAIN	2.130E-03	.026	.031	.082	.937	1.000	1.000

a. Dependent Variable: FDICUBA

Results for the First Independent Variable, Fuel Imports

Pearson Correlation Analysis

A Pearson correlation analysis among the advanced, developing and least developed of the 13 non oil-producing countries revealed a significant correlation of Fuel Imports with the country of Madagascar and the FDI of Cuba (Table 234).

Table 234
Pearson Correlation analysis for FDI Cuba and Fuel Imports for all the Countries in the Study

FDI Cuba Pearson Correlation Sig. (2-Tailed) N	USA	Japan	Germany	France	Spain	China	India	Russian Federation
	0.549 0.100 10	0.564 0.090 10	0.571 0.085 10	0.560 0.093 10	0.565 0.089 10	0.594 0.070 10	0.570 0.085 10	-0.040 0.913 10
Jamaica	Haiti	Peru	Madagascar	Nepal				
0.413 0.236 10	No Data	0.613 0.060 10	-0.791** 0.006 10	-0.462 0.179 10				

<u>Results for Category I (Advanced Countries) Using the Independent Variable, Fuel Imports</u>

The multiple regression analysis, with FDI to Cuba as the dependent variable and Fuel Imports for the advanced countries, the United States, Japan, Germany, France and Spain as the independent variables, did not revealed any significant relationships. From the ANOVA, the F-value = 0.978 with a p-value = 0.523, implying that the model was not significant (Table 235). This was also seen from the multiple regression analysis where the beta coefficients were not significant, implying the null hypothesis was not rejected for these countries (Table 236). Therefore, there was not a significant correlation between the FDI to Cuba and Fuel Imports for these advanced countries, the United States, Japan, Germany, France and Spain. From the collinearity diagnostics, the variance inflation factor (VIF) was 603.925, 514.425, 1334.840, 2109.577 and 1006.332 for the United States, Japan, Germany, France and Spain, respectively. (VIF greater than 5 is usually an indication of a multicollinearity problem.) This implies a major multicollinearity problem for the independent variables. A Pearson correlation analysis further reinforced this position. Hence, simple linear regression was conducted for each of these countries.

Table 235
Regression Analysis of the United States, Japan, Germany, France, Spain & FDI Cuba

ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
	Regression	618.385	5	123.677	.978	.523
	Residual	505.715	4	126.429		
	Total	1124.100	9			

a. Predictors: (Constant), SPAIN, USA, JAPAN, GERMANY, FRANCE
b. Dependent Variable: FDICUBA

Table 236

Regression Coefficient of the United States, Japan, Germany, France, Spain & FDI Cuba

Coefficients

		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
Model		B	Std. Error	Beta			Tolerance	VIF
	(Constant)	1.866	19.762		.094	.929		
	USA	-9.889E-10	.000	-6.598	-.801	.468	.002	603.925
	JAPAN	-1.655E-09	.000	-4.308	-.566	.601	.002	514.425
	GERMANY	1.015E-08	.000	14.501	1.183	.302	.001	1334.840
	FRANCE	-8.109E-09	.000	-8.807	-.572	.598	.000	2109.577
	SPAIN	7.561E-09	.000	5.768	.542	.616	.001	1006.332

a. Dependent Variable: FDICUBA

A simple linear regression analysis between FDI Cuba and Fuel Imports for the United States did not revealed a significant relationship (β = 0.0000, p-value = 0.100) (Tables 237 and 238). Therefore, there was not a significant correlation between the FDI to Cuba and Fuel Imports for the United States, implying the null hypothesis was not rejected for this country. The fact that there was no significant relationship was reinforcing the existing trade embargo (Mesa-Lago, 2001).

Table 237

Regression Analysis of United States & FDI Cuba

ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	339.416	1	339.416	3.460	.100
	Residual	784.684	8	98.085		
	Total	1124.100	9			

a. Predictors: (Constant), USA

b. Dependent Variable: FDICUBA

Table 238

Regression Coefficient Analysis of United States & FDI Cuba

Coefficients

		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
Model		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	-2.815	6.462		-.436	.675		
	USA	8.236E-11	.000	.549	1.860	.100	1.000	1.000

a. Dependent Variable: FDICUBA

A simple linear regression analysis between FDI Cuba and Fuel Imports for Japan did not revealed a significant relationship (β = 0.0000, p-value = 0.090) (Tables 239 and 240). Therefore, there was not a significant correlation between the FDI to Cuba and Fuel Imports for Japan, implying the null hypothesis was not rejected for this country. Fuel Imports for Japan is not inversely related to the FDI of Cuba since Cuba receives most of its fuel from Venezuela;

even though, Japan is a trading partner (Mesa-Lago, 2005).

Table 239
Regression Analysis of Japan & FDI Cuba

ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	356.970	1	356.970	3.723	.090
	Residual	767.130	8	95.891		
	Total	1124.100	9			

a. Predictors: (Constant), JAPAN
b. Dependent Variable: FDICUBA

Table 240
Regression Coefficient Analysis of Japan & FDI Cuba

Coefficients

		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
Model		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	-4.270	6.934		-.616	.555		
	JAPAN	2.165E-10	.000	.564	1.929	.090	1.000	1.000

a. Dependent Variable: FDICUBA

A simple linear regression analysis between FDI Cuba and Fuel Imports for Germany did not revealed a significant relationship (β = 0.0000, p-value = 0.085) (Tables 241 and 242). Therefore, there was not a significant correlation between the FDI to Cuba and Fuel Imports for Germany, implying the null hypothesis was not rejected for this country. Fuel Imports for Germany is not inversely related to the FDI of Cuba since Cuba receives most of its fuel from Venezuela; even though, Germany is a trading partner (Mesa-Lago, 2005).

Table 241
Regression Analysis of Germany & FDI Cuba

ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	365.989	1	365.989	3.862	.085
	Residual	758.111	8	94.764		
	Total	1124.100	9			

a. Predictors: (Constant), GERMANY
b. Dependent Variable: FDICUBA

Table 242
Regression Coefficient Analysis of Germany & FDI Cuba

Coefficients

		Unstandardized Coefficients		Standardized Coefficients	T	Sig.	Collinearity Statistics	
Model		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	-3.835	6.628		-.579	.579		
	GERMANY	3.994E-10	.000	.571	1.965	.085	1.000	1.000

a. Dependent Variable: FDICUBA

A simple linear regression analysis between FDI Cuba and Fuel Imports for France did not revealed a significant relationship (β = 0.0000, p-value = 0.093)

(Tables 243 and 244). Therefore, there was not a significant correlation between the FDI to Cuba and Fuel Imports for France, implying the null hypothesis was not rejected for this country. As a reasonable result, Cuba receives most of its fuel from Venezuela; even though, France is a trading partner mostly in the commercial banking and the beverage industry (Mesa-Lago, 2005) (Chloe, 2008).

Table 243
Regression Analysis of France & FDI Cuba

ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	352.106	1	352.106	3.649	.093
	Residual	771.994	8	96.499		
	Total	1124.100	9			

a. Predictors: (Constant), FRANCE
b. Dependent Variable: FDICUBA

Table 244
Regression Coefficient Analysis of France & FDI Cuba

Coefficients

		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
Model		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	-3.938	6.839		-.576	.581		
	FRANCE	5.153E-10	.000	.560	1.910	.093	1.000	1.000

a. Dependent Variable: FDICUBA

A simple linear regression analysis between FDI Cuba and Fuel Imports for Spain did not revealed a significant relationship (β = 0.0000, p-value = 0.089) (Tables 245 and 246). Therefore, there was not a significant correlation between the FDI to Cuba and Fuel Imports for Spain, implying the null hypothesis was not rejected for this country. As a reasonable result, Cuba receives most of its fuel from Venezuela; even though, Spain is major trading partner mostly in the commercial banking and the hotel industry (Mesa-Lago, 2005) (Chloe, 2008).

Table 245
Regression Analysis of Spain & FDI Cuba

ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	358.597	1	358.597	3.748	.089
	Residual	765.503	8	95.688		
	Total	1124.100	9			

a. Predictors: (Constant), SPAIN
b. Dependent Variable: FDICUBA

Table 246
Regression Coefficient Analysis of Spain & FDI Cuba

Coefficients

		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
Model		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	-3.423	6.525		-.525	.614		
	SPAIN	7.404E-10	.000	.565	1.936	.089	1.000	1.000

a. Dependent Variable: FDICUBA

Results for Category II (Developing Countries) Using the Second Independent Variable, Energy Use

The multiple regression analysis, with FDI to Cuba as the dependent variable and Energy Use for the developing countries, China, India and the Russian Federation as the independent variables, did not revealed a significant relationship. From the ANOVA, the F-value = 2.552 with a p-value = 0.169 implying that the model was not significant (Table 247). This was also seen from the multiple regression analysis where the beta coefficients were not significant, implying the null hypothesis was not rejected for these countries (Table 248). Therefore, there was not a significant correlation between the FDI to Cuba and

Energy Use for these developing countries, China, India and the Russian Federation. From the collinearity diagnostics, the variance inflation factor (VIF) was 13.253, 30.629 and 16.339 for China, India and the Russian Federation, respectively, which implied a major multicollinearity problem. (As stated before a VIF greater than 5 is usually an indication of a multicollinearity problem.) This implies that the three independent variables are highly correlated and cannot be utilized for multiple regression analysis. Simple linear regression was conducted for each of these countries.

Table 247
Regression Analysis of Russian Federation, China, India & FDI Cuba

ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	621.909	3	207.303	2.552	.169
	Residual	406.091	5	81.218		
	Total	1028.000	8			

a. Predictors: (Constant), RUSSIA, CHINA, INDIA
b. Dependent Variable: FDICUBA

Table 248
Regression Coefficient Analysis of Russian Federation, China, India & FDI Cuba

Coefficients

		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
Model		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	38.781	173.498		.224	.832		
	CHINA	5.329E-02	.053	1.034	1.010	.359	.075	13.253
	INDIA	.695	.734	1.473	.947	.387	.033	30.629
	RUSSIA	-9.500E-02	.053	-2.032	-1.789	.134	.061	16.339

a. Dependent Variable: FDICUBA

A simple linear regression analysis between FDI Cuba and Energy Use for China did not revealed a significant relationship (β = 0.0293, p-value = 0.111) (Tables 249 and 250). Therefore, there was not a significant correlation between the FDI to Cuba and Energy Use for China, implying the null hypothesis was not rejected for this country. The result is relevant that there is no correlation between the FDI to Cuba and Energy Use for China since China has recently (2003) began investing in Cuba’s energy supply (Chloe, 2008)(Mesa-Lago, 2005).

Table 249
Regression Analysis of China & FDI Cuba

ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	331.459	1	331.459	3.331	.111
	Residual	696.541	7	99.506		
	Total	1028.000	8			

a. Predictors: (Constant), CHINA
b. Dependent Variable: FDICUBA

Table 250
Regression Coefficient Analysis of China & FDI Cuba

Coefficients

		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
Model		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	-24.107	17.186		-1.403	.203		
	CHINA	2.927E-02	.016	.568	1.825	.111	1.000	1.000

a. Dependent Variable: FDICUBA

A simple linear regression analysis between FDI Cuba and Energy Use for India did not revealed a significant relationship (β = 0.235, p-value = 0.172) (Tables 251 and 252). Therefore, there was not a significant correlation between the FDI to Cuba and Energy Use for India, implying the null hypothesis was not rejected for this country. As reasonable result, India has just recently begun investing in Cuba’s energy supply (Cuba economy, 2008).

Table 251

Regression Analysis of India & FDI Cuba

ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
	Regression	255.253	1	255.253	2.312	.172
	Residual	772.747	7	110.392		
	Total	1028.000	8			

a. Predictors: (Constant), INDIA
b. Dependent Variable: FDICUBA

Table 252

Regression Coefficient Analysis of India & FDI Cuba

Coefficients

		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
Model		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	-102.884	72.129		-1.426	.197		
	INDIA	.235	.155	.498	1.521	.172	1.000	1.000

a. Dependent Variable: FDICUBA

A simple linear regression analysis between FDI Cuba and Energy Use for the Russian Federation did not revealed a significant relationship (β = 0.0165, p-value = 0.352) (Tables 253 and 254). Therefore, there was not a significant correlation between the FDI to Cuba and Energy Use for the Russian Federation, implying the null hypothesis was not rejected for this country. The result not being relevant is surprising since the Russian Federation has a long economic and political relationship with Cuba in providing FDI investment; however, most of Cuba’s energy (oil) is being supplied by Venezuela. (Mesa-Lago, C. 2001) (Mesa-Lago, C. 2005).

Table 253
Regression Analysis of Russian Federation & FDI Cuba

ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	127.644	1	127.644	.992	.352
	Residual	900.356	7	128.622		
	Total	1028.000	8			

a. Predictors: (Constant), RUSSIA
b. Dependent Variable: FDICUBA

Table 254
Regression Coefficient Analysis of Russian Federation & FDI Cuba

Coefficients

		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
Model		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	-64.778	71.817		-.902	.397		
	RUSSIA	1.647E-02	.017	.352	.996	.352	1.000	1.000

a. Dependent Variable: FDICUBA

Results for Category II (Developing Countries) Using the Second Independent Variable, Fuel Imports

The multiple regression analysis, with FDI to Cuba as the dependent variable and Fuel Imports for the developing countries, China, India and the Russian

Federation as the independent variables, did revealed a significant positive relationship. From the ANOVA, the F-value = 8.303 with a p-value = 0.015 implying that the model was significant (Table 255). This was also seen from the multiple regression analysis where three beta coefficients were significant, implying the null hypothesis was rejected for these countries (Table 256). The analysis was not relevant due to the multicollinearity problem. From the collinearity diagnostics, the variance inflation factor (VIF) was 88.128, 81.080 and 1.980 for China, India and the Russian Federation, respectively, implying a major multicollinearity problem for China and India. (As stated before a VIF greater than 5 is usually an indication of a multicollinearity problem.) This implies the independent variables were highly correlated and were not valid for multiple regression analysis. Simple linear regression was conducted for each of these countries.

Table 255
Regression Analysis of Russian Federation, China, India & FDI Cuba

ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	905.886	3	301.962	8.303	.015
	Residual	218.214	6	36.369		
	Total	1124.100	9			

a. Predictors: (Constant), RUSSIA, INDIA, CHINA
b. Dependent Variable: FDICUBA

Table 256
Regression Coefficient Analysis of Russian Federation, China, India & FDI Cuba

Coefficients

		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
Model		B	Std. Error	Beta			Tolerance	VIF
	(Constant)	56.491	15.402		3.668	.010		
	CHINA	2.040E-09	.000	4.891	2.896	.027	.011	88.128
	INDIA	-2.470E-09	.000	-3.749	-2.315	.060	.012	81.080
	RUSSIA	-1.002E-07	.000	-.919	-3.631	.011	.505	1.980

a. Dependent Variable: FDICUBA

A simple linear regression analysis between FDI Cuba and Fuel Imports for China did not revealed a significant relationship (β = 0.0000, p-value = 0.070) (Tables 257 and 258). Therefore, there was not a significant correlation between the FDI to Cuba and Fuel Imports for China, implying the null hypothesis was not rejected for this country. The result is relevant since Cuba's FDI investment from Fuel Import is impacted by Venezuelan oil (Mesa-Lago, C. 2005).

Table 257

Regression Analysis of China & FDI Cuba

ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	396.916	1	396.916	4.367	.070
	Residual	727.184	8	90.898		
	Total	1124.100	9			

a. Predictors: (Constant), CHINA

b. Dependent Variable: FDICUB

Table 258

Regression Coefficient Analysis of China & FDI Cuba

Coefficients

		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
Model		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	.392	4.617		.085	.934		
	CHINA	2.478E-10	.000	.594	2.090	.070	1.000	1.000

a. Dependent Variable: FDICUBA

A simple linear regression analysis between FDI Cuba and Fuel Imports for India did not revealed a significant relationship (β = 0.0000, p-value = 0.085) (Tables 259 and 260). Therefore, there was not a significant correlation between the FDI to Cuba and Fuel Imports for India, implying the null hypothesis was not rejected for this country. The result is relevant since Cuba's FDI investment from Fuel Import is impacted by Venezuelan oil (Mesa-Lago, C. 2005).

Table 259
Regression Analysis of India & FDI Cuba

ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	365.257	1	365.257	3.851	.085
	Residual	758.843	8	94.855		
	Total	1124.100	9			

a. Predictors: (Constant), INDIA
b. Dependent Variable: FDICUBA

Table 260
Regression Coefficient Analysis of India & FDI Cuba

Coefficients

		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
Model		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	-1.386	5.561		-.249	.810		
	INDIA	3.756E-10	.000	.570	1.962	.085	1.000	1.000

a. Dependent Variable: FDICUBA

A simple linear regression analysis between FDI Cuba and Fuel Imports for the Russian Federation did not revealed a significant relationship (β = 0.0000, p-value = 0.913) (Tables 261 and 262). Therefore, there was not a significant correlation between the FDI to

Cuba and Fuel Imports for the Russian Federation, implying the null hypothesis was not rejected for this country. The result is relevant since Cuba's FDI investment from Fuel Import is impacted by Venezuelan oil (Mesa-Lago, C. 2005).

Table 261
Regression Analysis of Russian Federation & FDI Cuba

ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	1.800	1	1.800	.013	.913
	Residual	1122.300	8	140.287		
	Total	1124.100	9			

a. Predictors: (Constant), RUSSIA
b. Dependent Variable: FDICUBA

Table 262
Regression Coefficient Analysis of Russian Federation & FDI Cuba

Coefficients

		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
Model		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	9.842	19.276		.511	.623		
	RUSSIA	-4.362E-09	.000	-.040	-.113	.913	1.000	1.000

a. Dependent Variable: FDICUBA

Results for Category III (Least Developed Countries) Using the Third Independent Variable, Energy Use

For the third category of countries, multiple regression analysis was done for FDI to Cuba as the

dependent variable and Energy Use for the least Developing countries, Jamaica, Haiti, Peru and Nepal as the independent variables. Madagascar was not tested based on insufficient data. This analysis did not revealed a significant relationships with FDI to Cuba (F value = 3.787 with a p-value = 0.113) (Table 263). Again, the beta coefficients were not significant, implying the null hypothesis was not rejected for these countries (Table 264). Therefore, there was not a significant correlation between the FDI to Cuba and Energy Use for the least developing countries of Jamaica, Haiti, Peru and Nepal. Surprisingly, all four countries were not highly correlated based on their VIF (variance inflation factor) of 1.497, 1.157, 1.065 and 1.482 for Jamaica, Haiti, Peru and Nepal, respectively. (VIF greater than 5 is usually an indication of a multicollinearity problem.) A Pearson correlation analysis was also done and reinforced the significant correlation with Haiti. For consistency, simple linear regression was conducted for each of these countries.

Table 263
Regression Analysis of Jamaica, Haiti, Peru, Nepal & FDI Cuba

ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	813.262	4	203.316	3.787	.113
	Residual	214.738	4	53.684		
	Total	1028.000	8			

a. Predictors: (Constant), NEPAL, PERU, HAITI, JAMAICA
b. Dependent Variable: FDICUBA

Table 264
Regression Coefficient Analysis of Jamaica, Haiti, Peru, Nepal & FDI Cuba

Coefficients

		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
Model		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	-99.735	123.607		-.807	.465		
	JAMAICA	5.363E-02	.037	.400	1.432	.225	.668	1.497
	HAITI	.558	.215	.637	2.592	.061	.865	1.157
	PERU	.201	.123	.388	1.643	.176	.939	1.065
	NEPAL	-.640	.391	-.455	-1.637	.177	.675	1.482

a. Dependent Variable: FDICUBA

A simple linear regression analysis between FDI Cuba and Energy Use for Jamaica did not revealed a significant relationship (β = 0.0376, p-value = 0.464) (Tables 265 and 266). Therefore, there was not a significant correlation between the FDI to Cuba and Energy Use for Jamaica, implying the null hypothesis was not rejected for this country.

Table 265
Regression Analysis of Jamaica & FDI Cuba

ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	81.096	1	81.096	.600	.464
	Residual	946.904	7	135.272		
	Total	1028.000	8			

a. Predictors: (Constant), JAMAICA
b. Dependent Variable: FDICUBA

Table 266
Regression Coefficient Analysis of Jamaica & FDI Cuba

Coefficients

		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
Model		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	-50.746	74.252		-.683	.516		
	JAMAICA	3.763E-02	.049	.281	.774	.464	1.000	1.000

a. Dependent Variable: FDICUBA

A simple linear regression analysis between FDI Cuba and Energy Use for Haiti revealed a significant positive relationship (β = 0.616, p-value = 0.034) (Tables 267 and 268). Therefore, there was a significant positive relationship between the FDI to Cuba and Energy Use for Haiti, implying the null hypothesis was rejected for this country. This was a surprising result.

Table 267

Regression Analysis of Haiti & FDI Cuba

ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	508.666	1	508.666	6.856	.034
	Residual	519.334	7	74.191		
	Total	1028.000	8			

a. Predictors: (Constant), HAITI

b. Dependent Variable: FDICUBA

Table 268

Regression Coefficient Analysis of Haiti & FDI Cuba

Coefficients

		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
Model		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	-148.924	59.491		-2.503	.041		
	HAITI	.616	.235	.703	2.618	.034	1.000	1.000

a. Dependent Variable: FDICUBA

A simple linear regression analysis between FDI Cuba and Energy Use for Peru did not revealed a significant relationship (β = 0.261, p-value = 0.167) (Tables 269 and 270). Therefore, there was not a significant correlation between the FDI to Cuba and Energy Use for Peru, implying the null hypothesis was not rejected for this country.

Table 269

Regression Analysis of Peru & FDI Cuba

ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	260.319	1	260.319	2.374	.167
	Residual	767.681	7	109.669		
	Total	1028.000	8			

a. Predictors: (Constant), PERU

b. Dependent Variable: FDICUBA

Table 270

Regression Coefficient Analysis of Peru & FDI Cuba

Coefficients

		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
Model		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	-118.714	81.455		-1.457	.188		
	PERU	.261	.170	.503	1.541	.167	1.000	1.000

a. Dependent Variable: FDICUBA

A simple linear regression analysis between FDI Cuba and Energy Use for Nepal did not revealed a significant relationship (β = -0.110, p-value = 0.842) (Tables 271 and 272). Therefore, there was not a significant correlation between the FDI to Cuba and Energy Use for Nepal, implying the null hypothesis was not rejected for this country.

Table 271
Regression Analysis of Nepal & FDI Cuba

ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	6.248	1	6.248	.043	.842
	Residual	1021.752	7	145.965		
	Total	1028.000	8			

a. Predictors: (Constant), NEPAL
b. Dependent Variable: FDICUBA

Table 272
Regression Coefficient Analysis of Nepal & FDI Cuba

Coefficients

		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
Model		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	43.132	176.297		.245	.814		
	NEPAL	-.110	.530	-.078	-.207	.842	1.000	1.000

a. Dependent Variable: FDICUBA

Results for Category III (Least Developed Countries) Using the Third Independent Variable, Fuel Imports

For the third category of countries, multiple regression analysis was done for FDI to Cuba as the dependent variable and Fuel Imports for the least Developing countries, Jamaica, Peru, Madagascar, and Nepal as the independent variables. Haiti was not tested based on insufficient data. This analysis did not revealed any significant relationships with FDI to Cuba (F value = 2.794 with a p-value = 0.145) (Table 273). Again, the beta coefficients were not significant, implying the null hypothesis was not rejected for these countries (Table 274). Therefore, there was not a significant correlation between the FDI to Cuba and Fuel Imports for the least developing countries of Jamaica, Peru, Madagascar, and Nepal. Like above, Fuel Imports for two of the four countries were not highly correlated with VIFs (variance inflation factor) of 8.708, 15.880, 4.558, and 1.183 for Jamaica, Peru, Madagascar and Nepal, respectively. (VIF greater than 5 is usually an indication of a multicollinearity problem.) A correlation analysis was also done and reinforced with the low and high correlation among these variables. Simple linear regression was conducted for each of these countries.

Table 273
Regression Analysis of Jamaica, Haiti, Peru Madagascar and Nepal & FDI Cuba

ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	776.631	4	194.158	2.794	.145
	Residual	347.469	5	69.494		
	Total	1124.100	9			

a. Predictors: (Constant), NEPAL, JAMAICA, MADAGASC, PERU
b. Dependent Variable: FDICUBA

Table 274
Regression Coefficient Analysis of Jamaica, Haiti, Peru, Madagascar and Nepal & FDI Cuba

Coefficients

		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
Model		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	14.221	11.575		1.229	.274		
	JAMAICA	-9.930E-09	.000	-.131	-.178	.866	.115	8.708
	PERU	3.363E-09	.000	.247	.250	.813	.063	15.880
	MADAGASC	-1.466E-07	.000	-.589	-1.109	.318	.219	4.558
	NEPAL	-3.819E-04	.000	-.276	-1.020	.354	.845	1.183

a. Dependent Variable: FDICUBA

A simple linear regression analysis between FDI Cuba and Fuel Imports for Jamaica did not revealed a significant relationship (β = 0.0000, p-value = 0.236) (Tables 275 and 276). Therefore, there was not a significant correlation between the FDI to Cuba and Fuel Imports for Jamaica, implying the null hypothesis was not rejected for this country.

Table 275

Regression Analysis of Jamaica & FDI Cuba

ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	191.357	1	191.357	1.641	.236
	Residual	932.743	8	116.593		
	Total	1124.100	9			

a. Predictors: (Constant), JAMAICA

b. Dependent Variable: FDICUBA

Table 276

Regression Coefficient Analysis of Jamaica & FDI Cuba

Coefficients

		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
Model		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	.625	6.493		.096	.926		
	JAMAICA	3.133E-08	.000	.413	1.281	.236	1.000	1.000

a. Dependent Variable: FDICUBA

A simple linear regression analysis between FDI Cuba and Fuel Imports for Peru did not revealed a significant, but a marginal relationship (β = 0.0000, p-value = 0.060) (Tables 277 and 278). Therefore, there was marginally significant positive correlation between the FDI to Cuba and Fuel Imports for Peru, implying the null hypothesis was marginally rejected for this country. Surprisingly, there is no evidence of Peru conducting FDI investment in Cuba.

Table 277

Regression Analysis of Peru & FDI Cuba

ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	422.185	1	422.185	4.812	.060
	Residual	701.915	8	87.739		
	Total	1124.100	9			

a. Predictors: (Constant), PERU
b. Dependent Variable: FDICUBA

Table 278

Regression Coefficient Analysis of Peru & FDI Cuba

Coefficients

		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
Model		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	-1.710	5.213		-.328	.751		
	PERU	8.335E-09	.000	.613	2.194	.060	1.000	1.000

a. Dependent Variable: FDICUBA

A simple linear regression analysis between FDI Cuba and Fuel Imports for Madagascar revealed a significant negative relationship (β = 0.0000, p-value = 0.006) (Tables 279 and 280). Therefore, there was a significant negative correlation between the FDI to Cuba and Fuel Imports for Madagascar, implying the null hypothesis was rejected for this country. Surprisingly, there is no evidence in the study that Madagascar is conducting FDI investment in Cuba or a correlation between Madagascar's Fuel Import and FDI to Cuba.

Table 279
Regression Analysis of Madagascar & FDI Cuba

ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	703.634	1	703.634	13.388	.006
	Residual	420.466	8	52.558		
	Total	1124.100	9			

a. Predictors: (Constant), MADAGASC
b. Dependent Variable: FDICUBA

Table 280
Regression Coefficient Analysis of Madagascar & FDI Cuba

Coefficients

		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
Model		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	17.180	3.460		4.966	.001		
	MADAGASC	-1.970E-07	.000	-.791	-3.659	.006	1.000	1.000

a. Dependent Variable: FDICUBA

A simple linear regression analysis between FDI Cuba and Fuel Imports for Nepal did not revealed a significant relationship (β = -0.00064, p-value = 0.179) (Tables 281 and 282). Therefore, there was not a significant correlation between the FDI to Cuba and

Fuel Imports for Nepal, implying the null hypothesis was not rejected for this country.

Table 281
Regression Analysis of Nepal & FDI Cuba

ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	240.131	1	240.131	2.173	.179
	Residual	883.969	8	110.496		
	Total	1124.100	9			

a. Predictors: (Constant), NEPAL
b. Dependent Variable: FDICUBA

Table 282
Regression Coefficient Analysis of Nepal & FDI Cuba

Coefficients

		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
Model		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	9.410	3.521		2.673	.028		
	NEPAL	-6.398E-04	.000	-.462	-1.474	.179	1.000	1.000

a. Dependent Variable: FDICUBA

Summary of Results for Hypothesis 5

Category I (Advanced Countries)

The United States, Japan, Germany, France and Spain had an insignificant relationship between FDI inflow to Cuba and Energy Use.

The United States, Japan, Germany, France and Spain had an insignificant relationship between FDI inflow to Cuba and Fuel Imports.

Category II (Developing Countries)

China, India and the Russian Federation had an insignificant relationship between FDI inflow to Cuba and Energy Use.

Multiple regression results are not appropriate when there are multicollinearity problems. China, India and the Russian Federation had an insignificant relationship between FDI inflow to Cuba and Fuel Imports.

Category III (Least Developing Countries)

Significant positive relationship existed between FDI inflow to Cuba and Energy Use for Haiti. Insignificant results were found for Jamaica, Peru and Nepal, while Madagascar was not tested based on insufficient data.

Jamaica and Nepal had an insignificant relationship between FDI inflow to Cuba and Fuel Imports, while Peru showed a positive marginal result. Madagascar revealed a significant negative relationship and Haiti was not tested based on insufficient data.

Results for Hypothesis 6

FDI to Cuba was the dependent variable. For the advanced countries, the independent variables were Transportation and Communication for the United States, Japan, Germany, France and Spain (Sawalha, 2007). The independent variables for the developing countries were Transportation and Communication for China, India and the Russian Federation (Sawalha, 2007). The independent variables for the Least Developed Countries (LCD’s) were Transportation and Communication for Jamaica, Haiti, Peru, Madagascar and Nepal. The Republic of Cuba’s Transportation and Communication was not included in the model as there were only three data points. The Transportation and

Communication hypothesis included three variables, Air Transport (as measured in passenger carried), Fixed Line and Mobile Phone Subscribers (as measured per 100 of the population) and Internet Users (as measured per 100 of the population).

The sixth hypothesis to be tested is:

> Hypothesis H_{06}: The level of contribution of FDI inflow to Cuba is not significantly related to the Transportation and Communication for the three groups of countries.
>
> Hypothesis H_{A6}: The level of contribution of FDI inflow to Cuba is significantly related to the Transportation and Communication for the three groups of countries.

The multiple regression models to test Hypothesis 6 are listed below.

Category I (Advanced Countries)

$$FDI_{CUBA} = \alpha_O + \alpha_1 TRANSPCOMMUNICATE_{US} + \alpha_2 TRANSPCOMMUNICATE_{Japan} + \alpha_3 TRANSPCOMMUNICATE_{Germany} + \alpha_4 TRANSPCOMMUNICATE_{France} + \alpha_5 TRANSPCOMMUNICATE_{Spain} + \varepsilon_1$$

Categories II (Developing Countries)

$$FDI_{CUBA} = \beta_O + \beta_1 TRANSPCOMMUNICATE_{China} + \beta_2 TRANSPCOMMUNICATE_{India} + \beta_3 TRANSPCOMMUNICATE_{Russian\ Federation} + \varepsilon_2$$

Categories III (Least Developed Countries)

$$FDI_{CUBA} = \delta o + \delta_1 TRANSPCOMMUNICATE_{Jamaica} + \delta_2 TRANSPCOMMUNICATE_{Haiti} + \delta_3 TRANSPCOMMUNICATE_{Peru} + \delta_4 TRANSPCOMMUNICATE_{Madagascar} + \delta_5 TRANSPCOMMUNICATE_{Nepal} + \varepsilon_3$$

The results were presented for the three independent variables, Air Transport, Fixed Line and Mobile Phone

Subscribers and Internet Users for each of the three categories of countries.

Results for the Independent Variable, Air Transport (as Measured in Passengers Carried)

Pearson Correlation Analysis

A Pearson correlation analysis among the advanced, developing and least developed of the 13 non oil-producing countries did not revealed a significant correlation between Air Transport and the FDI of Cuba (Table 283).

Table 283
Pearson Correlation Analysis for FDI Cuba and Air Transport for all the Countries in the Study

FDI Cuba Pearson Correlation Sig. (2-Tailed) N	USA	Japan	Germany	France	Spain	China	India	Russian Federation
	0.200 0.634 8	-0.551 0.157 8	0.105 0.804 8	-0.285 0.494 8	-0.081 0.848 8	0.224 0.595 8	0.294 0.480 8	0.071 0.867 8
Jamaica	Haiti	Peru	Madagascar	Nepal				
-0.688 0.059 8	No Data	0.662 0.074 8	0.184 0.663 8	0.275 0.509 8				

Results for Category I (Advanced Countries) Using the First Independent Variable, Air Transport

The multiple regression analysis, with FDI of Cuba as the dependent variable and Air Transport for the advanced countries, the United States, Japan, Germany, France and Spain as the independent variables, did not revealed a significant relationships. From the ANOVA, the F-value = 0.285 with a p-value = 0.888 implying that the model was not significant (Table 284). This was also seen from the multiple regression analysis where the beta coefficients were not significant, implying the null hypothesis was not rejected for these countries (Table 285). Therefore, there was not a significant correlation between the FDI of Cuba and Air Transport for these advanced countries, the United States, Japan, Germany, France and Spain. From the collinearity diagnostics, the variance inflation factor (VIF) was 10.466, 16.764, 19.202, 22.193 and 12.741 for the United States, Japan, Germany, France and Spain, respectively. (VIF greater than 5 is usually an indication of a multicollinearity problem.) This implies that there was a major multicollinearity problem with the five independent variables. A correlation analysis further reinforced this position. Hence, simple linear regression was conducted for each of these countries.

Table 284
Regression Analysis of the United States, Japan, Germany, France, Spain & FDI Cuba

ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	252.707	5	50.541	.285	.888
	Residual	354.793	2	177.396		
	Total	607.500	7			

a. Predictors: (Constant), SPAIN, JAPAN, USA, GERMANY, FRANCE
b. Dependent Variable: FDICUBA

Table 285
Regression Coefficient of the United States, Japan, Germany, France, Spain & FDI Cuba

Coefficients

		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
Model		B	Std. Error	Beta			Tolerance	VIF
	(Constant)	171.645	566.877		.303	.791		
	USA	8.840E-08	.000	.452	.259	.820	.096	10.466
	JAPAN	-1.802E-06	.000	-.620	-.280	.806	.060	16.764
	GERMANY	-2.827E-07	.000	-.444	-.188	.869	.052	19.202
	FRANCE	-2.888E-07	.000	-.102	-.040	.972	.045	22.193
	SPAIN	-3.510E-08	.000	-.022	-.012	.992	.078	12.741

a. Dependent Variable: FDICUBA

A simple linear regression analysis between FDI Cuba and Air Transport for the United States did not revealed a significant relationship (β = 0.0000, p-value = 0.634). Therefore, there was not a significant correlation between the FDI to Cuba and Air Transport for the United States, implying the null hypothesis was not rejected for this country (Tables 286 and 287).

Table 286
Regression Analysis of the United States & FDI Cuba

ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	24.390	1	24.390	.251	.634
	Residual	583.110	6	97.185		
	Total	607.500	7			

a. Predictors: (Constant), USA
b. Dependent Variable: FDICUBA

Table 287
Regression Coefficient Analysis of the United States & FDI Cuba

Coefficients

		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
Model		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	-20.717	49.961		-.415	.693		
	USA	3.919E-08	.000	.200	.501	.634	1.000	1.000

a. Dependent Variable: FDICUBA

A simple linear regression analysis between FDI Cuba and Air Transport for Japan did not revealed a significant relationship (β = 0.0000, p-value = 0.157). Therefore, there was not a significant correlation between the FDI to Cuba and Air Transport for Japan, implying the null hypothesis was not rejected for this country (Tables 288 and 289).

Table 288
Regression Analysis of Japan & FDI Cuba

ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	184.165	1	184.165	2.610	.157
	Residual	423.335	6	70.556		
	Total	607.500	7			

a. Predictors: (Constant), JAPAN
b. Dependent Variable: FDICUBA

Table 289
Regression Coefficient Analysis of Japan & FDI Cuba

Coefficients

		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
Model		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	172.701	104.307		1.656	.149		
	JAPAN	-1.601E-06	.000	-.551	-1.616	.157	1.000	1.000

a. Dependent Variable: FDICUBA

A simple linear regression analysis between FDI Cuba and Air Transport for Germany did not revealed a significant relationship (β = 0.0000, p-value = 0.804) (Tables 290 and 291). Therefore, there was not a significant correlation between the FDI to Cuba and Air Transport for Germany, implying the null hypothesis was not rejected for this country.

Table 290
Regression Analysis of Germany & FDI Cuba

ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	6.717	1	6.717	.067	.804
	Residual	600.783	6	100.131		
	Total	607.500	7			

a. Predictors: (Constant), GERMANY
b. Dependent Variable: FDICUBA

Table 291
Regression Coefficient Analysis of Germany & FDI Cuba

Coefficients

		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
Model		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	-.148	17.344		-.009	.993		
	GERMANY	6.692E-08	.000	.105	.259	.804	1.000	1.000

a. Dependent Variable: FDICUBA

A simple linear regression analysis between FDI Cuba and Air Transport for France did not revealed a significant relationship (β = 0.0000, p-value = 0.494) (Tables 292 and 293). Therefore, there was not a significant correlation between the FDI to Cuba and Air Transport for France, implying the null hypothesis was not rejected for this country.

Table 292
Regression Analysis of France & FDI Cuba

ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	49.331	1	49.331	.530	.494
	Residual	558.169	6	93.028		
	Total	607.500	7			

a. Predictors: (Constant), FRANCE
b. Dependent Variable: FDICUBA

Table 293
Regression Coefficient Analysis of France & FDI Cuba

Coefficients

		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
Model		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	43.640	54.200		.805	.451		
	FRANCE	-8.030E-07	.000	-.285	-.728	.494	1.000	1.000

a. Dependent Variable: FDICUBA

A simple linear regression analysis between FDI Cuba and Air Transport for Spain did not revealed a significant relationship (β = 0.0000, p-value = 0.848) (Tables 294 and 295). Therefore, there was not a significant correlation between the FDI to Cuba and Air Transport for Spain, implying the null hypothesis was not rejected for this country.

Table 294
Regression Analysis of Spain & FDI Cuba

ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	4.030	1	4.030	.040	.848
	Residual	603.470	6	100.578		
	Total	607.500	7			

a. Predictors: (Constant), SPAIN
b. Dependent Variable: FDICUBA

Table 295
Regression Coefficient Analysis of Spain & FDI Cuba

Coefficients

		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
Model		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	9.444	26.189		.361	.731		
	SPAIN	-1.280E-07	.000	-.081	-.200	.848	1.000	1.000

a. Dependent Variable: FDICUBA

Pearson Correlation Analysis

A Pearson correlation analysis among the advanced, developing and least developed of the 13 non oil-producing countries did not revealed a significant correlation of Fixed Line and Mobile Phone Subscribers with the FDI of Cuba (Table 296).

Table 296

Pearson Correlation analysis for FDI Cuba and Fixed Line and Mobile Phone Subscribers for all the Countries in the Study

FDI Cuba	USA	Japan	Germany	France	Spain	China	India	Russian Federation	Jamaica	Haiti	Peru	Madagascar	Nepal
Pearson Correlation	-0.562	-0.537	-0.610	-0.573	-0.614	-0.389	-0.354	-0.202	-0.344	-0.396	-0.331	-0.321	-0.332
Sig. (2-Tailed)	0.189	0.214	0.145	0.178	0.142	0.388	0.435	0.665	0.450	0.379	0.468	0.482	0.467
N	7	7	7	7	7	7	7	7	7	7	7	7	7

Results for Category I (Advanced Countries) Using the First Independent Variable, Fixed Line and Mobile Phone Subscribers

The multiple regression analysis, with FDI to Cuba as the dependent variable and Fixed Line and Mobile Phone Subscribers for the advanced countries, the United States, Japan, Germany, France and Spain as the independent variables, did not revealed a significant relationships. From the ANOVA, the F-value = 0.434 with a p-value = 0.810, implying that the model was not significant (Table 297). This was also seen from the multiple regression analysis where the beta coefficients were not significant, implying the null hypothesis was not rejected for these countries (Table 298). Therefore, there was not a significant correlation between the FDI to Cuba and Fixed Line and Mobile Phone Subscribers for these advanced countries, the United States, Japan, Germany, France and Spain. From the collinearity diagnostics, the variance inflation factor (VIF) was 193.038, 110.973, 72.786, 166.963 and 150.515 for the United States, Japan, Germany, France and Spain, respectively. (VIF greater than 5 is usually an indication of a multicollinearity problem.) This implies a major multicollinearity problem for the independent variables. A Pearson correlation analysis further reinforced this position. Hence, simple linear regression was conducted for each of these countries.

Table 297

Regression Analysis of the United States, Japan, Germany, France, Spain & FDI Cuba

ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	307.911	5	61.582	.434	.810
	Residual	141.803	1	141.803		
	Total	449.714	6			

a. Predictors: (Constant), SPAIN, JAPAN, GERMANY, FRANCE, USA
b. Dependent Variable: FDICUBA

Table 298

Regression Coefficient of the United States, Japan, Germany, France, Spain & FDI Cuba

Coefficients

		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
Model		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	-100.483	202.124		-.497	.706		
	USA	-1.995	5.898	-2.639	-.338	.792	.005	193.038
	JAPAN	2.826	4.522	3.696	.625	.644	.009	110.973
	GERMANY	-.295	1.396	-1.013	-.211	.867	.014	72.786
	FRANCE	2.022	3.294	4.453	.614	.650	.006	166.963
	SPAIN	-1.555	2.110	-5.078	-.737	.596	.007	150.515

a. Dependent Variable: FDICUBA

A simple linear regression analysis between FDI Cuba and Fixed Line and Mobile Phone Subscribers for the United States did not revealed a significant relationship (β = -0.425, p-value = 0.189) (Tables 299 and 300). Therefore, there was not a significant correlation between the FDI to Cuba and Fixed Line and

Mobile Phone Subscribers for the United States, implying the null hypothesis was not rejected for this country.

Table 299
Regression Analysis of United States & FDI Cuba

ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	142.260	1	142.260	2.314	.189
	Residual	307.455	5	61.491		
	Total	449.714	6			

a. Predictors: (Constant), USA
b. Dependent Variable: FDICUBA

Table 300
Regression Coefficient Analysis of United States & FDI Cuba

Coefficients

		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
Model		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	48.979	30.654		1.598	.171		
	USA	-.425	.280	-.562	-1.521	.189	1.000	1.000

a. Dependent Variable: FDICUBA

A simple linear regression analysis between FDI Cuba and Fixed Line and Mobile Phone Subscribers for Japan did not revealed a significant relationship (β = -0.411, p-value = 0.214) (Tables 301 and 302).

Therefore, there was not a significant relationship between the FDI to Cuba and Fixed Line and Mobile Phone Subscribers for Japan, implying the null hypothesis was not rejected for this country.

Table 301
Regression Analysis of Japan & FDI Cuba

ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	129.662	1	129.662	2.026	.214
	Residual	320.052	5	64.010		
	Total	449.714	6			

a. Predictors: (Constant), JAPAN
b. Dependent Variable: FDICUBA

Table 302
Regression Coefficient Analysis of Japan & FDI Cuba

Coefficients

		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
Model		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	45.558	30.354		1.501	.194		
	JAPAN	-.411	.288	-.537	-1.423	.214	1.000	1.000

a. Dependent Variable: FDICUBA

A simple linear regression analysis between FDI Cuba and Fixed Line and Mobile Phone Subscribers for Germany did not revealed a significant relationship ($\beta = -0.178$, p-value = 0.145) (Tables 303 and 304).

Therefore, there was not a significant correlation between the FDI to Cuba and Fixed Line and Mobile Phone Subscribers for Germany, implying the null hypothesis was not rejected for this country.

Table 303
Regression Analysis of Germany & FDI Cuba

ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	167.554	1	167.554	2.969	.145
	Residual	282.161	5	56.432		
	Total	449.714	6			

a. Predictors: (Constant), GERMANY
b. Dependent Variable: FDICUBA

Table 304
Regression Coefficient Analysis of Germany & FDI Cuba

Coefficients

		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
Model		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	24.094	12.809		1.881	.119		
	GERMANY	-.178	.103	-.610	-1.723	.145	1.000	1.000

a. Dependent Variable: FDICUBA

A simple linear regression analysis between FDI Cuba and Fixed Line and Mobile Phone Subscribers for France did not revealed a significant relationship (β = -0.260, p-value = 0.178) (Tables 305 and 306). Therefore, there was not a significant correlation between the FDI to Cuba and Fixed Line and Mobile Phone Subscribers for France, implying the null hypothesis was not rejected for this country.

Table 305
Regression Analysis of France & FDI Cuba

ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	147.857	1	147.857	2.449	.178
	Residual	301.857	5	60.371		
	Total	449.714	6			

a. Predictors: (Constant), FRANCE
b. Dependent Variable: FDICUBA

Table 306
Regression Coefficient Analysis of France & FDI Cuba

Coefficients

		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
Model		B	Std. Error	Beta			Tolerance	VIF
	(Constant)	31.466	18.695		1.683	.153		
	FRANCE	-.260	.166	-.573	-1.565	.178	1.000	1.000

a. Dependent Variable: FDICUBA

A simple linear regression analysis between FDI Cuba and Fixed Line and Mobile Phone Subscribers for Spain did not revealed a significant relationship (β = -0.188, p-value = 0.142) (Tables 307 and 308). Therefore, there was not a significant correlation between the FDI to Cuba and Fixed Line and Mobile

Phone Subscribers for Spain, implying the null hypothesis was not rejected for this country.

Table 307
Regression Analysis of Spain & FDI Cuba

ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	169.787	1	169.787	3.033	.142
	Residual	279.927	5	55.985		
	Total	449.714	6			

a. Predictors: (Constant), SPAIN
b. Dependent Variable: FDICUBA

Table 308
Regression Coefficient Analysis of Spain & FDI Cuba

Coefficients

		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
Model		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	22.387	11.725		1.909	.114		
	SPAIN	-.188	.108	-.614	-1.741	.142	1.000	1.000

a. Dependent Variable: FDICUBA

Pearson Correlation Analysis

A Pearson correlation analysis among the advanced, developing and least developed of the 13 non oil-producing countries revealed a significant correlation of Internet Users with the country of India and the FDI of Cuba (Table 309).

Table 309
Pearson Correlation analysis for FDI Cuba and Internet Users for all the Countries in the Study

FDI Cuba Pearson Correlation Sig. (2-Tailed) N	USA	Japan	Germany	France	Spain	China	India	Russian Federation
	0.280 0.434 10	0.368 0.295 10	0.308 0.386 10	0.382 0.276 10	0.363 0.303 10	0.512 0.130 10	0.684* 0.029 10	0.561 0.091 10
Jamaica	Haiti	Peru	Madagascar	Nepal				
0.483 0.157 10	0.565 0.089 10	0.568 0.087 10	0.246 0.492 10	0.246 0.492 10				

<u>Results for Category I (Advanced Countries) Using the First Independent Variable, Internet Users</u>

The multiple regression analysis, with FDI to Cuba as the dependent variable and Internet Users for the advanced countries, the United States, Japan, Germany, France and Spain as the independent variables, did not revealed a significant relationships. From the ANOVA, the F-value = 2.259 with a p-value = 0.225, implying that the model was not significant (Table 310). This was also seen from the multiple regression analysis where the beta coefficients were not significant, implying the null hypothesis was not rejected for these countries (Table

311). Therefore, there was not a significant correlation between the FDI to Cuba and Internet Users for these advanced countries, the United States, Japan, Germany, France and Spain. From the collinearity diagnostics, the variance inflation factor (VIF) was 190.878, 56.949, 180.828, 83.232 and 36.414 for the United States, Japan, Germany, France and Spain, respectively. (VIF greater than 5 is usually an indication of a multicollinearity problem.) This implies a major multicollinearity problem for the independent variables. A Pearson correlation analysis further reinforced this position. Hence, simple linear regression was conducted for each of these countries.

Table 310
Regression Analysis of the United States, Japan, Germany, France, Spain & FDI Cuba

ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	830.076	5	166.015	2.259	.225
	Residual	294.024	4	73.506		
	Total	1124.100	9			

a. Predictors: (Constant), SPAIN, USA, JAPAN, FRANCE, GERMANY
b. Dependent Variable: FDICUBA

Table 311
Regression Coefficient of the United States, Japan, Germany, France, Spain & FDI Cuba

Coefficients

Model		Unstandardized Coefficients B	Std. Error	Standardized Coefficients Beta	t	Sig.	Collinearity Statistics Tolerance	VIF
1	(Constant)	159.323	64.114		2.485	.068		
	USA	-6.452	2.602	-8.761	-2.480	.068	.005	190.878
	JAPAN	.863	1.051	1.585	.821	.458	.018	56.949
	GERMANY	2.084	1.771	4.046	1.177	.305	.006	180.828
	FRANCE	3.625	1.605	5.270	2.259	.087	.012	83.232
	SPAIN	-1.160	.987	-1.813	-1.175	.305	.027	36.414

a. Dependent Variable: FDICUBA

A simple linear regression analysis between FDI Cuba and Internet Users for the United States did not revealed a significant relationship (β = 0.206, p-value = 0.434) (Tables 312 and 313). Therefore, there was not a significant correlation between the FDI to Cuba and Internet Users for the United States, implying the null hypothesis was not rejected for this country.

Table 312
Regression Analysis of United States & FDI Cuba

ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	87.897	1	87.897	.679	.434
	Residual	1036.203	8	129.525		
	Total	1124.100	9			

a. Predictors: (Constant), USA
b. Dependent Variable: FDICUBA

Table 313
Regression Coefficient Analysis of United States & FDI Cuba

Coefficients

		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
Model		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	-3.956	14.601		-.271	.793		
	USA	.206	.250	.280	.824	.434	1.000	1.000

a. Dependent Variable: FDICUBA

A simple linear regression analysis between FDI Cuba and Internet Users for Japan did not revealed a significant relationship (β = 0.200, p-value = 0.295) (Tables 314 and 315). Therefore, there was not a significant correlation between the FDI to Cuba and Internet Users for Japan, implying the null hypothesis was not rejected for this country.

Table 314
Regression Analysis of Japan & FDI Cuba

ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	152.277	1	152.277	1.254	.295
	Residual	971.823	8	121.478		
	Total	1124.100	9			

a. Predictors: (Constant), JAPAN
b. Dependent Variable: FDICUBA

Table 315
Regression Coefficient Analysis of Japan & FDI Cuba

Coefficients

		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
Model		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	-1.578	8.990		-.176	.865		
	JAPAN	.200	.179	.368	1.120	.295	1.000	1.000

a. Dependent Variable: FDICUBA

A simple linear regression analysis between FDI Cuba and Internet Users for Germany did not revealed a significant relationship (β = 0.159, p-value = 0.386) (Tables 316 and 317). Therefore, there was not a significant correlation between the FDI to Cuba and Internet Users for Germany, implying the null hypothesis was not rejected for this country.

Table 316
Regression Analysis of Germany & FDI Cuba

ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	106.889	1	106.889	.841	.386
	Residual	1017.211	8	127.151		
	Total	1124.100	9			

a. Predictors: (Constant), GERMANY
b. Dependent Variable: FDICUBA

Table 317
Regression Coefficient Analysis of Germany & FDI Cuba

Coefficients

		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
Model		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	.345	8.778		.039	.970		
	GERMANY	.159	.173	.308	.917	.386	1.000	1.000

a. Dependent Variable: FDICUBA

A simple linear regression analysis between FDI Cuba and Internet Users for France did not revealed a significant relationship (β = 0.263, p-value = 0.276) (Tables 318 and 319). Therefore, there was not a significant correlation between the FDI to Cuba and Internet Users for France, implying the null hypothesis was not rejected for this country.

Table 318
Regression Analysis of France & FDI Cuba

ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	164.345	1	164.345	1.370	.276
	Residual	959.755	8	119.969		
	Total	1124.100	9			

a. Predictors: (Constant), FRANCE
b. Dependent Variable: FDICUBA

Table 319
Regression Coefficient Analysis of France & FDI Cuba

Coefficients

Model		Unstandardized Coefficients B	Std. Error	Standardized Coefficients Beta	t	Sig.	Collinearity Statistics Tolerance	VIF
1	(Constant)	-.269	7.639		-.035	.973		
	FRANCE	.263	.225	.382	1.170	.276	1.000	1.000

a. Dependent Variable: FDICUBA

A simple linear regression analysis between FDI Cuba and Internet Users for Spain did not revealed a significant relationship (β = 0.232, p-value = 0.303) (Tables 320 and 321). Therefore, there was not a significant correlation between the FDI to Cuba and Internet Users for Spain, implying the null hypothesis was not rejected for this country.

Table 320
Regression Analysis of Spain & FDI Cuba

ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	147.960	1	147.960	1.213	.303
	Residual	976.140	8	122.018		
	Total	1124.100	9			

a. Predictors: (Constant), SPAIN
b. Dependent Variable: FDICUBA

Table 321

Regression Coefficient Analysis of Spain & FDI Cuba

Coefficients

		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
Model		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	1.156	6.893		.168	.871		
	SPAIN	.232	.211	.363	1.101	.303	1.000	1.000

a. Dependent Variable: FDICUBA

Results for Category II (Developing Countries) Using the Second Independent Variable, Air Transport

The multiple regression analysis, with FDI to Cuba as the dependent variable and Air Transport for the developing countries, China, India and the Russian Federation as the independent variables, did not revealed a significant relationship. From the ANOVA, the F-value = 0.542 with a p-value = 0.679, implying that the model was not significant (Table 322). This was also seen from the multiple regression analysis where the beta coefficients were not significant, implying the null hypothesis was not rejected for these countries (Table 323). Therefore, there was not a significant correlation between the FDI to Cuba and Air Transport for these developing countries, China, India and the Russian Federation. From the collinearity diagnostics, the variance inflation factor (VIF) was 57.393, 22.621 and 16.760 for China, India and the Russian Federation, respectively, which implied a major multicollinearity problem. (As stated before a VIF greater than 5 is usually an indication of a multicollinearity problem.) This implies that the three independent variables are highly correlated and cannot be utilized for multiple regression analysis. Simple linear regression was conducted for each of these countries.

Table 322
Regression Analysis of Russian Federation, China, India & FDI Cuba

ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
	Regression	175.464	3	58.488	.542	.679
	Residual	432.036	4	108.009		
	Total	607.500	7			

a. Predictors: (Constant), RUSSIA, INDIA, CHINA
b. Dependent Variable: FDICUBA

Table 323
Regression Coefficient Analysis of Russian Federation, China, India & FDI Cuba

Coefficients

		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
Model		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	33.317	71.992		.463	.668		
	CHINA	4.608E-07	.000	1.498	.469	.664	.017	57.393
	INDIA	4.952E-07	.000	.220	.110	.918	.044	22.621
	RUSSIA	-3.681E-06	.000	-1.556	-.901	.418	.060	16.760

a. Dependent Variable: FDICUBA

A simple linear regression analysis between FDI Cuba and Air Transport for China did not revealed a significant relationship (β = 0.0000, p-value = 0.595) (Tables 324 and 325). Therefore, there was not a significant correlation between the FDI to Cuba and Air Transport for China, implying the null hypothesis was not rejected for this country.

Table 324
Regression Analysis of China & FDI Cuba

ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	30.351	1	30.351	.316	.595
	Residual	577.149	6	96.192		
	Total	607.500	7			

a. Predictors: (Constant), CHINA
b. Dependent Variable: FDICUBA

Table 325
Regression Coefficient Analysis of China & FDI Cuba

Coefficients

		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
Model		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	-1.507	10.820		-.139	.894		
	CHINA	6.876E-08	.000	.224	.562	.595	1.000	1.000

a. Dependent Variable: FDICUBA

A simple linear regression analysis between FDI Cuba and Air Transport for India did not revealed a significant relationships (β = 0.0000, p-value = 0.480) (Tables 326 and 327). Therefore, there was not a significant correlation between the FDI to Cuba and Air Transport for India, implying the null hypothesis was not rejected for this country.

Table 326
Regression Analysis of India & FDI Cuba

ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	52.425	1	52.425	.567	.480
	Residual	555.075	6	92.512		
	Total	607.500	7			

a. Predictors: (Constant), INDIA
b. Dependent Variable: FDICUBA

Table 327
Regression Coefficient Analysis of India & FDI Cuba

Coefficients

		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
Model		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	-8.554	17.346		-.493	.639		
	INDIA	6.599E-07	.000	.294	.753	.480	1.000	1.000

a. Dependent Variable: FDICUBA

A simple linear regression analysis between FDI Cuba and Air Transport for the Russian Federation did not revealed a significant relationship (β = 0.0000, p-value = 0.867) (Tables 328 and 329). Therefore, there was not a significant correlation between the FDI to Cuba and Air Transport for the Russian Federation, implying the null hypothesis was not rejected for this country.

Table 328
Regression Analysis of Russian Federation & FDI Cuba

ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	3.078	1	3.078	.031	.867
	Residual	604.422	6	100.737		
	Total	607.500	7			

a. Predictors: (Constant), RUSSIA
b. Dependent Variable: FDICUBA

Table 329
Regression Coefficient Analysis of Russian Federation & FDI Cuba

Coefficients

		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
Model		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	.716	20.527		.035	.973		
	RUSSIA	1.684E-07	.000	.071	.175	.867	1.000	1.000

a. Dependent Variable: FDICUBA

Results for Category II (Developing Countries) Using the Second Independent Variable, Fixed Line and Mobile Phone Subscribers

The multiple regression analysis, with FDI to Cuba as the dependent variable and Fixed Line and Mobile Phone Subscribers for the developing countries, China, India and the Russian Federation as the independent variables, did not revealed a significant relationship. From the ANOVA, the F-value = 0.932 with a p-value = 0.523 implying that the model was not significant (Table 330). This was also seen from the multiple regression analysis where the beta coefficient was not significant, implying the null hypothesis was not rejected for these countries (Table 331). Therefore, there was a not a significant correlation between the FDI to Cuba and Fixed Line and Mobile Phone Subscribers for these developing countries, China, India and the Russian Federation. From the collinearity diagnostics, the variance inflation factor (VIF) was 148.493, 298.241 and 39.342 for China, India and the Russian Federation, respectively, which implied a major multicollinearity problem. (As stated before a VIF greater than 5 is usually an indication of a multicollinearity problem.) This implies that the three independent variables are highly correlated and cannot be utilized for multiple regression analysis. Simple linear regression was conducted for each of these countries.

Table 330
Regression Analysis of Russian Federation, China, India & FDI Cuba

ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	216.900	3	72.300	.932	.523
	Residual	232.814	3	77.605		
	Total	449.714	6			

a. Predictors: (Constant), RUSSIA, CHINA, INDIA
b. Dependent Variable: FDICUBA

Table 331
Regression Coefficient Analysis of Russian Federation, China, India & FDI Cuba

Coefficients

		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
Model		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	30.760	27.618		1.114	.347		
	CHINA	1.581	2.874	2.785	.550	.621	.007	148.493
	INDIA	-25.414	29.014	-6.284	-.876	.446	.003	298.241
	RUSSIA	1.338	1.064	3.278	1.258	.297	.025	39.342

a. Dependent Variable: FDICUBA

A simple linear regression analysis between FDI Cuba and Fixed Line and Mobile Phone Subscribers for China did not revealed a significant relationship (β = -0.221, p-value = 0.388) (Tables 332 and 333). Therefore, there was not a significant correlation between the FDI to Cuba and Fixed Line and Mobile Phone Subscribers for China, implying the null hypothesis was not rejected for this country.

Table 332
Regression Analysis of China & FDI Cuba

ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	68.199	1	68.199	.894	.388
	Residual	381.515	5	76.303		
	Total	449.714	6			

a. Predictors: (Constant), CHINA
b. Dependent Variable: FDICUBA

Table 333
Regression Coefficient Analysis of China & FDI Cuba

Coefficients

		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
Model		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	8.510	7.096		1.199	.284		
	CHINA	-.221	.234	-.389	-.945	.388	1.000	1.000

a. Dependent Variable: FDICUBA

A simple linear regression analysis between FDI Cuba and Fixed Line and Mobile Phone Subscribers for India did not revealed a significant relationship (β = -1.43 p-value = 0.435) (Tables 334 and 335). Therefore, there was not a significant correlation between the FDI to Cuba and Fixed Line and Mobile Phone Subscribers for India, implying the null hypothesis was not rejected for this country.

Table 334
Regression Analysis of India & FDI Cuba

ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	56.502	1	56.502	.718	.435
	Residual	393.212	5	78.642		
	Total	449.714	6			

a. Predictors: (Constant), INDIA
b. Dependent Variable: FDICUBA

Table 335

Regression Coefficient Analysis of India & FDI Cuba

Coefficients

		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
Model		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	9.350	8.671		1.078	.330		
	INDIA	-1.434	1.691	-.354	-.848	.435	1.000	1.000

a. Dependent Variable: FDICUBA

A simple linear regression analysis between FDI Cuba and Fixed Line and Mobile Phone Subscribers for the Russian Federation did not revealed a significant relationship (β = -0.082, p-value = 0.665) (Tables 336 and 337). Therefore, there was not a significant correlation between the FDI to Cuba and Fixed Line and Mobile Phone Subscribers for the Russian Federation, implying the null hypothesis was not rejected for this country.

Table 336

Regression Analysis of Russian Federation & FDI Cuba

ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	18.267	1	18.267	.212	.665
	Residual	431.447	5	86.289		
	Total	449.714	6			

a. Predictors: (Constant), RUSSIA

b. Dependent Variable: FDICUBA

Table 337

Regression Coefficient Analysis of Russian Federation & FDI Cuba

Coefficients

		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
Model		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	5.616	7.491		.750	.487		
	RUSSIA	-8.228E-02	.179	-.202	-.460	.665	1.000	1.000

a. Dependent Variable: FDICUBA

Results for Category II (Developing Countries) Using the Second Independent Variable, Internet Users

The multiple regression analysis, with FDI to Cuba as the dependent variable and Internet Users for the developing countries, China, India and the Russian Federation as the independent variables, did not revealed a significant relationship. From the ANOVA, the F-value = 3.665 with a p-value = 0.082 implying that the model was not significant (Table 338). This was also seen from the multiple regression analysis where the beta coefficient was not significant, implying the null hypothesis was not rejected for these countries (Table 339). Therefore, there was not a significant correlation between the FDI to Cuba and Internet Users for these developing countries, China, India and the Russian Federation. India did showed a marginal result from the (β = 9.037, p-value = 0.059), contradicting the result from China and the Russian Federation not being significant (Table 333). From the collinearity diagnostics, the variance inflation factor (VIF) was 17.574, 11.641 and 18.390 for China, India and the Russian Federation, respectively, which implied a major multicollinearity problem. (As stated before a VIF greater than 5 is usually an indication of a multicollinearity problem.) This implies that the three independent variables are highly correlated and cannot be utilized for multiple regression analysis. Simple linear regression was conducted for each of these countries.

Table 338
Regression Analysis of Russian Federation, China, India & FDI Cuba

ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	727.237	3	242.412	3.665	.082
	Residual	396.863	6	66.144		
	Total	1124.100	9			

a. Predictors: (Constant), RUSSIA, INDIA, CHINA
b. Dependent Variable: FDICUBA

Table 339
Regression Coefficient Analysis of Russian Federation, China, India & FDI Cuba

Coefficients

		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
Model		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	-6.265E-02	4.406		-.014	.989		
	CHINA	-3.055	2.348	-1.323	-1.301	.241	.057	17.574
	INDIA	9.037	3.889	1.923	2.324	.059	.086	11.641
	RUSSIA	2.239E-02	1.538	.015	.015	.989	.054	18.390

a. Dependent Variable: FDICUBA

A simple linear regression analysis between FDI Cuba and Internet Users for China did not revealed a significant relationship (β = 1.18, p-value = 0.130) (Tables 340 and 341). Therefore, there was not a significant correlation between the FDI to Cuba and Internet Users for China, implying the null hypothesis was not rejected for this country.

Table 340
Regression Analysis of China & FDI Cuba

ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	294.692	1	294.692	2.842	.130
	Residual	829.408	8	103.676		
	Total	1124.100	9			

a. Predictors: (Constant), CHINA
b. Dependent Variable: FDICUBA

Table 341
Regression Coefficient Analysis of China & FDI Cuba

Coefficients

		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
Model		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	.489	5.353		.091	.929		
	CHINA	1.182	.701	.512	1.686	.130	1.000	1.000

a. Dependent Variable: FDICUBA

A simple linear regression analysis between FDI Cuba and Internet Users for India revealed a significant positive relationship (β = 3.22, p-value = 0.029) (Tables 342 and 343). Therefore, there was a significant positive correlation between the FDI to Cuba and Internet Users for India, implying the null hypothesis was rejected for this country. This was a reasonable result. India has just recently begun investing in Cuba’s energy supply (Cuba economy, 2008); as well as, conducting FDI investments in Cuba, mostly tourism, manufacturing of vehicles and pharmaceutical products (Cuba trade, 2008). Therefore, the relationship being positive significant concludes, as Internet Users in India increases, then FDI to Cuba could also increase since a higher internet usage for

India is relevant to generating greater business transactions with Cuba.

Table 342
Regression Analysis of India & FDI Cuba

ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	526.477	1	526.477	7.048	.029
	Residual	597.623	8	74.703		
	Total	1124.100	9			

a. Predictors: (Constant), INDIA
b. Dependent Variable: FDICUBA

Table 343
Regression Coefficient Analysis of India & FDI Cuba

Coefficients

		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
Model		B	Std. Error	Beta			Tolerance	VIF
	(Constant)	-1.627	4.451		-.365	.724		
	INDIA	3.216	1.211	.684	2.655	.029	1.000	1.000

a. Dependent Variable: FDICUBA

A simple linear regression analysis between FDI Cuba and Internet Users for the Russian Federation did not revealed a significant relationship (β = 0.830, p-value = 0.091) (Tables 344 and 345). Therefore, there was not a significant correlation between the FDI to Cuba and Internet Users for the Russian Federation, implying the null hypothesis was not rejected for this country. The result not being relevant with Internet Users is surprising, since the Russian Federation has a long economic and political relationship with Cuba in providing FDI investments (Mesa-Lago, C. 2001) (Mesa-Lago, C. 2005).

Table 344
Regression Analysis of Russian Federation & FDI Cuba

ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	354.118	1	354.118	3.679	.091
	Residual	769.982	8	96.248		
	Total	1124.100	9			

a. Predictors: (Constant), RUSSIA
b. Dependent Variable: FDICUBA

Table 345
Regression Coefficient Analysis of Russian Federation & FDI Cuba

Coefficients

		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
Model		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	.565	4.844		.117	.910		
	RUSSIA	.830	.433	.561	1.918	.091	1.000	1.000

a. Dependent Variable: FDICUBA

Results for Category III (Least Developed Countries) Using the Third Independent Variable, Air Transport

For the third category of countries, multiple regression analysis was done for FDI to Cuba as the dependent variable and Air Transport for the least Developing countries, Jamaica, Peru, Madagascar and Nepal as the independent variables. Haiti was not tested based on insufficient data. This analysis did not revealed a significant relationships with FDI to Cuba (F value = 1.860 with a p-value = 0.319) (Table 346). Again, the beta coefficients were not significant, implying the null hypothesis was not rejected for these countries (Table 347). Therefore, there was not a significant correlation between the FDI to Cuba and Air Transport for the least developing countries of Jamaica, Peru, Madagascar and Nepal. Surprisingly, all four countries did not have a correlation problem based on their VIF (variance inflation factor) of 1.901, 1.578, 2.923 and 3.776 for Jamaica, Peru, Madagascar and Nepal, respectively. (VIF greater than 5 is usually an indication of a multicollinearity problem.) A Pearson correlation analysis was also done and reinforced of not having a correlation among the countries. For consistency, simple linear regression was conducted for each of these countries.

Table 346
Regression Analysis of Jamaica, Peru, Madagascar, Nepal & FDI Cuba

ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	432.932	4	108.233	1.860	.319
	Residual	174.568	3	58.189		
	Total	607.500	7			

a. Predictors: (Constant), NEPAL, PERU, JAMAICA, MADAGASC
b. Dependent Variable: FDICUBA

Table 347
Regression Coefficient Analysis of Jamaica, Peru, Madagascar, Nepal & FDI Cuba

Coefficients

		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
Model		B	Std. Error	Beta			Tolerance	VIF
	(Constant)	15.556	49.510		.314	.774		
	JAMAICA	-1.624E-05	.000	-.370	-.867	.450	.526	1.901
	PERU	6.307E-06	.000	.596	1.533	.223	.634	1.578
	MADAGASC	-2.654E-05	.000	-.373	-.706	.531	.342	2.923
	NEPAL	3.063E-05	.000	.480	.798	.483	.265	3.776

a. Dependent Variable: FDICUBA

A simple linear regression analysis between FDI Cuba and Air Transport for Jamaica did not revealed a significant, but a marginal negative relationship (β = 0.0000, p-value = 0.059) (Tables 348 and 349). Therefore, there was not a significant, but a marginal correlation between the FDI to Cuba and Air Transport for Jamaica, implying the null hypothesis was marginally rejected for this country. The marginal result may be inversely related that an increase in Air Transport for Jamaica will result in a greater FDI to Cuba, since Jamaica and Cuba have been trading and investing (Hickling-Hudson, 2004). Such investment that would increase Cuba's FDI was Jamaica's interest at Cuba's travel tourism industry, which demographically is preferential based on the close proximity of both countries.

Table 348
Regression Analysis of Jamaica & FDI Cuba

ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	287.625	1	287.625	5.395	.059
	Residual	319.875	6	53.313		
	Total	607.500	7			

a. Predictors: (Constant), JAMAICA
b. Dependent Variable: FDICUBA

Table 349
Regression Coefficient Analysis of Jamaica & FDI Cuba

Coefficients

		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
Model		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	58.715	23.590		2.489	.047		
	JAMAICA	-3.020E-05	.000	-.688	-2.323	.059	1.000	1.000

a. Dependent Variable: FDICUBA

A simple linear regression analysis between FDI Cuba and Air Transport for Peru did not revealed a significant relationship (β = 0.0000, p-value = 0.074) (Tables 350 and 351). Therefore, there was not a significant correlation between the FDI to Cuba and Air Transport for Peru, implying the null hypothesis was not rejected for this country.

Table 350
Regression Analysis of Peru & FDI Cuba

ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	266.059	1	266.059	4.675	.074
	Residual	341.441	6	56.907		
	Total	607.500	7			

a. Predictors: (Constant), PERU
b. Dependent Variable: FDICUBA

Table 351
Regression Coefficient Analysis of Peru & FDI Cuba

Coefficients

		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
Model		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	-13.594	8.673		-1.567	.168		
	PERU	7.002E-06	.000	.662	2.162	.074	1.000	1.000

a. Dependent Variable: FDICUBA

A simple linear regression analysis between FDI Cuba and Air Transport for Madagascar did not revealed a significant relationship (β = 0.0000, p-value = 0.663) (Tables 352 and 353). Therefore, there was not a significant correlation between the FDI to Cuba and Air Transport for Madagascar, implying the null hypothesis was not rejected for this country.

Table 352
Regression Analysis of Madagascar & FDI Cuba

ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	20.576	1	20.576	.210	.663
	Residual	586.924	6	97.821		
	Total	607.500	7			

a. Predictors: (Constant), MADAGASC
b. Dependent Variable: FDICUBA

Table 353
Regression Coefficient Analysis of Madagascar & FDI Cuba

Coefficients

		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
Model		B	Std. Error	Beta			Tolerance	VIF
	(Constant)	-2.836	15.840		-.179	.864		
	MADAGASC	1.308E-05	.000	.184	.459	.663	1.000	1.000

a. Dependent Variable: FDICUBA

A simple linear regression analysis between FDI Cuba and Air Transport for Nepal did not revealed a significant relationship (β = 0.0000, p-value = 0.509) (Tables 354 and 355). Therefore, there was not a significant correlation between the FDI to Cuba and Air Transport for Nepal, implying the null hypothesis was not rejected for this country.

Table 354
Regression Analysis of Nepal & FDI Cuba

ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	46.072	1	46.072	.492	.509
	Residual	561.428	6	93.571		
	Total	607.500	7			

a. Predictors: (Constant), NEPAL
b. Dependent Variable: FDICUBA

Table 355
Regression Coefficient Analysis of Nepal & FDI Cuba

Coefficients

		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
Model		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	-5.092	13.745		-.370	.724		
	NEPAL	1.757E-05	.000	.275	.702	.509	1.000	1.000

a. Dependent Variable: FDICUBA

Results for Category III (Least Developed Countries) Using the Third Independent Variable, Fixed Line and Mobile Phone Subscribers

For the third category of countries, multiple regression analysis was done for FDI to Cuba as the dependent variable and Fixed Line and Mobile Phone Subscribers for the least Developing countries, Jamaica, Haiti, Peru, Madagascar, and Nepal as the independent variables. This analysis did not revealed a significant relationships with FDI to Cuba (F value = 2.045 with a p-value = 0.484) (Table 356). Again, the beta coefficients were not significant, implying the null hypothesis was not rejected for these countries (Table 357). Therefore, there was not a significant correlation between the FDI to Cuba and

Fixed Line and Mobile Phone Subscribers for the least developing countries of Jamaica, Haiti, Peru, Madagascar, and Nepal. Like above, Fixed Line and Mobile Phone Subscribers for all the variables were highly correlated with VIFs (variance inflation factor) of 211.518, 374.195, 121.826, 141.079 and 264.213 for Jamaica, Haiti, Peru, Madagascar and Nepal, respectively. (VIF greater than 5 is usually an indication of a multicollinearity problem.) A correlation analysis was also done and reinforced with the high correlation among these variables. Simple linear regression was conducted for each of these countries.

Table 356

Regression Analysis of Jamaica, Haiti, Peru Madagascar and Nepal & FDI Cuba

ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	409.648	5	81.930	2.045	.484
	Residual	40.066	1	40.066		
	Total	449.714	6			

a. Predictors: (Constant), NEPAL, MADAGASC, JAMAICA, PERU, HAITI

b. Dependent Variable: FDICUBA

Table 357

Regression Coefficient Analysis of Jamaica, Haiti, Peru, Madagascar and Nepal & FDI Cuba

Coefficients

		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
Model		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	-89.238	41.624		-2.144	.278		
	JAMAICA	3.308	1.313	10.934	2.519	.241	.005	211.518
	HAITI	-61.368	20.739	-17.085	-2.959	.207	.003	374.195
	PERU	13.354	6.576	6.690	2.031	.291	.008	121.826
	MADAGASC	173.964	62.903	9.805	2.766	.221	.007	141.079
	NEPAL	-200.563	98.614	-9.868	-2.034	.291	.004	264.213

a. Dependent Variable: FDICUBA

A simple linear regression analysis between FDI Cuba and Fixed Line and Mobile Phone Subscribers for Jamaica did not revealed a significant relationship (β = -0.104, p-value = 0.450) (Tables 358 and 359). Therefore, there was not a significant correlation between the FDI to Cuba and Fixed Line and Mobile Phone Subscribers for Jamaica, implying the null hypothesis was not rejected for this country.

Table 358

Regression Analysis of Jamaica & FDI Cuba

ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	53.290	1	53.290	.672	.450
	Residual	396.424	5	79.285		
	Total	449.714	6			

a. Predictors: (Constant), JAMAICA
b. Dependent Variable: FDICUBA

Table 359
Regression Coefficient Analysis of Jamaica & FDI Cuba

Coefficients

		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
Model		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	7.927	7.349		1.079	.330		
	JAMAICA	-.104	.127	-.344	-.820	.450	1.000	1.000

a. Dependent Variable: FDICUBA

A simple linear regression analysis between FDI Cuba and Fixed Line and Mobile Phone Subscribers for Haiti did not revealed a significant relationship (β = -1.42, p-value = 0.379) (Tables 360 and 361). Therefore, there was not a significant correlation between the FDI to Cuba and Fixed Line and Mobile Phone Subscribers for Haiti, implying the null hypothesis was not rejected for this country.

Table 360
Regression Analysis of Haiti & FDI Cuba

ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	70.497	1	70.497	.930	.379
	Residual	379.217	5	75.843		
	Total	449.714	6			

a. Predictors: (Constant), HAITI
b. Dependent Variable: FDICUBA

Table 361
Regression Coefficient Analysis of Haiti & FDI Cuba

Coefficients

		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
Model		B	Std. Error	Beta			Tolerance	VIF
	(Constant)	7.041	5.686		1.238	.271		
	HAITI	-1.422	1.475	-.396	-.964	.379	1.000	1.000

a. Dependent Variable: FDICUBA

A simple linear regression analysis between FDI Cuba and Fixed Line and Mobile Phone Subscribers for Peru did not revealed a significant relationship (β = -0.661, p-value = 0.468) (Tables 362 and 363). Therefore, there was not a significant correlation between the FDI to Cuba and Fixed Line and Mobile Phone Subscribers for Peru, implying the null hypothesis was not rejected for this country.

Table 362
Regression Analysis of Peru & FDI Cuba

ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	49.274	1	49.274	.615	.468
	Residual	400.441	5	80.088		
	Total	449.714	6			

a. Predictors: (Constant), PERU
b. Dependent Variable: FDICUBA

Table 363

Regression Coefficient Analysis of Peru & FDI Cuba

Coefficients

		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
Model		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	11.916	12.385		.962	.380		
	PERU	-.661	.842	-.331	-.784	.468	1.000	1.000

a. Dependent Variable: FDICUBA

A simple linear regression analysis between FDI Cuba and Fixed Line and Mobile Phone Subscribers for Madagascar did not revealed a significant relationship (β = -5.70, p-value = 0.482) (Tables 364 and 365). Therefore, there was not a significant correlation between the FDI to Cuba and Fixed Line and Mobile Phone Subscribers for Madagascar, implying the null hypothesis was not rejected for this country.

Table 364

Regression Analysis of Madagascar & FDI Cuba

ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	46.414	1	46.414	.575	.482
	Residual	403.300	5	80.660		
	Total	449.714	6			

a. Predictors: (Constant), MADAGASC

b. Dependent Variable: FDICUBA

Table 365

Regression Coefficient Analysis of Madagascar & FDI Cuba

Coefficients

		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
Model		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	9.900	10.240		.967	.378		
	MADAGASC	-5.700	7.514	-.321	-.759	.482	1.000	1.000

a. Dependent Variable: FDICUBA

A simple linear regression analysis between FDI Cuba and Fixed Line and Mobile Phone Subscribers for Nepal did not revealed a significant relationship (β = -6.75, p-value = 0.467) (Tables 366 and 367). Therefore, there was not a significant correlation between the FDI to Cuba and Fixed Line and Mobile Phone Subscribers for Nepal, implying the null hypothesis was not rejected for this country.

Table 366

Regression Analysis of Nepal & FDI Cuba

ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	49.531	1	49.531	.619	.467
	Residual	400.184	5	80.037		
	Total	449.714	6			

a. Predictors: (Constant), NEPAL

b. Dependent Variable: FDICUBA

Table 367

Regression Coefficient Analysis of Nepal & FDI Cuba

Coefficients

		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
Model		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	12.593	13.181		.955	.383		
	NEPAL	-6.745	8.575	-.332	-.787	.467	1.000	1.000

a. Dependent Variable: FDICUBA

<u>Results for Category III (Least Developed Countries) Using the Third Independent Variable, Internet Users</u>

For the third category of countries, multiple regression analysis was done for FDI to Cuba as the dependent variable and Internet Users for the least Developing countries, Jamaica, Haiti, Peru and Nepal as the independent variables. Madagascar was excluded from the variable based on the inability of the analysis in providing a statistical result. This analysis did not revealed a significant relationships with FDI to Cuba (F value = 1.677 with a p-value = 0.290) (Table 368). Again, the beta coefficients were not significant, implying the null hypothesis was not rejected for these countries (Table 369). Therefore, there was not a significant correlation between the

FDI to Cuba and Internet Users for the least developing countries of Jamaica, Haiti, Peru and Nepal. Like above, Internet Users for the four variables were highly correlated with VIFs (variance inflation factor) of 167.152, 69.324, 13.951 and 44.555 for Jamaica, Haiti, Peru and Nepal, respectively. (VIF greater than 5 is usually an indication of a multicollinearity problem.) A correlation analysis was also done and reinforced with the high correlation among these variables. Simple linear regression was conducted for each of these countries.

Table 368

Regression Analysis of Jamaica, Haiti, Peru and Nepal & FDI Cuba

ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	644.012	4	161.003	1.677	.290
	Residual	480.088	5	96.018		
	Total	1124.100	9			

a. Predictors: (Constant), NEPAL, HAITI, PERU, JAMAICA

b. Dependent Variable: FDICUBA

Table 369
Regression Coefficient Analysis of Jamaica, Haiti, Peru and Nepal & FDI Cuba

Coefficients

		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
Model		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	-1.830	6.262		-.292	.782		
	JAMAICA	2.734	1.952	5.293	1.401	.220	.006	167.152
	HAITI	-9.689	7.847	-3.005	-1.235	.272	.014	69.324
	PERU	1.045	1.366	.835	.765	.479	.072	13.951
	NEPAL	-66.869	42.220	-3.090	-1.584	.174	.022	44.555

a. Dependent Variable: FDICUBA

A simple linear regression analysis between FDI Cuba and Internet Users for Jamaica did not revealed a significant relationship (β = 0.250, p-value = 0.157) (Tables 370 and 371). Therefore, there was not a significant correlation between the FDI to Cuba and Internet Users for Jamaica, implying the null hypothesis was not rejected for this country.

Table 370
Regression Analysis of Jamaica & FDI Cuba

ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
	Regression	262.469	1	262.469	2.437	.157
	Residual	861.631	8	107.704		
	Total	1124.100	9			

a. Predictors: (Constant), JAMAICA
b. Dependent Variable: FDICUBA

Table 371
Regression Coefficient Analysis of Jamaica & FDI Cuba

Coefficients

		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
Model		B	Std. Error	Beta			Tolerance	VIF
	(Constant)	1.335	5.234		.255	.805		
	JAMAICA	.250	.160	.483	1.561	.157	1.000	1.000

a. Dependent Variable: FDICUBA

A simple linear regression analysis between FDI Cuba and Internet Users for Haiti did not revealed a significant relationship (β = 1.82, p-value = 0.089) (Tables 372 and 373). Therefore, there was not a significant correlation between the FDI to Cuba and Internet Users for Haiti, implying the null hypothesis was not rejected for this country.

Table 372
Regression Analysis of Haiti & FDI Cuba

ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	358.646	1	358.646	3.748	.089
	Residual	765.454	8	95.682		
	Total	1124.100	9			

a. Predictors: (Constant), HAITI
b. Dependent Variable: FDICUBA

Table 373
Regression Coefficient Analysis of Haiti & FDI Cuba

Coefficients

		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
Model		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	1.689	4.383		.385	.710		
	HAITI	1.821	.941	.565	1.936	.089	1.000	1.000

a. Dependent Variable: FDICUBA

A simple linear regression analysis between FDI Cuba and Internet Users for Peru did not revealed a significant relationship (β = 0.710, p-value = 0.087) (Tables 374 and 375). Therefore, there was not a significant correlation between the FDI to Cuba and Internet Users, implying the null hypothesis was not rejected for this country.

Table 374
Regression Analysis of Peru & FDI Cuba

ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	362.339	1	362.339	3.805	.087
	Residual	761.761	8	95.220		
	Total	1124.100	9			

a. Predictors: (Constant), PERU
b. Dependent Variable: FDICUBA

Table 375

Regression Coefficient Analysis of Peru & FDI Cuba

Coefficients

		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
Model		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	-.396	5.172		-.077	.941		
	PERU	.710	.364	.568	1.951	.087	1.000	1.000

a. Dependent Variable: FDICUBA

A simple linear regression analysis between FDI Cuba and Internet Users for Nepal did not revealed a significant relationship (β = 5.33, p-value = 0.492) (Tables 376 and 377). Therefore, there was not a significant correlation between the FDI to Cuba and Internet Users for Nepal, implying the null hypothesis was not rejected for this country.

Table 376

Regression Analysis of Nepal & FDI Cuba

ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	68.267	1	68.267	.517	.492
	Residual	1055.833	8	131.979		
	Total	1124.100	9			

a. Predictors: (Constant), NEPAL

b. Dependent Variable: FDICUBA

Table 377
Regression Coefficient Analysis of Nepal & FDI Cuba

Coefficients

		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
Model		B	Std. Error	Beta			Tolerance	VIF
	(Constant)	4.500	5.744		.783	.456		
	NEPAL	5.333	7.416	.246	.719	.492	1.000	1.000

a. Dependent Variable: FDICUBA

Summary of Results for Hypothesis 6

Category I (Advanced Countries)

The United States, Japan, Germany, France and Spain had an insignificant relationship between FDI inflow to Cuba and Air Transport.

The United States, Japan, Germany, France and Spain had an insignificant relationship between FDI inflow to Cuba and Fixed Line and Mobile Phone Subscribers.

The United States, Japan, Germany, France and Spain had an insignificant relationship between FDI inflow to Cuba and Internet Users.

Category II (Developing Countries)

China, India and the Russian Federation had an insignificant relationship between FDI inflow to Cuba and Air Transport.

China, India and the Russian Federation had an insignificant relationship between FDI inflow to Cuba and Fixed Line and Mobile Phone Subscribers.

India had a positive significant relationship between FDI inflow to Cuba and Internet Users. Insignificant results were found for China and the Russian Federation.

Category III (Least Developing Countries)

Peru, Madagascar and Nepal had an insignificant relationship between FDI inflow to Cuba and Air Transport, while Jamaica showed a marginally significant negative relationship. Haiti was not tested based on insufficient data.

Insignificant relationship existed between FDI inflow to Cuba and Fixed Line and Mobile Phone Subscribers for Jamaica, Haiti, Peru, Madagascar and Nepal.

Insignificant relationship existed between FDI inflow to Cuba and Internet Users for Jamaica, Haiti, Peru and Nepal. Madagascar was not tested based on the inability of the analysis in providing a statistical result.

Results for Hypothesis 7

FDI to Cuba was the dependent variable. For the advanced countries, the independent variables were Market Type for the United States, Japan, Germany, France and Spain (Sawalha, 2007). The independent variables for the developing countries were Market Type for China, India and the Russian Federation (Sawalha, 2007). The independent variables for the Least Developed Countries (LCD's) were Market Type for Jamaica, Haiti, Peru, Madagascar and Nepal. The

Republic of Cuba's Market Type was not included in the model as there were only three data points. The Market Type included one variable, Merchandise Trade (measured in percent of Gross Domestic Product).

The seventh hypothesis to be tested is:

> Hypothesis H_{07}: The level of contribution of FDI inflow to Cuba is not significantly related to the Market Type for the three groups of countries.
>
> Hypothesis H_{A7}: The level of contribution of FDI inflow to Cuba is significantly related to the Market Type for the three groups of countries.

The multiple regression models to test Hypothesis 7 are listed below.

Category I (Advanced Countries)

$$FDI_{CUBA} = \alpha_O + \alpha_1 MARKETTYPE_{US} + \alpha_2 MARKETTYPE_{Japan} + \alpha_3 MARKETTYPE_{Germany} + \alpha_4 MARKETTYPE_{France} + \alpha_5 MARKETTYPE_{Spain} + \varepsilon_1$$

Categories II (Developing Countries)

$$FDI_{CUBA} = \beta_O + \beta_1 MARKETTYPE_{China} + \beta_2 MARKETTYPE_{India} + \beta_3 MARKETTYPE_{Russian\ Federation} + \varepsilon_2$$

Categories III (Least Developed Countries)

$$FDI_{CUBA} = \delta_o + \delta_1 MARKETTYPE_{Jamaica} + \delta_2 MARKETTYPE_{Haiti} + \delta_3 MARKETTYPE_{Peru} + \delta_4 MARKETTYPE_{Madagascar} + \delta_5 MARKETTYPE_{Nepal} + \varepsilon_3$$

The results were presented for the independent variables measuring Merchandise Trade for each of the three categories of countries.

Pearson Correlation Analysis

A Pearson correlation analysis among the advanced, developing and least developed of the 13 non oil-producing countries revealed, a significant correlation between Merchandise Trade with the country of Jamaica and the FDI of Cuba (Table 378).

Table 378

Pearson Correlation analysis for FDI Cuba and Merchandise Trade for all the countries in the study

FDI Cuba Pearson Correlation Sig. (2-Tailed) N	USA	Japan	Germany	France	Spain	China	India	Russian Federation
	0.463 0.178 10	0.614 0.059 10	0.440 0.203 10	-0.386 0.271 10	-0.184 0.611 10	0.431 0.213 10	0.613 0.060 10	-0.487 0.153 10

Jamaica	Haiti	Peru	Madagascar	Nepal
0.661* 0.038 10	-0.193 0.594 10	0.627 0.052 10	0.123 0.735 10	-0.388 0.268 10

Results for Category I (Advanced Countries) Using the Independent Variable, Merchandise Trade

The multiple regression analysis, with FDI to Cuba as the dependent variable and Merchandise Trade for the advanced countries, the United States, Japan, Germany, France and Spain as the independent variables, did not revealed a significant relationships. From the ANOVA, the F-value = 2.828 with a p-value = 0.168, implying that the model was not significant (Table 379). This was also observed from the multiple regression analysis where the beta coefficients were not significant, implying the null hypothesis was not rejected for these countries (Table 380). Therefore, there was not a significant correlation between the FDI to Cuba and Merchandise Trade for these advanced countries, the United States, Japan, Germany, France and Spain. This result was surprising as France and Spain had been providing significant FDI to Cuba (Travieso-Diaz & Trumbull, 2003). From the collinearity diagnostics, the variance inflation factors (VIF) were 14.165, 148.201, 95.496, 14.892 and 9.517 for the United States, Japan, Germany, France and Spain, respectively, implying a major multicollinearity problem. (A VIF greater than 5 is usually an indication of a multicollinearity problem.) This implies that the five independent variables are highly correlated and cannot be utilized for multiple regression analysis. A correlation analysis further reinforced this position. Simple linear regression was conducted for each of these countries.

Table 379
Regression Analysis of the United States, Japan, Germany, France, Spain & FDI Cuba

ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
	Regression	876.242	5	175.248	2.828	.168
	Residual	247.858	4	61.965		
	Total	1124.100	9			

a. Predictors: (Constant), SPAIN, JAPAN, USA, FRANCE, GERMANY
b. Dependent Variable: FDICUBA

Table 380
Regression Coefficient of the United States, Japan, Germany, France, Spain & FDI Cuba

Coefficients

		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
Model		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	-53.384	75.371		-.708	.518		
	USA	-10.068	6.191	-1.437	-1.626	.179	.071	14.165
	JAPAN	16.471	6.878	6.844	2.395	.075	.007	148.201
	GERMANY	-6.984	3.056	-5.244	-2.285	.084	.010	95.496
	FRANCE	4.751	4.559	.944	1.042	.356	.067	14.892
	SPAIN	2.334	3.577	.473	.652	.550	.105	9.517

a. Dependent Variable: FDICUBA

A simple linear regression analysis between FDI Cuba and Merchandise Trade for the United States did not revealed a significant relationship (β = 3.25, p-value = 0.178). Therefore, there was not a significant correlation between the FDI to Cuba and Merchandise Trade for the United States, implying the null hypothesis was not rejected for this country. The fact that there was no significant relationship was reinforcing the existing trade embargo between the United States and Cuba (Mesa-Lago, 2001) (Tables 381 and 382).

Table 381
Regression Analysis of the United States & FDI Cuba

ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	241.069	1	241.069	2.184	.178
	Residual	883.031	8	110.379		
	Total	1124.100	9			

a. Predictors: (Constant), USA
b. Dependent Variable: FDICUBA

Table 382
Regression Coefficient Analysis of the United States & FDI Cuba

Coefficients

		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
Model		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	-57.515	44.254		-1.300	.230		
	USA	3.245	2.195	.463	1.478	.178	1.000	1.000

a. Dependent Variable: FDICUBA

A simple linear regression analysis between FDI Cuba and Merchandise Trade for Japan did not revealed a significant, but a marginal relationship, implying the null hypothesis was marginally rejected for this country (β = 1.48, p-value = 0.059). Therefore, there was a marginally significant positive correlation between the FDI to Cuba and Merchandise Trade for Japan. The fact that there was a marginal relationship implied that Japan was not a major trading partner with Cuba. However, Japan does conduct minimum FDI investments in Cuba (McPherson & Trumbull, 2007) (Tables 383 and 384).

Table 383
Regression Analysis of Japan & FDI Cuba

ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	424.068	1	424.068	4.846	.059
	Residual	700.032	8	87.504		
	Total	1124.100	9			

a. Predictors: (Constant), JAPAN
b. Dependent Variable: FDICUBA

Table 384
Regression Coefficient Analysis of Japan & FDI Cuba

Coefficients

		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
Model		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	-23.784	14.604		-1.629	.142		
	JAPAN	1.478	.671	.614	2.201	.059	1.000	1.000

a. Dependent Variable: FDICUBA

A simple linear regression analysis between FDI Cuba and Merchandise Trade for Germany did not revealed a significant relationship (β = 0.586, p-value = 0.203) (Tables 385 and 386). Therefore, there was not a significant correlation between the FDI to Cuba and Merchandise Trade for Germany, implying the null hypothesis was not rejected for this country. This result was surprising, as Germany and other member countries from the European Union have investments in Cuba (Travieso-Diaz & Trumbull, 2003).

Table 385
Regression Analysis of Germany & FDI Cuba

ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
	Regression	217.705	1	217.705	1.922	.203
	Residual	906.395	8	113.299		
	Total	1124.100	9			

a. Predictors: (Constant), GERMANY
b. Dependent Variable: FDICUBA

Table 386
Regression Coefficient Analysis of Germany & FDI Cuba

Coefficients

		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
Model		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	-26.181	24.673		-1.061	.320		
	GERMANY	.586	.423	.440	1.386	.203	1.000	1.000

a. Dependent Variable: FDICUBA

A simple linear regression analysis between FDI Cuba and Merchandise Trade for France did not revealed a significant relationship (β = -1.94, p-value = 0.271) (Tables 387 and 388). Therefore, there was not a significant correlation between the FDI to Cuba and Merchandise Trade for France, implying the null hypothesis was not rejected for this country. This result was surprising as France does provide significant FDI to Cuba (Travieso-Diaz & Trumbull, 2003).

Table 387
Regression Analysis of France & FDI Cuba

ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	167.352	1	167.352	1.399	.271
	Residual	956.748	8	119.593		
	Total	1124.100	9			

a. Predictors: (Constant), FRANCE
b. Dependent Variable: FDICUBA

Table 388
Regression Coefficient Analysis of France & FDI Cuba

Coefficients

		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
Model		B	Std. Error	Beta			Tolerance	VIF
	(Constant)	96.230	74.919		1.284	.235		
	FRANCE	-1.941	1.641	-.386	-1.183	.271	1.000	1.000

a. Dependent Variable: FDICUBA

A simple linear regression analysis between FDI Cuba and Merchandise Trade for Spain did not revealed a significant relationship (β = -0.909, p-value = 0.611) (Tables 389 and 390). Therefore, there was not a significant correlation between the FDI to Cuba and Merchandise Trade for Spain, implying the null hypothesis was not rejected for this country. As above, the result not being relevant was surprising since Spain does provide significant FDI to Cuba (Travieso-Diaz & Trumbull, 2003).

Table 389
Regression Analysis of Spain & FDI Cuba

ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	38.083	1	38.083	.281	.611
	Residual	1086.017	8	135.752		
	Total	1124.100	9			

a. Predictors: (Constant), SPAIN
b. Dependent Variable: FDICUBA

Table 390
Regression Coefficient Analysis of Spain & FDI Cuba

Coefficients

		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
Model		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	46.510	73.367		.634	.544		
	SPAIN	-.909	1.716	-.184	-.530	.611	1.000	1.000

a. Dependent Variable: FDICUBA

Results for Category II (Developing Countries) Using the Independent Variable for the Measure of Merchandise Trade

The multiple regression analysis, with FDI to Cuba as the dependent variable and Merchandise Trade for the developing countries, China, India and the Russian Federation as the independent variables, revealed a significant positive relationship. From the ANOVA, the F-value = 7.125 with a p-value = 0.021 implying that the model was significant (Table 391). This was also seen from the multiple regression analysis where one of the beta coefficients for India (beta coefficient 5.370 with a p-value = 0.009) was positively significant, which contradicted the result of the model negatively significant for China (beta coefficient -1.883 with a p-value = 0.017) and insignificant for the Russian Federation (beta coefficient -1.001 with a p-value = 0.174) (Table 392). Significant positive correlation between the FDI to Cuba and Merchandise Trade for these developing countries China, India and the Russian Federation would imply that the null hypothesis was rejected for these countries. From the collinearity diagnostics, the variance inflation factors (VIF) were 14.272, 12.920 and 2.000 for China, India and the Russian Federation, respectively, implying a major multicollinearity problem. (As stated before a VIF greater than 5 is usually an indication of a multicollinearity problem.) This implied that two of the three independent variables were highly correlated and would not be utilized for multiple regression analysis. A correlation analysis further reinforced this position. Simple linear regression was conducted for each of these countries.

Table 391

Regression Analysis of Russian Federation, China, India & FDI Cuba

ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	877.733	3	292.578	7.125	.021
	Residual	246.367	6	41.061		
	Total	1124.100	9			

a. Predictors: (Constant), RUSSIA, INDIA, CHINA

b. Dependent Variable: FDICUBA

Table 392

Regression Coefficient Analysis of Russian Federation, China, India & FDI Cuba

Coefficients

		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
Model		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	24.069	41.099		.586	.579		
	CHINA	-1.883	.573	-2.373	-3.286	.017	.070	14.272
	INDIA	5.370	1.412	2.613	3.803	.009	.077	12.920
	RUSSIA	-1.001	.648	-.417	-1.544	.174	.500	2.000

a. Dependent Variable: FDICUBA

A simple linear regression analysis between FDI Cuba and Merchandise Trade for China did not revealed a significant relationship (β = 0.342, p-value = 0.213). Therefore, there was not a significant correlation between the FDI to Cuba and Merchandise Trade for China, implying the null hypothesis was not rejected for this country. The result not being relevant was surprising since China is conducting FDI investment in Cuba; however, open trades with China did not begin in Cuba until after 2003 (Mesa-Lago, 2005) (Tables 393 and 394).

Table 393
Regression Analysis of China & FDI Cuba

ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	209.077	1	209.077	1.828	.213
	Residual	915.023	8	114.378		
	Total	1124.100	9			

a. Predictors: (Constant), CHINA
b. Dependent Variable: FDICUBA

Table 394
Regression Coefficient Analysis of China & FDI Cuba

Coefficients

		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
Model		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	-9.278	13.005		-.713	.496		
	CHINA	.342	.253	.431	1.352	.213	1.000	1.000

a. Dependent Variable: FDICUBA

A simple linear regression analysis between FDI Cuba and Merchandise Trade for India revealed a marginally significant positive relationship (β = 1.26, p-value = 0.060). This was a reasonable result, implying the null hypothesis was rejected. India has just recently begun FDI investment in Cuba, mostly tourism, manufacturing of vehicles and pharmaceutical products (Cuba Trade, 2008) (Tables 395 and 396).

Table 395
Regression Analysis of India & FDI Cuba

ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	421.992	1	421.992	4.808	.060
	Residual	702.108	8	87.764		
	Total	1124.100	9			

a. Predictors: (Constant), INDIA
b. Dependent Variable: FDICUBA

Table 396
Regression Coefficient Analysis of India & FDI Cuba

Coefficients

		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
Model		B	Std. Error	Beta			Tolerance	VIF
	(Constant)	-22.145	13.929		-1.590	.151		
	INDIA	1.259	.574	.613	2.193	.060	1.000	1.000

a. Dependent Variable: FDICUBA

A simple linear regression analysis between FDI Cuba and Merchandise Trade for the Russian Federation did not revealed a significant relationship (β = -1.17, p-value = 0.153) (Tables 397 and 398). Therefore, there was not a significant correlation between the

FDI to Cuba and Merchandise Trade for the Russian Federation, implying the null hypothesis was not rejected for this country. The result not being relevant was surprising, considering Cuba's long-term trade and investment relationship with the Russian Federation (Mesa-Lago, 2005).

Table 397
Regression Analysis of Russian Federation & FDI Cuba

ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	266.700	1	266.700	2.488	.153
	Residual	857.400	8	107.175		
	Total	1124.100	9			

a. Predictors: (Constant), RUSSIA
b. Dependent Variable: FDICUBA

Table 398
Regression Coefficient Analysis of Russian Federation & FDI Cuba

Coefficients

		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
Model		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	66.318	37.303		1.778	.113		
	RUSSIA	-1.168	.740	-.487	-1.577	.153	1.000	1.000

a. Dependent Variable: FDICUBA

Results for Category III (Least Developed Countries) Using the Independent Variable, Merchandise Trade

The multiple regression analysis, with FDI to Cuba as the dependent variable and Merchandise Trade for the least Developing countries, Jamaica, Haiti, Peru, Madagascar and Nepal as the independent variables did not revealed a significant relationship (F value = 2.386 with a p-value = 0.210) (Table 399). Therefore, there was not a significant correlation between the FDI to Cuba and Merchandise Trade for the least developing countries of Jamaica, Haiti, Peru, Madagascar and Nepal. Again, the beta coefficients were not significant, implying the null hypothesis was not rejected for these countries (Table 400). From the collinearity diagnostics, the variance inflation factors for two of the five countries were highly correlated with VIFs (variance inflation factor) of 7.526, 1.108, 8.650, 2.436 and 1.630 for Jamaica, Haiti, Peru, Madagascar and Nepal, respectively. (VIF greater than 5 is usually an indication of a multicollinearity problem.) A correlation analysis was also done and reinforced the high correlation among these variables. Hence, simple linear regression was conducted for each of these countries.

Table 399
Regression Analysis of Nepal, Haiti, Madagascar, Jamaica, Peru & FDI Cuba

ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	841.859	5	168.372	2.386	.210
	Residual	282.241	4	70.560		
	Total	1124.100	9			

a. Predictors: (Constant), NEPAL, JAMAICA, HAITI, MADAGASC, PERU
b. Dependent Variable: FDICUBA

Table 400
Regression Coefficient Analysis of Nepal, Haiti, Madagascar, Jamaica, Peru & FDI Cuba

Coefficients

		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
Model		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	20.574	56.130		.367	.733		
	JAMAICA	1.296	1.047	.851	1.238	.283	.133	7.526
	HAITI	-.645	.419	-.406	-1.539	.199	.902	1.108
	PERU	-7.830E-02	1.119	-.052	-.070	.948	.116	8.650
	MADAGASC	-7.543E-02	.408	-.072	-.185	.862	.411	2.436
	NEPAL	-1.611	1.336	-.386	-1.206	.294	.613	1.630

a. Dependent Variable: FDICUB

A simple linear regression analysis between FDI Cuba and Merchandise Trade for Jamaica revealed a significant positive relationship (β = 1.01, p-value =

0.038) (Tables 401 and 402). Therefore, there was a significant positive correlation between the FDI to Cuba and Merchandise Trade for Jamaica, implying the null hypothesis was rejected for this country. This was a reasonable result as Jamaica has been conducting FDI investment with Cuba, particularly expanding in the area of travel and tourism. Jamaica was attempting to build a coalition with Cuba's tourism industry (Journal of Commerce, 1998; Mesa-Lago, 2005).

Table 401
Regression Analysis of Jamaica & FDI Cuba

ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	490.519	1	490.519	6.194	.038
	Residual	633.581	8	79.198		
	Total	1124.100	9			

a. Predictors: (Constant), JAMAICA
b. Dependent Variable: FDICUBA

Table 402
Regression Coefficient Analysis of Jamaica & FDI Cuba

Coefficients

		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
Model		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	-53.175	24.622		-2.160	.063		
	JAMAICA	1.006	.404	.661	2.489	.038	1.000	1.000

a. Dependent Variable: FDICUBA

A simple linear regression analysis between FDI Cuba and Merchandise Trade for Haiti did not revealed a significant relationship (β = -0.306, p-value = 0.594) (Tables 403 and 404). Therefore, there was not a significant correlation between the FDI to Cuba and Merchandise Trade for Haiti, implying the null hypothesis was not rejected for this country.

Table 403
Regression Analysis of Haiti & FDI Cuba

ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	41.757	1	41.757	.309	.594
	Residual	1082.343	8	135.293		
	Total	1124.100	9			

a. Predictors: (Constant), HAITI
b. Dependent Variable: FDICUBA

Table 404
Regression Coefficient Analysis of Haiti & FDI Cuba

Coefficients

		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
Model		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	19.617	21.764		.901	.394		
	HAITI	-.306	.551	-.193	-.556	.594	1.000	1.000

a. Dependent Variable: FDICUBA

A simple linear regression analysis between FDI Cuba and Merchandise Trade for Peru did revealed a marginally significant positive relationship (β = 0.952, p-value = 0.052)(Tables 405 and 406) Therefore, a positive correlation existed between the FDI to Cuba and Merchandise Trade for Peru, implying the null hypothesis was rejected for this country.

Table 405
Regression Analysis of Peru & FDI Cuba

ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	442.304	1	442.304	5.190	.052
	Residual	681.796	8	85.225		
	Total	1124.100	9			

a. Predictors: (Constant), PERU
b. Dependent Variable: FDICUBA

Table 406
Regression Coefficient Analysis of Peru & FDI Cuba

Coefficients

		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
Model		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	-22.587	13.611		-1.659	.136		
	PERU	.952	.418	.627	2.278	.052	1.000	1.000

a. Dependent Variable: FDICUBA

A simple linear regression analysis between FDI Cuba and Merchandise Trade for Madagascar did not revealed a significant relationship (β = 0.128, p-value = 0.735) (Tables 407 and 408). Therefore, there was not a significant correlation between the FDI to Cuba and Merchandise Trade for Madagascar, implying the null hypothesis was not rejected for this country. This seems reasonable, as this country's development does not affect Cuba's FDI.

Table 407
Regression Analysis of Madagascar & FDI Cuba

ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	16.979	1	16.979	.123	.735
	Residual	1107.121	8	138.390		
	Total	1124.100	9			

a. Predictors: (Constant), MADAGASC
b. Dependent Variable: FDICUBA

Table 408
Regression Coefficient Analysis of Madagascar & FDI Cuba

Coefficients

		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
Model		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	2.040	16.581		.123	.905		
	MADAGASC	.128	.366	.123	.350	.735	1.000	1.000

a. Dependent Variable: FDICUBA

A simple linear regression analysis between FDI Cuba and Merchandise Trade for Nepal did not revealed a significant relationship (β = -1.62, p-value = 0.268) (Tables 409 and 410). Therefore, there was not a significant correlation between the FDI to Cuba and Merchandise Trade for Nepal, implying the null hypothesis was not rejected for this country. This seems reasonable since Cuba’s Merchandise Trade was not impacted by Nepal.

Table 409
Regression Analysis of Nepal & FDI Cuba

ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	169.306	1	169.306	1.419	.268
	Residual	954.794	8	119.349		
	Total	1124.100	9			

a. Predictors: (Constant), NEPAL
b. Dependent Variable: FDICUBA

Table 410
Regression Coefficient Analysis of Nepal & FDI Cuba

Coefficients

		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
Model		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	68.456	51.128		1.339	.217		
	NEPAL	-1.620	1.360	-.388	-1.191	.268	1.000	1.000

a. Dependent Variable: FDICUBA

Summary of Results for Hypothesis 7

Category I (Advanced Countries)

Insignificant relationship existed between FDI inflow to Cuba and Merchandise Trade for the United States, Germany, France and Spain. Marginally significant positive results existed for Japan.

Category II (Developing Countries)

Insignificant relationship existed between FDI inflow to Cuba and Merchandise Trade for China and the Russian Federation, while India showed a marginally significant positive result.

Category III (Least Developing Countries)

Significant positive relationship existed between FDI inflow to Cuba and Merchandise Trade for Jamaica. Insignificant results were found for Haiti, Madagascar and Nepal, while Peru showed a positive marginal result.

Results for Hypothesis 8

FDI to Cuba was the dependent variable. For the advanced countries, the independent variables were Environment Factors for the United States, Japan, Germany, France and Spain (Sawalha, 2007). The independent variables for the developing countries were Environment Factors for China, India and the Russian Federation (Sawalha, 2007). The independent variables for the Least Developed Countries (LCD's) were Environment Factors for Jamaica, Haiti, Peru, Madagascar and Nepal. The Republic of Cuba's Environment Factors was not included in the model as there were only three data points. The Environment Factors included one variable, Agriculture value added (measured in percent of Gross Domestic Product).

The eighth hypothesis to be tested is:

> Hypothesis H_{08}: The level of contribution of FDI inflow to Cuba is not significantly

related to the Environment Factors for the three groups of countries.

Hypothesis H_{A8}: The level of contribution of FDI inflow to Cuba is significantly related to the Environment Factors for the three groups of countries.

The multiple regression models to test Hypothesis 8 are listed below.

Category I (Advanced Countries)

$$FDI_{CUBA} = \alpha_O + \alpha_1 ENVIROFACTORS_{US} + \alpha_2 ENVIROFACTORS_{Japan} + \alpha_3 ENVIROFACTORS_{Germany} + \alpha_4 ENVIROFACTORS_{France} + \alpha_5 ENVIROFACTORS_{Spain} + \varepsilon_1$$

Categories II (Developing Countries)

$$FDI_{CUBA} = \beta_O + \beta_1 ENVIROFACTORS_{China} + \beta_2 ENVIROFACTORS_{India} + \beta_3 ENVIROFACTORS_{Russian\ Federation} + \varepsilon_2$$

Categories III (Least Developed Countries)

$$FDI_{CUBA} = \delta o + \delta_1 ENVIROFACTORS_{Jamaica} + \delta_2 ENVIROFACTORS_{Haiti} + \delta_3 ENVIROFACTORS_{Peru} + \delta_4 ENVIROFACTORS_{Madagascar} + \delta_5 ENVIROFACTORS_{Nepal} + \varepsilon_3$$

The results were presented for the independent variables measuring Agriculture value added for each of the three categories of countries.

Pearson Correlation Analysis

A Pearson correlation analysis among the advanced, developing and least developed of the 13 non oil-producing countries revealed a significant correlation between Agriculture value added with the country of Haiti and the FDI of Cuba (Table 411).

Table 411
Pearson Correlation Analysis for FDI Cuba and Agriculture, Value Added for all the Countries in the Study

FDI Cuba Pearson Correlation Sig. (2-Tailed) N	USA	Japan	Germany	France	Spain	China	India	Russian Federation
	-0.292 0.412 10	-0.544 0.104 10	No data	-0.330 0.352 10	-0.450 0.192 10	-0.271 0.449 10	-0.323 0.363 10	-0.146 0.687 10
Jamaica	Haiti	Peru	Madagascar	Nepal				
-0.210 0.559 10	-0.685* 0.029 10	-0.297 0.404 10	-0.373 0.288 10	-0.592 0.072 10				

Results for Category I (Advanced Countries) Using the Independent Variable, Agriculture Value Added

The multiple regression analysis, with FDI to Cuba as the dependent variable and Agriculture value added for the advanced countries, the United States, Japan, France and Spain as the independent variables, did not revealed a significant relationships. Germany was excluded from the analysis since the variable of the data was constant and insignificant for testing. From the ANOVA, the F-value = 1.065 with a p-value = 0.461, implying that the model was not significant (Table 412). This was also seen from the multiple regression analysis where the beta coefficients were not significant, implying the null hypothesis was not rejected for these countries (Table 413). Therefore, there was not a significant correlation between the FDI to Cuba and Agriculture value added for these advanced countries, the United States, Japan, France and Spain. From the collinearity diagnostics, the variance inflation factors (VIF) were 5.073, 6.709, 1.818 and 2.455 for the United States, Japan, France and Spain, respectively, implying a major multicollinearity problem. (A VIF greater than 5 is usually an indication of a multicollinearity problem.) A correlation analysis further reinforced this position. Simple linear regression was conducted for each of these countries.

Table 412
Regression Analysis of the United States, Japan, France, Spain & FDI Cuba

ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	517.145	4	129.286	1.065	.461
	Residual	606.955	5	121.391		
	Total	1124.100	9			

a. Predictors: (Constant), SPAIN, USA, FRANCE, JAPAN
b. Dependent Variable: FDICUBA

Table 413
Regression Coefficient of the United States, Japan, France, Spain & FDI Cuba

Coefficients

		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
Model		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	18.409	26.263		.701	.515		
	USA	30.273	26.157	.857	1.157	.299	.197	5.073
	JAPAN	-21.273	14.094	-1.285	-1.509	.192	.149	6.709
	FRANCE	.182	9.396	.009	.019	.985	.550	1.818
	SPAIN	-.591	9.098	-.033	-.065	.951	.407	2.455

a. Dependent Variable: FDICUBA

A simple linear regression analysis between FDI Cuba and Agriculture value added for the United States did not revealed a significant relationship (β = -10.33, p-value = 0.412). Therefore, there was not a significant correlation between the FDI to Cuba and Agriculture value added for the United States, implying the null hypothesis was not rejected for this country. The fact that there was no significant relationship was reinforcing the existing trade embargo between the United States and Cuba (Mesa-Lago, 2001) (Tables 414 and 415).

Table 414
Regression Analysis of the United States & FDI Cuba

ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	96.100	1	96.100	.748	.412
	Residual	1028.000	8	128.500		
	Total	1124.100	9			

a. Predictors: (Constant), USA
b. Dependent Variable: FDICUBA

Table 415
Regression Coefficient Analysis of the United States & FDI Cuba

Coefficients

		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
Model		B	Std. Error	Beta			Tolerance	VIF
	(Constant)	17.000	11.336		1.500	.172		
	USA	-10.333	11.949	-.292	-.865	.412	1.000	1.000

a. Dependent Variable: FDICUBA

A simple linear regression analysis between FDI Cuba and Agriculture value added for Japan did not revealed a significant relationship (β = -9.00, p-value = 0.104). Therefore, there was not a significant correlation between the FDI to Cuba and Agriculture value added for Japan, implying the null hypothesis was not rejected for this country (Tables 416 and 417).

Table 416
Regression Analysis of Japan & FDI Cuba

ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	332.100	1	332.100	3.355	.104
	Residual	792.000	8	99.000		
	Total	1124.100	9			

a. Predictors: (Constant), JAPAN
b. Dependent Variable: FDICUBA

Table 417
Regression Coefficient Analysis of Japan & FDI Cuba

Coefficients

		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
Model		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	23.000	8.927		2.577	.033		
	JAPAN	-9.000	4.914	-.544	-1.832	.104	1.000	1.000

a. Dependent Variable: FDICUBA

A simple linear regression analysis between FDI Cuba and Agriculture value added for France did not revealed a significant relationship (β = -7.00, p-value = 0.352) (Tables 418 and 419). Therefore, there was not a significant correlation between the FDI to Cuba and Agriculture value added for France, implying the null hypothesis was not rejected for this country. This result was surprising as France does provide significant FDI to Cuba (Travieso-Diaz & Trumbull, 2003).

Table 418
Regression Analysis of France & FDI Cuba

ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	122.500	1	122.500	.978	.352
	Residual	1001.600	8	125.200		
	Total	1124.100	9			

a. Predictors: (Constant), FRANCE
b. Dependent Variable: FDICUBA

Table 419

Regression Coefficient Analysis of France & FDI Cuba

Coefficients

Model		Unstandardized Coefficients B	Std. Error	Standardized Coefficients Beta	t	Sig.	Collinearity Statistics Tolerance	VIF
1	(Constant)	25.200	18.042		1.397	.200		
	FRANCE	-7.000	7.077	-.330	-.989	.352	1.000	1.000

a. Dependent Variable: FDICUBA

A simple linear regression analysis between FDI Cuba and Agriculture value added for Spain did not revealed a significant relationship (β = -7.94, p-value = 0.192) (Tables 420 and 421). Therefore, there was not a significant correlation between the FDI to Cuba and Agriculture value added for Spain, implying the null hypothesis was not rejected for this country. As above, the result not being relevant is surprising since Spain does provide significant FDI to Cuba (Travieso-Diaz & Trumbull, 2003).

Table 420

Regression Analysis of Spain & FDI Cuba

ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	227.211	1	227.211	2.027	.192
	Residual	896.889	8	112.111		
	Total	1124.100	9			

a. Predictors: (Constant), SPAIN

b. Dependent Variable: FDICUBA

Table 421
Regression Coefficient Analysis of Spain & FDI Cuba

Coefficients

		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
Model		B	Std. Error	Beta			Tolerance	VIF
	(Constant)	37.889	21.469		1.765	.116		
	SPAIN	-7.944	5.580	-.450	-1.424	.192	1.000	1.000

a. Dependent Variable: FDICUBA

Results for Category II (Developing Countries) Using the Independent Variable, Agriculture Value Added

The multiple regression analysis, with FDI to Cuba as the dependent variable and Agriculture value added for the developing countries, China, India and the Russian Federation as the independent variables, did not revealed a significant relationship. From the ANOVA, the F-value = 0.321 with a p-value = 0.811, implying that the model was not significant (Table 422). Therefore, there was not a significant correlation between the FDI to Cuba and Agriculture value added for these developing countries China, India and the Russian Federation, implying the null hypothesis was not rejected for these countries. The result not being relevant was surprising since China, the Russian Federation and recently India are providing significant FDI to Cuba; however, these countries are providing FDI to Cuba mostly in manufacturing product, services and energy resources (Cuban oil, 2008; Mesa-Lago, 2005). From the collinearity diagnostics, the variance inflation factors (VIF) were 10.278, 12.773 and 2.165 for China, India and the Russian Federation, respectively, implying a major multicollinearity problem (Table 423). (As stated before a VIF greater than 5 is usually an indication of a multicollinearity problem.) A correlation analysis further reinforced this position. Simple linear regression was conducted for each of these countries.

Table 422
Regression Analysis of Russian Federation, China, India & FDI Cuba

ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	155.401	3	51.800	.321	.811
	Residual	968.699	6	161.450		
	Total	1124.100	9			

a. Predictors: (Constant), RUSSIA, CHINA, INDIA
b. Dependent Variable: FDICUBA

Table 423
Regression Coefficient Analysis of Russian Federation, China, India & FDI Cuba

Coefficients

Model		Unstandardized Coefficients B	Std. Error	Standardized Coefficients Beta	t	Sig.	Collinearity Statistics Tolerance	VIF
1	(Constant)	32.508	34.456		.943	.382		
	CHINA	2.317	6.316	.446	.367	.726	.097	10.278
	INDIA	-3.517	5.275	-.903	-.667	.530	.078	12.773
	RUSSIA	3.126	7.901	.221	.396	.706	.462	2.165

a. Dependent Variable: FDICUBA

A simple linear regression analysis between FDI Cuba and Agriculture value added for China did not revealed a significant relationship (β = -1.41, p-value = 0.449). Therefore, there was not a significant correlation between the FDI to Cuba and Agriculture value added for China, implying the null hypothesis was not rejected for this country. The result not being relevant is surprising since China is conducting FDI investment in Cuba mostly in energy resources; however, open trades with China did not begin in Cuba until after 2003 (Mesa-Lago, 2005) (Tables 424 and 425).

Table 424

Regression Analysis of China & FDI Cuba

ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	82.547	1	82.547	.634	.449
	Residual	1041.553	8	130.194		
	Total	1124.100	9			

a. Predictors: (Constant), CHINA
b. Dependent Variable: FDICUBA

Table 425

Regression Coefficient Analysis of China & FDI Cuba

Coefficients

		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
Model		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	27.139	24.679		1.100	.303		
	CHINA	-1.409	1.769	-.271	-.796	.449	1.000	1.000

a. Dependent Variable: FDICUBA

A simple linear regression analysis between FDI Cuba and Agriculture value added for India did not revealed a significant relationship (β = -1.26, p-value = 0.363). As a result, there was not a significant correlation between the FDI to Cuba and Agriculture value added for India, implying the null hypothesis was not rejected for this country. As a reasonable result not being relevant is surprising since India has just recently begun FDI investment in Cuba;

however, mostly in tourism, manufacturing of vehicles, pharmaceutical products and energy resources in Cuba’s oil refinery (Cuban oil, 2008) (Cuba Economy, 2008)(Tables 426 and 427).

Table 426
Regression Analysis of India & FDI Cuba

ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	116.972	1	116.972	.929	.363
	Residual	1007.128	8	125.891		
	Total	1124.100	9			

a. Predictors: (Constant), INDIA
b. Dependent Variable: FDICUBA

Table 427
Regression Coefficient Analysis of India & FDI Cuba

Coefficients

		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
Model		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	34.462	27.989		1.231	.253		
	INDIA	-1.256	1.303	-.323	-.964	.363	1.000	1.000

a. Dependent Variable: FDICUBA

A simple linear regression analysis between FDI Cuba and Agriculture value added for the Russian Federation did not revealed a significant relationship

(β = -2.07, p-value = 0.687) (Tables 428 and 429). Therefore, there was not a significant correlation between the FDI to Cuba and Agriculture value added for the Russian Federation, implying the null hypothesis was not rejected for this country. The result not being relevant was surprising, considering Cuba's long-term trade and investment relationship with the Russian Federation (Mesa-Lago, 2005).

Table 428
Regression Analysis of Russian Federation & FDI Cuba

ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	24.029	1	24.029	.175	.687
	Residual	1100.071	8	137.509		
	Total	1124.100	9			

a. Predictors: (Constant), RUSSIA
b. Dependent Variable: FDICUBA

Table 429
Regression Coefficient Analysis of Russian Federation & FDI Cuba

Coefficients

		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
Model		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	19.714	28.979		.680	.516		
	RUSSIA	-2.071	4.955	-.146	-.418	.687	1.000	1.000

a. Dependent Variable: FDICUBA

Results for Category III (Least Developed Countries) Using the Independent Variable, Agriculture Value Added

The multiple regression analysis, with FDI to Cuba as the dependent variable and Agriculture value added for the least Developing countries, Jamaica, Haiti, Peru, Madagascar and Nepal as the independent variables did not revealed a significant relationship (F value = 4.631 with a p-value = 0.081) (Table 430). Therefore, there was not a significant correlation between the FDI to Cuba and Agriculture value added for the least developing countries of Jamaica, Haiti, Peru, Madagascar and Nepal. Again, the beta coefficients were not significant, implying the null hypothesis was not rejected for these countries (Table 431). From the collinearity diagnostics, the variance inflation factors for one of the five countries were highly correlated with VIFs (variance inflation factor) of 2.186, 3.341, 4.379, 2.521 and 7.346 for Jamaica, Haiti, Peru, Madagascar and Nepal, respectively. (VIF greater than 5 is usually an indication of a multicollinearity problem.) A correlation analysis was also done and reinforced with the correlation among these variables. Hence, simple linear regression was conducted for each of these countries.

Table 430
Regression Analysis of Nepal, Haiti, Madagascar, Jamaica, Peru & FDI Cuba

ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	958.526	5	191.705	4.631	.081
	Residual	165.574	4	41.394		
	Total	1124.100	9			

a. Predictors: (Constant), NEPAL, JAMAICA, MADAGASC, HAITI, PERU
b. Dependent Variable: FDICUBA

Table 431
Regression Coefficient Analysis of Nepal, Haiti, Madagascar, Jamaica, Peru & FDI Cuba

Coefficients

		Unstandardized Coefficients		Standardized Coefficients	T	Sig.	Collinearity Statistics	
Model		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	85.834	68.269		1.257	.277		
	JAMAICA	1.886	1.440	.371	1.309	.261	.458	2.186
	HAITI	-.666	.283	-.825	-2.352	.078	.299	3.341
	PERU	16.901	5.689	1.193	2.971	.041	.228	4.379
	MADAGASC	.210	1.900	.034	.111	.917	.397	2.521
	NEPAL	-5.709	2.398	-1.239	-2.381	.076	.136	7.346

a. Dependent Variable: FDICUBA

A simple linear regression analysis between FDI Cuba and Agriculture value added for Jamaica did not revealed a significant relationship (β = -1.07, p-value = 0.559) (Tables 432 and 433). Therefore, there was not a significant correlation between the FDI to Cuba and Agriculture value added for Jamaica, implying the null hypothesis was not rejected for this country.

Table 432
Regression Analysis of Jamaica & FDI Cuba

ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	49.806	1	49.806	.371	.559
	Residual	1074.294	8	134.287		
	Total	1124.100	9			

a. Predictors: (Constant), JAMAICA
b. Dependent Variable: FDICUBA

Table 433
Regression Coefficient Analysis of Jamaica & FDI Cuba

Coefficients

		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
Model		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	13.899	10.818		1.285	.235		
	JAMAICA	-1.069	1.755	-.210	-.609	.559	1.000	1.000

a. Dependent Variable: FDICUBA

A simple linear regression analysis between FDI Cuba and Agriculture value added for Haiti revealed a significant negative relationship (β = -0.553, with a p-value = 0.029) (Tables 434 and 435). Therefore, there was a significant negative correlation between the FDI to Cuba and Agriculture value added for Haiti, implying the null hypothesis was rejected for this country. As a reasonable result, there is no significant FDI being conducted between Cuba and Haiti; in turn, these two countries are mostly FDI dependents.

Table 434
Regression Analysis of Haiti & FDI Cuba

ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	527.966	1	527.966	7.085	.029
	Residual	596.134	8	74.517		
	Total	1124.100	9			

a. Predictors: (Constant), HAITI
b. Dependent Variable: FDICUBA

Table 435
Regression Coefficient Analysis of Haiti & FDI Cuba

Coefficients

		Unstandardized Coefficients		Standardized Coefficients	T	Sig.	Collinearity Statistics	
Model		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	16.497	4.286		3.849	.005		
	HAITI	-.553	.208	-.685	-2.662	.029	1.000	1.000

a. Dependent Variable: FDICUBA

A simple linear regression analysis between FDI Cuba and Agriculture value added for Peru did not revealed a significant relationship (β = -4.21, p-value = 0.404)(Tables 436 and 437) Therefore, there was not a significant correlation between the FDI to Cuba and Agriculture value added for Peru, implying the null hypothesis was not rejected for this country.

Table 436
Regression Analysis of Peru & FDI Cuba

ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	99.457	1	99.457	.777	.404
	Residual	1024.643	8	128.080		
	Total	1124.100	9			

a. Predictors: (Constant), PERU
b. Dependent Variable: FDICUBA

Table 437
Regression Coefficient Analysis of Peru & FDI Cuba

Coefficients

		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
Model		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	40.571	37.474		1.083	.311		
	PERU	-4.214	4.782	-.297	-.881	.404	1.000	1.000

a. Dependent Variable: FDICUBA

A simple linear regression analysis between FDI Cuba and Agriculture value added for Madagascar did not revealed a significant relationship (β = -2.33, p-value = 0.288) (Tables 438 and 439). Therefore, there was not a significant correlation between the FDI to Cuba and Agriculture value added for Madagascar, implying the null hypothesis was not rejected for this country.

Table 438
Regression Analysis of Madagascar & FDI Cuba

ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	156.723	1	156.723	1.296	.288
	Residual	967.377	8	120.922		
	Total	1124.100	9			

a. Predictors: (Constant), MADAGASC
b. Dependent Variable: FDICUBA

Table 439
Regression Coefficient Analysis of Madagascar & FDI Cuba

Coefficients

		Unstandardized Coefficients		Standardized Coefficients	T	Sig.	Collinearity Statistics	
Model		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	75.000	59.218		1.267	.241		
	MADAGASC	-2.329	2.046	-.373	-1.138	.288	1.000	1.000

a. Dependent Variable: FDICUBA

A simple linear regression analysis between FDI Cuba and Agriculture value added for Nepal did not revealed a significant relationship (β = -2.73, p-value = 0.072) (Tables 440 and 441). Therefore, there was not a significant correlation between the FDI to Cuba and Agriculture value added for Nepal, implying the null hypothesis was not rejected for this country.

Table 440
Regression Analysis of Nepal & FDI Cuba

ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	393.620	1	393.620	4.311	.072
	Residual	730.480	8	91.310		
	Total	1124.100	9			

a. Predictors: (Constant), NEPAL
b. Dependent Variable: FDICUBA

Table 441
Regression Coefficient Analysis of Nepal & FDI Cuba

Coefficients

		Unstandardized Coefficients		Standardized Coefficients	T	Sig.	Collinearity Statistics	
Model		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	111.083	49.885		2.227	.057		
	NEPAL	-2.728	1.314	-.592	-2.076	.072	1.000	1.000

a. Dependent Variable: FDICUBA

Summary of Results for Hypothesis 8

Category I (Advanced Countries)

Insignificant results existed between FDI inflow to Cuba and Agriculture value added for the United States, Japan, France and Spain. Germany was not tested based on insufficient data.

Category II (Developing Countries)

Insignificant results existed between FDI inflow to Cuba and Agriculture value added for China, India and the Russian Federation.

Category III (Least Developing Countries)

Significant negative relationship existed between FDI inflow to Cuba and Agriculture value added for Haiti. Insignificant results existed for Jamaica, Peru, Madagascar and Nepal.

Results for Hypothesis 9

FDI to Cuba was the dependent variable. For the advanced countries, the independent variables were Governmental Factors for the United States, Japan, Germany, France and Spain (Sawalha, 2007). The independent variables for the developing countries were Governmental Factors for China, India and the Russian Federation (Sawalha, 2007). The independent variables for the Least Developed Countries (LCD’s) were Governmental Factors for Jamaica, Haiti, Peru, Madagascar and Nepal. The Republic of Cuba’s Governmental Factors was not included in the model as there were only three data points. The Governmental Factors included one variable, Worker’s Remittances and Compensation of Employees, received (measured in current US$). Worker’s remittances and Compensation of Employees is part of a country’s labor system; therefore, being part of the government.

The ninth hypothesis to be tested is:

Hypothesis H_{09}: The level of contribution of FDI inflow to Cuba is not significantly related to the Governmental Factors for the three groups of countries.

Hypothesis H_{A9}: The level of contribution of FDI inflow to Cuba is significantly related to the Governmental Factors for the three groups of countries.

The multiple regression models to test Hypothesis 9 are listed below.

Category I (Advanced Countries)

$FDI_{CUBA} = \alpha_O + \alpha_1 GOVERNMENTALFACTORS_{US} +$

$\alpha_2 GOVERNMENTALFACTORS_{Japan} +$

$\alpha_3 GOVERNMENTALFACTORS_{Germany}$ +

$\alpha_4 GOVERNMENTALFACTORS_{France}$ +

$\alpha_5 GOVERNMENTALFACTORS_{Spain} + \varepsilon_1$

Categories II (Developing Countries)

$FDI_{CUBA} = \beta_0 + \beta_1 GOVERNMENTALFACTORS_{China}$ +

$\beta_2 GOVERNMENTALFACTORS_{India}$ +

$\beta_3 GOVERNMENTALFACTORS_{Russian\ Federation} + \varepsilon_2$

Categories III (Least Developed Countries)

$FDI_{CUBA} = \delta o + \delta_1 GOVERNMENTALFACTORS_{Jamaica}$ +

$\delta_2 GOVERNMENTALFACTORS_{Haiti}$ +

$\delta_3 GOVERNMENTALFACTORS_{Peru}$ +

$\delta_4 GOVERNMENTALFACTORS_{Madagascar}$ +

$\delta_5 GOVERNMENTALFACTORS_{Nepal} + \varepsilon_3$

The results were presented for the independent variables measuring Worker's Remittances and Employees Compensation for each of the three categories of countries.

<u>Pearson Correlation Analysis</u>

A Pearson correlation analysis among the advanced, developing and least developed of the 13 non oil-producing countries revealed a significant correlation between Worker's Remittances and Employees Compensation with the countries of the Russian Federation, Peru and the FDI of Cuba (Table 442).

Table 442
Pearson Correlation Analysis for FDI Cuba and Worker's Remittances and Employees Compensation for all the Countries in the Study

FDI Cuba Pearson Correlation Sig. (2-Tailed) N	USA	Japan	Germany	France	Spain	China	India	Russian Federation
	-0.023 0.951 10	-0.004 0.991 10	0.564 0.089 10	0.539 0.108 10	0.508 0.134 10	0.428 0.217 10	0.413 0.235 10	0.710* 0.021 10
Jamaica	**Haiti**	**Peru**	**Madagascar**	**Nepal**				
0.495 0.145 10	0.374 0.287 10	0.653* 0.041 10	-0.447 0.196 10	0.543 0.105 10				

<u>Results for Category I (Advanced Countries) Using the First Independent Variable, Worker's Remittances and Employees Compensation</u>

The multiple regression analysis, with FDI to Cuba as the dependent variable and Worker's

Remittances and Employees Compensation for the advanced countries, the United States, Japan, Germany, France and Spain as the independent variables, did not revealed a significant relationships. From the ANOVA, the F-value = 2.066 with a p-value = 0.251, implying that the model was not significant (Table 443). This was also seen from the multiple regression analysis where the beta coefficients were not significant, implying the null hypothesis was not rejected for these countries (Table 444). Therefore, there was not a significant correlation between the FDI to Cuba and Worker's Remittances and Employees Compensation for these advanced countries, the United States, Japan, Germany, France and Spain. From the collinearity diagnostics, the variance inflation factors (VIF) were 4.350, 1.678, 208.830, 52.595 and 115.116 for the United States, Japan, Germany, France and Spain, respectively, implying a major multicollinearity problem for three of the five variables. (A VIF greater than 5 is usually an indication of a multicollinearity problem.) This implies that three of the independent variables are highly correlated and cannot be utilized for multiple regression analysis. A correlation analysis further reinforced this position. Simple linear regression was conducted for each of these countries.

Table 443
Regression Analysis of the United States, Japan, Germany, France, Spain & FDI Cuba

ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	810.301	5	162.060	2.066	.251
	Residual	313.799	4	78.450		
	Total	1124.100	9			

a. Predictors: (Constant), SPAIN, JAPAN, USA, FRANCE, GERMANY
b. Dependent Variable: FDICUBA

Table 444
Regression Coefficient of the United States, Japan, Germany, France, Spain & FDI Cuba

Coefficients

		Unstandardized Coefficients		Standardized Coefficients	T	Sig.	Collinearity Statistics	
Model		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	185.979	141.612		1.313	.259		
	USA	-4.890E-08	.000	-.645	-1.171	.306	.230	4.350
	JAPAN	1.871E-08	.000	.577	1.687	.167	.596	1.678
	GERMANY	4.230E-08	.000	6.238	1.634	.178	.005	208.830
	FRANCE	-2.145E-08	.000	-3.193	-1.666	.171	.019	52.595
	SPAIN	-1.054E-08	.000	-2.145	-.757	.491	.009	115.116

a. Dependent Variable: FDICUBA

A simple linear regression analysis between FDI Cuba and Worker's Remittances and Employees Compensation for the United States did not revealed a significant relationship (β = 0.0000, p-value = 0.951). Therefore, there was not a significant correlation between the FDI to Cuba and Worker's Remittances and Employees Compensation for the United States, implying the null hypothesis was not rejected for this country. The fact that there was no significant relationship was reinforcing the existing trade embargo between the United States and Cuba (Mesa-Lago, 2001) (Tables 445 and 446).

Table 445
Regression Analysis of the United States & FDI Cuba

ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	.574	1	.574	.004	.951
	Residual	1123.526	8	140.441		
	Total	1124.100	9			

a. Predictors: (Constant), USA
b. Dependent Variable: FDICUBA

Table 446
Regression Coefficient Analysis of the United States & FDI Cuba

Coefficients

		Unstandardized Coefficients		Standardized Coefficients	T	Sig.	Collinearity Statistics	
Model		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	12.519	75.457		.166	.872		
	USA	-1.713E-09	.000	-.023	-.064	.951	1.000	1.000

a. Dependent Variable: FDICUBA

A simple linear regression analysis between FDI Cuba and Worker's Remittances and Employees Compensation for Japan did not revealed a significant relationship (β = 0.0000, p-value = 0.991). Therefore, there was not a significant correlation between the FDI to Cuba and Worker's Remittances and Employees Compensation for Japan, implying the null hypothesis was not rejected for this country. (Tables 447 and 448).

Table 447
Regression Analysis of Japan & FDI Cuba

ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	1.784E-02	1	1.784E-02	.000	.991
	Residual	1124.082	8	140.510		
	Total	1124.100	9			

a. Predictors: (Constant), JAPAN
b. Dependent Variable: FDICUBA

Table 448
Regression Coefficient Analysis of Japan & FDI Cuba

Coefficients

		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
Model		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	7.875	16.001		.492	.636		
	JAPAN	-1.291E-10	.000	-.004	-.011	.991	1.000	1.000

a. Dependent Variable: FDICUBA

A simple linear regression analysis between FDI Cuba and Worker's Remittances and Employees Compensation for Germany did not revealed a significant relationship (β = 0.0000, p-value = 0.089) (Tables 449 and 450). Therefore, there was not a significant correlation between the FDI to Cuba and Worker's Remittances and Employees Compensation for Germany, implying the null hypothesis was not rejected for this country.

Table 449
Regression Analysis of Germany & FDI Cuba

ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	357.858	1	357.858	3.736	.089
	Residual	766.242	8	95.780		
	Total	1124.100	9			

a. Predictors: (Constant), GERMANY
b. Dependent Variable: FDICUBA

Table 450

Regression Coefficient Analysis of Germany & FDI Cuba

Coefficients

		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
Model		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	-13.610	11.451		-1.189	.269		
	GERMANY	3.826E-09	.000	.564	1.933	.089	1.000	1.000

a. Dependent Variable: FDICUBA

A simple linear regression analysis between FDI Cuba and Worker's Remittances and Employees Compensation for France did not revealed a significant relationship (β = 0.0000, p-value = 0.108) (Tables 451 and 452). Therefore, there was not a significant correlation between the FDI to Cuba and Worker's Remittances and Employees Compensation for France, implying the null hypothesis was not rejected for this country. This result was surprising as France does provide significant FDI to Cuba (Travieso-Diaz & Trumbull, 2003).

Table 451
Regression Analysis of France & FDI Cuba

ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	326.860	1	326.860	3.280	.108
	Residual	797.240	8	99.655		
	Total	1124.100	9			

a. Predictors: (Constant), FRANCE
b. Dependent Variable: FDICUBA

Table 452
Regression Coefficient Analysis of France & FDI Cuba

Coefficients

		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
Model		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	-31.812	22.044		-1.443	.187		
	FRANCE	3.622E-09	.000	.539	1.811	.108	1.000	1.000

a. Dependent Variable: FDICUBA

A simple linear regression analysis between FDI Cuba and Worker's Remittances and Employees Compensation for Spain did not revealed a significant relationship (β = 0.0000, p-value = 0.134) (Tables 453 and 454). Therefore, there was not a significant correlation between the FDI to Cuba and Worker's Remittances and Employees Compensation for Spain, implying the null hypothesis was not rejected for this country. As above, the result not being relevant is surprising since Spain does provide significant FDI to Cuba (Travieso-Diaz & Trumbull, 2003) (Mesa-Lago, 2005).

Table 453
Regression Analysis of Spain & FDI Cuba

ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	290.116	1	290.116	2.783	.134
	Residual	833.984	8	104.248		
	Total	1124.100	9			

a. Predictors: (Constant), SPAIN
b. Dependent Variable: FDICUBA

Table 454
Regression Coefficient Analysis of Spain & FDI Cuba

Coefficients

		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
Model		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	-8.345	10.146		-.823	.435		
	SPAIN	2.496E-09	.000	.508	1.668	.134	1.000	1.000

a. Dependent Variable: FDICUBA

<u>Results for Category II (Developing Countries) Using the Second Independent Variable, Worker’s Remittances and Employees Compensation</u>

The multiple regression analysis, with FDI to Cuba as the dependent variable and Worker’s Remittances and Employees Compensation for the developing countries, China, India and the Russian Federation as the independent variables, did not revealed a significant relationship. From the ANOVA, the F-value = 3.834 with a p-value = 0.076, implying that the model was not significant (Table 455). Therefore, there was not a significant correlation between the FDI to Cuba and Worker's Remittances and Employees Compensation for these developing countries China, India and the Russian Federation, implying the null hypothesis was not rejected for these countries. From the collinearity diagnostics, the variance inflation factors (VIF) were 25.797, 24.038 and 4.099 for China, India and the Russian Federation, respectively, implying a major multicollinearity problem for China and India (Table 456). (As stated before a VIF greater than 5 is usually an indication of a multicollinearity problem.) This implies that two of the three independent variables are highly correlated and cannot be utilized for multiple regression analysis. A correlation analysis further reinforced this position. Simple linear regression was conducted for each of these countries.

Table 455
Regression Analysis of Russian Federation, China, India & FDI Cuba

ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	738.771	3	246.257	3.834	.076
	Residual	385.329	6	64.222		
	Total	1124.100	9			

a. Predictors: (Constant), RUSSIA, INDIA, CHINA
b. Dependent Variable: FDICUBA

Table 456
Regression Coefficient Analysis of Russian Federation, China, India & FDI Cuba

Coefficients

		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
Model		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	-8.468	12.412		-.682	.521		
	CHINA	-4.661E-10	.000	-.390	-.321	.759	.039	25.797
	INDIA	-5.803E-10	.000	-.401	-.342	.744	.042	24.038
	RUSSIA	1.591E-08	.000	1.393	2.878	.028	.244	4.099

a. Dependent Variable: FDICUBA

A simple linear regression analysis between FDI Cuba and Worker’s Remittances and Employees Compensation for China did not revealed a significant relationship (β = 0.0000 p-value = 0.217). Therefore, there was not a significant correlation between the FDI to Cuba and Worker’s Remittances and Employees Compensation for China, implying the null hypothesis was not rejected for this country. The result not being relevant is surprising since China is conducting FDI investment with Cuba (Mesa-Lago, 2005) (Tables 457 and 458).

Table 457
Regression Analysis of China & FDI Cuba

ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
	Regression	205.802	1	205.802	1.793	.217
	Residual	918.298	8	114.787		
	Total	1124.100	9			

a. Predictors: (Constant), CHINA
b. Dependent Variable: FDICUBA

Table 458
Regression Coefficient Analysis of China & FDI Cuba

Coefficients

		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
Model		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	3.281E-02	6.653		.005	.996		
	CHINA	5.115E-10	.000	.428	1.339	.217	1.000	1.000

a. Dependent Variable: FDICUBA

A simple linear regression analysis between FDI Cuba and Worker's Remittances and Employees Compensation for India did not revealed a significant relationship (β = 0.0000, p-value = 0.235). As a result, there was not a significant correlation between the FDI to Cuba and Worker's Remittances and Employees Compensation for India, implying the null hypothesis was not rejected for this country. India has just recently begun FDI investment in Cuba mostly in tourism, manufacturing of vehicles, pharmaceutical products and energy exploration in Cuba's oil refinery (Cuba trade, 2008) (Cuba Economy, 2008)(Tables 459 and 460).

Table 459
Regression Analysis of India & FDI Cuba

ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	191.882	1	191.882	1.647	.235
	Residual	932.218	8	116.527		
	Total	1124.100	9			

a. Predictors: (Constant), INDIA
b. Dependent Variable: FDICUBA

Table 460

Regression Coefficient Analysis of India & FDI Cuba

Coefficients

		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
Model		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	-3.385	9.288		-.364	.725		
	INDIA	5.984E-10	.000	.413	1.283	.235	1.000	1.000

a. Dependent Variable: FDICUBA

A simple linear regression analysis between FDI Cuba and Worker's Remittances and Employees Compensation for the Russian Federation revealed a significant positive relationship (β = 0.0000, p-value = 0.021) (Tables 461 and 462). Therefore, there was a significant positive correlation between the FDI to Cuba and Worker's Remittances and Employees Compensation for the Russian Federation, implying the null hypothesis was rejected for this country. The result being relevant is considering Cuba's long term trade and FDI investment relationship with the Russian Federation in agricultural, manufacturing and recently oil exploration (Mesa-Lago, 1979) (Mesa-Lago, 2001) (Mesa-Lago, 2005)(Cuba Economy, 2008)(Chloe, 2008) This seems reasonable, as the Russian Federation

Worker's Remittances and Employees Compensation increases it would imply an increase in FDI to Cuba.

Table 461
Regression Analysis of Russian Federation & FDI Cuba

ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	567.343	1	567.343	8.152	.021
	Residual	556.757	8	69.595		
	Total	1124.100	9			

a. Predictors: (Constant), RUSSIA
b. Dependent Variable: FDICUBA

Table 462
Regression Coefficient Analysis of Russian Federation & FDI Cuba

Coefficients

		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
Model		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	-9.592	6.606		-1.452	.185		
	RUSSIA	8.113E-09	.000	.710	2.855	.021	1.000	1.000

a. Dependent Variable: FDICUBA

Results for Category III (Least Developed Countries) Using the Third Independent Variable, Worker's Remittances and Employees Compensation

The multiple regression analysis, with FDI to Cuba as the dependent variable and Worker's Remittances and Employees Compensation for the least

Developing countries, Jamaica, Haiti, Peru, Madagascar and Nepal as the independent variables revealed a significant positive relationship (F value = 14.722 with a p-value = 0.011) (Table 463). Therefore, there were significant positive relationships between the FDI to Cuba and Worker's Remittances and Employees Compensation for Jamaica (beta coefficient = 1.199E-07 with a p-value = 0.035) while Haiti (beta coefficient = -1.797E-07 and a p-value = 0.007) indicated a negative relationship (Table 464). This result may be attributed to Cuba conducting FDI investment with Jamaica by sending Cuban teachers to improve Jamaica's education (Hickling-Hudson, 2004). On the other hand, Cuba and Haiti does share a common trade relationship; however, there is no significant FDI being conducted between both countries. The disparity between the collinearity diagnostics, the variance inflation factors for all the countries were highly correlated with VIFs (variance inflation factor) of 222.355, 65.348, 69.695, 9.437 and 205.521 for Jamaica, Haiti, Peru, Madagascar and Nepal, respectively. (VIF greater than 5 is usually an indication of a multicollinearity problem.) A correlation analysis was also done and reinforced with the correlation among these variables. Hence, simple linear regression was conducted for each of these countries.

Table 463
Regression Analysis of Nepal, Haiti, Madagascar, Jamaica, Peru & FDI Cuba

ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
	Regression	1066.163	5	213.233	14.722	.011
	Residual	57.937	4	14.484		
	Total	1124.100	9			

a. Predictors: (Constant), NEPAL, MADAGASC, HAITI, PERU, JAMAICA
b. Dependent Variable: FDICUBA

Table 464
Regression Coefficient Analysis of Nepal, Haiti, Madagascar, Jamaica, Peru & FDI Cuba

Coefficients

		Unstandardized Coefficients		Standardized Coefficients	T	Sig.	Collinearity Statistics	
Model		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	-32.127	43.947		-.731	.505		
	JAMAICA	1.199E-07	.000	5.323	3.145	.035	.004	222.355
	HAITI	-1.797E-07	.000	-4.635	-5.052	.007	.015	65.348
	PERU	2.943E-08	.000	1.412	1.490	.210	.014	69.695
	MADAGASC	1.551E-07	.000	.032	.091	.932	.106	9.437
	NEPAL	-2.912E-08	.000	-1.590	-.977	.384	.005	205.521

a. Dependent Variable: FDICUBA

A simple linear regression analysis between FDI Cuba and Worker's Remittances and Employees Compensation for Jamaica did not revealed a significant relationship (β = 0.0000, p-value = 0.145) (Tables 465 and 466). Therefore, there was not a significant correlation between the FDI to Cuba and Worker's Remittances and Employees Compensation for Jamaica, implying the null hypothesis was not rejected for this country.

Table 465
Regression Analysis of Jamaica & FDI Cuba

ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	275.848	1	275.848	2.602	.145
	Residual	848.252	8	106.032		
	Total	1124.100	9			

a. Predictors: (Constant), JAMAICA
b. Dependent Variable: FDICUBA

Table 466
Regression Coefficient Analysis of Jamaica & FDI Cuba

Coefficients

		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
Model		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	-7.537	9.992		-.754	.472		
	JAMAICA	1.116E-08	.000	.495	1.613	.145	1.000	1.000

a. Dependent Variable: FDICUBA

A simple linear regression analysis between FDI Cuba and Worker's Remittances and Employees Compensation for Haiti did not revealed a significant relationship (β = 0.0000, p-value = 0.287) (Tables 467 and 468). Therefore, there was not a significant correlation between the FDI to Cuba and Worker's Remittances and Employees Compensation for Haiti, implying the null hypothesis was not rejected for this country.

Table 467

Regression Analysis of Haiti & FDI Cuba

ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	157.173	1	157.173	1.300	.287
	Residual	966.927	8	120.866		
	Total	1124.100	9			

a. Predictors: (Constant), HAITI

b. Dependent Variable: FDICUBA

Table 468

Regression Coefficient Analysis of Haiti & FDI Cuba

Coefficients

		Unstandardized Coefficients		Standardized Coefficients	T	Sig.	Collinearity Statistics	
Model		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	-3.372	10.313		-.327	.752		
	HAITI	1.449E-08	.000	.374	1.140	.287	1.000	1.000

a. Dependent Variable: FDICUBA

A simple linear regression analysis between FDI Cuba and Worker's Remittances and Employees Compensation for Peru revealed a significant positive relationship (β = 0.0000, p-value = 0.041)(Tables 469 and 470) Therefore, there was a significant positive correlation between the FDI to Cuba and Worker's Remittances and Employees Compensation for Peru, implying the null hypothesis was rejected for this country. This result was surprising as there is no evidence from the study that Peru is providing significant FDI to Cuba.

Table 469
Regression Analysis of Peru & FDI Cuba

ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	479.339	1	479.339	5.947	.041
	Residual	644.761	8	80.595		
	Total	1124.100	9			

a. Predictors: (Constant), PERU
b. Dependent Variable: FDICUBA

Table 470

Regression Coefficient Analysis of Peru & FDI Cuba

Coefficients

		Unstandardized Coefficients		Standardized Coefficients	T	Sig.	Collinearity Statistics	
Model		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	-7.137	6.714		-1.063	.319		
	PERU	1.361E-08	.000	.653	2.439	.041	1.000	1.000

a. Dependent Variable: FDICUBA

A simple linear regression analysis between FDI Cuba and Worker's Remittances and Employees Compensation for Madagascar did not revealed a significant relationship (β = 0.0000, p-value = 0.196) (Tables 471 and 472). Therefore, there was not a significant correlation between the FDI to Cuba and Worker's Remittances and Employees Compensation for Madagascar, implying the null hypothesis was not rejected for this country.

Table 471

Regression Analysis of Madagascar & FDI Cuba

ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	224.237	1	224.237	1.994	.196
	Residual	899.863	8	112.483		
	Total	1124.100	9			

a. Predictors: (Constant), MADAGASC

b. Dependent Variable: FDICUBA

Table 472
Regression Coefficient Analysis of Madagascar & FDI Cuba

Coefficients

		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
Model		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	34.565	19.320		1.789	.111		
	MADAGASC	-2.193E-06	.000	-.447	-1.412	.196	1.000	1.000

a. Dependent Variable: FDICUBA

A simple linear regression analysis between FDI Cuba and Worker's Remittances and Employees Compensation for Nepal did not revealed a significant relationship (β = 0.0000, p-value = 0.105) (Tables 473 and 474). Therefore, there was not a significant correlation between the FDI to Cuba and Worker's Remittances and Employees Compensation for Nepal, implying the null hypothesis was not rejected for this country.

Table 473
Regression Analysis of Nepal & FDI Cuba

ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	331.057	1	331.057	3.340	.105
	Residual	793.043	8	99.130		
	Total	1124.100	9			

a. Predictors: (Constant), NEPAL
b. Dependent Variable: FDICUBA

Table 474
Regression Coefficient Analysis of Nepal & FDI Cuba

Coefficients

		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
Model		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	.663	4.974		.133	.897		
	NEPAL	9.940E-09	.000	.543	1.827	.105	1.000	1.000

a. Dependent Variable: FDICUBA

Summary of Results for Hypothesis 9

Category I (Advanced Countries)

Insignificant results existed between FDI inflow to Cuba and Worker's Remittances and Employees Compensation for the United States, Japan, Germany, France and Spain.

Category II (Developing Countries)

Significant positive relationship existed between FDI inflow to Cuba and Worker's Remittances and Employees Compensation for the Russian Federation. Insignificant results were found for China and India.

Category III (Least Developing Countries)

Multiple regression results are not appropriate when there are multicollinearity problems. Significant positive relationship existed between FDI inflow to Cuba and Worker’s Remittances and Employees Compensation for Peru, while insignificant results were found for Jamaica, Haiti, Madagascar and Nepal.

CHAPTER 5

CONCLUSION

Introduction

This chapter summarized the empirical results from Chapter 4. All nine hypotheses were discussed and a summary of the results was presented for the 13 countries in the study. The theoretical and practical implications were also discussed, as well as, the limitation of this study and suggestions for future research.

Overview

The research was about the relationship between FDI inflows to Cuba and macroeconomic variables from 13 countries. These countries were grouped into three different categories, advanced countries, developing countries and least developed countries. The countries classified as advanced countries were United States, Japan, France, Germany and Spain. The developing countries were China, India and the Russian Federation and the least developed countries were Jamaica, Haiti, Peru, Madagascar and Nepal. The variables tested were GNI per capita, Financial Capital, Level of Technology, Human Capital, Energy and Natural Resources, Transportation and Communication, Market Type, Environment Factors and Governmental Factors.

Summary of the Findings

The findings for the thirteen countries, categorized as advanced, developing, and less developed, were as follows.

The results for Hypothesis 1, FDI to Cuba was significantly related to GNI per capita, were shown for the three categories of countries (Table 468). For Category I countries, significant positive relationships were found for Germany, France and Spain. This was a reasonable result since these European countries invested in Cuba. Insignificant results were found for the United States and Japan. The findings for the United States were not surprising and supported the effectiveness of U.S. trade embargo with Cuba. The findings for Japan were also not surprising because Japan did not have a very strong political and economic relationship with Cuba. For category II countries, significant positive relationship existed between FDI inflow to Cuba and GNI per capita for the Russian Federation. This was a reasonable result since the Russian Federation has a long political and economic relationship with Cuba (Mesa-Lago, 2005). Insignificant results were found for China while India showed a marginal positive result. China's relationship with Cuba was primarily based on similar political agendas and hence, GNI per capita did not appear significant. India's marginal significant result reinforced India's investments in Cuba. For Category III countries, significant positive relationship existed between FDI inflow to Cuba and GNI per capita for Peru. This was a surprising result, since Peru was not providing significant FDI to Cuba. Insignificant results were found for Jamaica, Haiti, Madagascar and Nepal indicating no correlation among the GNI per capita of these countries and FDI to Cuba. The results for these developing countries were reasonable as these countries contributed minimally to FDI.

The results for Hypothesis 2, FDI to Cuba was significantly related to financial capital formation in the thirteen countries, were shown below. Two independent variables, gross fixed capital formation and gross capital formation, were used to test this hypothesis. Empirical findings for the first independent variable, gross fixed capital formation, revealed insignificant relationships for all Categories I countries (United States, Japan, France, Germany and Spain). For the second independent variable, gross capital formation, similar insignificants results were found for these Category I countries. Hence, capital formation in these developed countries was not significantly related to FDI to Cuba. The insignificance of capital formation in the U.S. and Japan with FDI to Cuba was not surprising. However, the insignificant results for France, Germany and Spain were surprising. Perhaps, the FDI to Cuba from these countries was small compared to the value of capital formation per year. Using gross fixed capital formation for Category II countries, a significant positive relationship was found for India. This was a reasonable result as India was providing FDI to Cuba (Cuba trade, 2008). Insignificant relationships were found for China and the Russian Federation. As stated before, insignificant results for China were reasonable. However, insignificant results for the Russian Federation were surprising, considering the strong political and economic ties that it had with Cuba. For the next independent variable, gross capital formation for Category II countries, insignificant relationship existed for China and the Russian Federation. However, a marginal positive relationship was found for India, a reasonable result as India had been providing significant FDI to Cuba (Cuba trade, 2008). Using gross fixed capital formation for Category III countries, insignificant relationship existed for

Jamaica, Haiti, Peru, Madagascar and Nepal. For gross capital formation for Category III countries, insignificant relationship existed for Jamaica, Haiti, Peru and Madagascar. Again, these insignificant results for these less developing countries were reasonable. A marginal positive relationship between FDI to Cuba and gross capital formation was found for Nepal. There was no clear justification for this result and hence it was most likely a spurious correlation.

The results for Hypothesis 3, FDI to Cuba was significantly related to the level of technology in the thirteen countries, were shown below. Two independent variables, high technology and industry value added, were used to test this hypothesis. Empirical findings for high technology exports revealed insignificant relationships for three Category I countries, United States, Germany and France. Japan and Spain revealed a marginally significant negative relationship. Using the next independent variable, industry value added for

Category I countries, significant positive relationship existed for Spain. Spain was Cuba’s largest trading partner in Europe (McPherson & Trumbull, 2007). Insignificant results were found for the United States, Japan, France and Germany. Using high technology exports for Category II countries, significant positive relationship existed for China, India and the Russian Federation. As these countries increased their high technology exports, they increased their foreign earnings. This would lead to more FDI to other countries, including Cuba. For the next independent variable, industry value added, significant positive relationship existed for China. As China’s industries added more value they were able to generate more foreign earnings and hence had more FDI to assist other countries, including Cuba. For this hypothesis, level of technology in China was significantly related to FDI to Cuba. Insignificant results were found for the Russian Federation. This was a surprising result as the Russian Federation was assisting Cuba in many areas. A marginal positive relationship was found for India. This marginal significant relationship for India was supporting India's increasing FDI to Cuba. Using high technology exports for Category III, insignificant relationship existed for Jamaica, Peru and Madagascar. This was not a surprising result. Nepal and Haiti were not tested due to insufficient data. For the next independent variable, industry value added, significant positive relationship existed for Peru. This was a surprising result, since Cuba was not receiving FDI from Peru. Insignificant results were found for Jamaica, Haiti, Madagascar and Nepal. Again, this was not a surprising result for these less developed countries.

The results for Hypothesis 4, FDI to Cuba was significantly related to the human capital in the thirteen countries, were shown below. Two independent variables, school enrollment and total unemployment were used to test this hypothesis. Empirical findings for school enrollment revealed insignificant relationships for Category I countries (United States, Japan, France, Germany and Spain). Hence, in these advanced countries, school enrollment, a proxy for human development, did not affect FDI in Cuba. For total unemployment, similar insignificants results were found for these Category I countries, except for Japan, which revealed a significant negative relationship. As unemployment increased in Japan, FDI to Cuba went down – a reasonable result.

Using school enrollment for Category II countries, revealed insignificant relationship for China, India and the Russian Federation. Hence, school enrollment, a proxy for human development in these developing countries did not affect FDI in Cuba. For the next independent variable, total unemployment, similar insignificants results were found for these Category II countries. Using school enrollment for Category III countries revealed a significant positive relationship for Nepal. This was not a reasonable result, since Nepal was not providing FDI to Cuba. This was most likely spurious correlation. Jamaica and Haiti revealed significant negative relationships between school enrollment and FDI to Cuba. Hence, when the school enrollment in these two countries went up, FDI to Cuba went down. This meant that as these countries put more resources in education less was available for FDI. Results for Jamaica were reasonable as Jamaica had been investing in Cuba. The results for Haiti were surprising. Insignificant results were found for Peru, while a marginal positive relationship was found for Madagascar. Insignificant findings for Peru were not surprising. However, significant results for Madagascar were surprising as this country did not have any economic and political connection with Cuba. For total unemployment, insignificants results were found for these Category III countries – reasonable results.

The results for Hypothesis 5, FDI to Cuba were significantly related to the energy and natural resources in the thirteen countries, were shown below. Two independent variables, energy use and fuel imports, were used to test this hypothesis. Empirical findings for energy use revealed insignificant relationships for Category I countries (United States, Japan, Germany, France and Spain). For the next independent variable, fuel imports, similar insignificants results were found for these Category I countries. Hence, energy use in these advanced countries did not impact FDI to Cuba. Using energy use for Category II countries revealed insignificant relationship for China, India and the Russian Federation. For fuel imports, similar insignificants results were found for these Category II countries. Hence, like the advanced countries, energy use in these developing countries had no impact on FDI to Cuba. Using energy use for Category III countries revealed a significant positive relationship for Haiti. This was a surprising result. Insignificant results were found for Jamaica, Peru and Nepal, while Madagascar was not tested due to insufficient data. Insignificant results for these less developed countries were reasonable. For fuel imports, similar insignificants results were found for Jamaica and Nepal – reasonable results. However, Peru showed a positive marginal result – a surprising result. Also, Madagascar revealed a significant negative relationship. This again was a surprising result. Haiti was not tested due to insufficient data.

The results for Hypothesis 6, FDI to Cuba was significantly related to the transportation and communication in the thirteen countries, were shown below. Three independent variables, air transport, fixed line/mobile phone subscribers and internet users, were used to test this hypothesis. Empirical findings for the three independent variables, air transport, fixed line/mobile phone subscribers and internet users, revealed insignificant relationships for Category I countries (United States, Japan, Germany, France and Spain). Hence, communication and transportation in these advanced countries were not related to FDI to Cuba. Using air transport, and fixed line and mobile phone subscribers for Category II countries revealed insignificant relationships for China, India and the Russian Federation. For the variable, internet users, similar insignificants results were found for China and the Russian

Federation. However, India showed a significant positive relationship between internet users and FDI to Cuba. As India's internet use increased so did Cuba's FDI. As stated before, India had been investing in Cuba's economy (Cuba economy, 2008) and (Cuba trade, 2008). Using air transport for Category III countries revealed insignificant relationship for Peru, Madagascar and Nepal. A marginal negative relationship was found for Jamaica, while Haiti was not tested due to insufficient data. For the independent variable, fixed line and mobile phone subscribers, similar insignificants results were found for these Category III countries. In addition, for the variable, internet users, insignificant relationships were found for Jamaica, Haiti, Peru and Nepal. These were reasonable results for less developed countries. Madagascar was not tested due to insufficient data.

The results for Hypothesis 7, FDI to Cuba was significantly related to the market type in the thirteen countries, were shown below. The independent variable, merchandise trade, was used to test this hypothesis. Insignificant relationships existed for Category I countries, United States, Germany, France and Spain. A marginal positive relationship was found for Japan, corroborating its FDI investment with Cuba (McPherson & Trumbull, 2007). Using merchandise trade for Category II countries revealed insignificant relationship for China and the Russian Federation, while India showed a marginal positive result. Using merchandise trade for Category III countries revealed a significant positive relationship for Jamaica, a reasonable result considering Jamaica's investment in Cuba, particularly in the travel/tourism industry (Journal of Commerce, 1998) (Mesa-Lago, 2005). Insignificant relationships were found for Haiti, Madagascar and Nepal. There were reasonable results. Peru showed a marginal positive result – a surprising result.

The results for Hypothesis 8, FDI to Cuba was significantly related to the environment factors in the thirteen countries, were shown below. The independent variable, agriculture value added, was used to test this hypothesis. Insignificant relationship existed for Category I countries (United States, Japan, France and Spain). Germany was not tested due to insufficient data. The results for the advanced countries implied that environmental factors, proxied by agriculture value added, were not significantly related to FDI to Cuba. Using agriculture value added for Category II countries revealed insignificant relationships for China, India and the Russian Federation. These were reasonable results. Using agriculture value added for Category III countries revealed a significant negative relationship for Haiti. This was a surprising result. Insignificant results existed for Jamaica, Peru, Madagascar and Nepal. There were reasonable results.

The results for Hypothesis 9, FDI to Cuba was significantly related to the governmental factors in the thirteen countries, are shown below. The independent variable, Worker’s Remittances and Employees Compensation, was used to test this hypothesis. Insignificant relationships existed for

Category I countries (United States, Japan, Germany, France and Spain). Insignificant relationship for the U.S. was not surprising due to political differences. However, insignificant relationships for Japan, Germany, France and Spain were surprising. Using Worker's Remittances and Employees Compensation for Category II countries revealed a significant positive relationship for the Russian Federation. This was a reasonable result as the Russian Federation had a long economic and political relationship with Cuba (Mesa-Lago, 2001) and (Mesa-Lago, 2005). Insignificant relationships were found for China and India. For Worker's Remittances and Employees Compensation for Category III countries, a significant positive relationship was found for Peru, while insignificant relationship were found for Jamaica, Haiti, Madagascar and Nepal. Results for Peru were surprising.

Summary of Results from the 13 Countries

To get a better understanding of the many results, a table was presented showing the hypotheses, the countries, and the level and sign of significance. Hence, the test results were compiled and categorized as significant positive (S+), significant negative (s-), non-significant (ns), marginally significant (ms), marginally positive (m+), marginally negative (m-) and no data relationship (n/a) from the 13 countries are shown in the table below. The hypotheses, 1 thru 9 were sub-divided into their variables as follow: (H1) GNI per capita Atlas, (H2a) gross fixed capital formation, (H2b) gross capital formation, (H3a) high technology, (H3b) industry value added, (H4a) school enrollment, (H4b) total unemployment, (H5a) energy use, (H5b) fuel imports, (H6a) air transport, (H6b) fixed line and mobile phone subscribers, (H6C) internet users, (H7) merchandise trade, (H8) agriculture value added, and (H9) worker's remittances and employees compensation.

Table 475

Hypotheses Results for Categories I, II and III Countries

FDI Hypotheses Results	Category I					Category II			Category III					
Hypothesis 1 thru 9	**USA**	**Japan**	**Germany**	**France**	**Spain**	**China**	**India**	**Russian Federatio**	**Jamaica**	**Haiti**	**Peru**	**Mada-gascar**	**Nepal**	**Total S**
H1: GNI per capita Atlas	ns	ns	**S+**	**S+**	**S+**	ns	**ms+**	**S+**	ns	ns	**S+**	ns	ns	5
H2a : Gross fixed capital formation	ns	ns	ns	ns	ns	ns	**S+**	ns	ns	ns	ns	ns	ns	1
H2b: Gross capital formation	ns	ns	ns	ns	ns	ns	**ms+**	ns	ns	ns	ns	ns	**ms+**	0
H3a: High Technology	ns	**ms-**	ns	ns	**ms-**	**S+**	**S+**	**S+**	ns	n/a	ns	ns	n/a	3
H3b: Industry value added	ns	ns	ns	ns	**S+**	**S+**	**ms+**	ns	ns	ns	**S+**	ns	ns	3
H4a: School enrollment	ns	ns	ns	ns	ns	ns	ns	ns	**S-**	**S-**	ns	**ms+**	**S+**	3
H4b: Total unemploy-ment	ns	**S-**	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	1
H5a: Energy use	ns	ns	ns	ns	ns	ns	ns	ns	ns	**S+**	ns	n/a	ns	1
H5b: Fuel imports	ns	ns	ns	ns	ns	ns	ns	ns	ns	n/a	**ms+**	**S-**	ns	1
H6a: Air transport	ns	ns	ns	ns	ns	ns	ns	ns	mS-	n/a	ns	ns	ns	0
H6b: Fixed line/mobile phones	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	0
H6c: Internet users	ns	ns	ns	ns	ns	ns	**S+**	ns	ns	ns	ns	n/a	ns	1
H7: Merchandise trade	ns	**ms+**	ns	ns	ns	ns	**ms+**	ns	**S+**	ns	**ms+**	ns	ns	1
H8: Agriculture value added	ns	ns	n/a	ns	ns	ns	ns	ns	ns	**S-**	ns	ns	ns	1
H9: Worker’s remittances Employees/ Compensation	ns	ns	ns	ns	ns	ns	ns	**S+**	ns	ns	**S+**	ns	ns	2
Total Sig. per country	0	1	1	1	2	2	3	3	2	3	3	1	1	23
Total Marginal Sig. per country	0	2	0	0	1	0	4	0	1	0	2	1	1	n/a
Total of Sig. & Marginal Sig.	0	3	1	1	3	2	7	3	3	3	5	2	2	n/a
Ranking per country in the study	**9**	**6**	**8**	**8**	**4**	**5**	**1**	**3**	**4**	**3**	**2**	**7**	**7**	n/a

significant positive (S+), significant negative (s-), non-significant (ns), marginal (ms), marginally positive, (m+) marginally negative (m-) and no data relationships (n/a)

The empirical findings from Table 475 of significant relationships (positive/negative) from the testing of all hypotheses (1 thru 9) revealed that India, the Russian Federation, Haiti and Peru had three significant relationships per country, followed by Spain, China and Jamaica totaling two significant relationships per country. Japan, Germany, France, Madagascar and Nepal had the least significant with only one significant relationship per country. The United States did not reveal any significant relationship with the FDI to Cuba.

The three significant relationships corroborated India’s and The Russian Federation’s involvement in FDI investment with the Republic of Cuba. Surprising, Haiti and Peru also revealed three significant relationships; even though, these two countries did not provide FDI to Cuba. Spain, China and Jamaica’s two significant relationships with Cuba corroborated the existing FDI investment these countries provided to Cuba. Japan, Germany, France, Madagascar and Nepal revealed one significant relationship with FDI to Cuba. However, the result did not corroborate a significant relationship for Madagascar and Nepal since these two countries were not providing FDI to Cuba. The result of the testing from the United States did not have a significant relationship with FDI to Cuba, justifying the effectiveness of the existing trade embargo between the two countries.

When totaling the significant and marginal relationships from Table 475 in order, India had the the largest number (7) of relationships with FDI to Cuba. Peru had the second greatest number (5) of relationships with FDI to Cuba. Japan, Spain, The Russian Federation, Jamaica and Haiti had the third greatest number (3) of relationships with FDI to Cuba. China, Madagascar and Nepal had the fourth greatest number (2) of relationships with FDI to Cuba. Germany and France had the fifth greatest number (1) of relationships with FDI to Cuba. Lastly, the United

States had the sixth greatest number (0) (the least) of relationships with FDI to Cuba.

As far as the three categories of the 13 countries, Category III countries had the most (Table 475, total significant/marginal significant) significant number (15), followed by Category II countries (12), and lastly Category I countries with a significant number of (8) relationship with FDI to Cuba.

In ranking (based on the number of significant and marginally significant relationships), Category II countries had the highest ranking with India (first), the Russian Federation (third) and China (fifth). The second highest ranking relationship was Category III countries with Peru (second), Haiti (third), Jamaica (fourth), Madagascar (seventh) and Nepal (seventh). Lastly, Category I countries had the lowest ranking with Spain (fourth), Japan (sixth), France (eighth), Germany (eighth) and United States (ninth).

The key results of this study were as follows. Technology in the other countries was a key variable affecting FDI to Cuba. This was followed by the variables, GNI per capita, and human capital development in the countries studied. The other variables showed up as significant for some countries and not for others. Any variable that was not significant for all countries? Category II countries (China, India, and the Russian Federation) had the highest number of significant and marginally significant variables. This was followed by Category III countries (Jamaica, Haiti, Peru, Madagascar and Nepal) and Category I countries (United States, Japan, Germany, France, and Spain).

Implication of the Study

A discussion of the significance of the variables followed:

Level of technology was significant for 5 of the 13 countries. Hence, level of technology was a significant variable affecting FDI to Cuba. Three of these countries were from Asia (China, India and the

Russian Federation). Spain and Peru were also significant. Japan, Spain and India was also marginally significant. Hence, level of technology in these countries had a significant impact on FDI to Cuba.

GNI per capita was significant for 5 of the 13 countries. Hence, GNI per capita was a significant variable affecting FDI to Cuba. Three of these countries were from Europe (Germany, France, and Spain). The Russian Federation and Peru were also significant. India was marginally significant. Hence, GNI per capita in these countries had a significant impact on FDI to Cuba.

Human capital was significant for 4 of the 13 countries. Hence, human capital was a significant variable affecting FDI to Cuba. Two of these countries were from the Caribbean (Jamaica and Haiti). Japan and Nepal were also significant. Madagascar was marginally significant. Hence, human capital in these countries had an impact on FDI to Cuba.

Energy and natural resources was significant for 2 of the 13 countries. These two countries were Haiti and Madagascar. Peru was marginally significant. Hence, energy and natural resources in these countries did not have an impact on FDI to Cuba.

Governmental factor was significant for 2 of the 13 countries. Hence, governmental factors were not a significant variable affecting FDI to Cuba. The only two countries significant were the Russian Federation and Peru. Hence, governmental factors did not have an impact on FDI to Cuba.

Market type, referred to as the ability to create marketing concept through FDI potentials and highly competitive value chain as measured by merchandise trade, was significant for 1 of the 13 countries. Hence, market type was not a significant variable affecting FDI to Cuba. The only country significant was Jamaica. Japan, India and Peru were marginally significant. Hence, market type in these countries did not have an impact on FDI to Cuba.

Financial capital was significant for 1 of the 13 countries. That country was India. In addition, Nepal and India showed marginally significance. Hence, financial capital did not have a major impact on FDI to Cuba.

Transportation and communication was significant for 1 of the 13 countries. Hence, transportation and communications was not a significant variable affecting FDI to Cuba. The only country significant was India. Jamaica was marginally significant. Hence, transportation and communications in these countries did not have an impact on FDI to Cuba.

Environmental factor was significant for 1 of the 13 countries. Hence, environmental factor was not a significant variable affecting FDI to Cuba. The only country significant was Haiti. Hence, environmental factors did not have an impact on FDI to Cuba.

The findings from this study implied that policy makers in these and other countries should look at the key macro variables to evaluate the level of FDI provided to Cuba and other developing countries. The government of Cuba could also use these findings to evaluate the key variables in other countries that could affect FDI to Cuba. The government of Cuba could also use the list of countries that were significant as targets of promotion for FDI to Cuba. World institutions, like World Bank and the International Monetary Fund, could also use these results to try and assist Cuba and other developing countries.

This was the first study that utilized a macroeconomic approach to study FDI inflow to Cuba. Hence, there was no comparative study.

Theoretical Implications

From the theoretical frameworks discussed in the previous chapters, the major factor influencing a nation’s international competitiveness was FDI (Dunning, 1988). The dominant ‘eclectic paradigm’ (Dunning, 1988a) offers a more comprehensible reason to set up production in a foreign country based on the ownership, rival competition, and easy access to operating in a foreign country. In Dunning’s theory described in chapter 1 and further in chapter 2 made it clear that once advantages of MC's are established those companies operating through FDI will branch out with further operations in the same foreign locations or in new ones (Letto-Gilles, 2002). The category II countries, like China, India and most notably the Russian Federation had established operations within the Island of Cuba; in turn, expanding their international production instead of their domestic production. This supported Dunning's (1980) 'eclectic theory,' which explained the ability and willingness of a firm to serve markets (local, domestic, or international) and to exploit these advantages.

Dunning's (1977, 1980) 'eclectic theory' explained that FDI firms were able to create vertical and horizontal spillovers of technology and human skills while expanding specialization of production. This study showed that the level of technology in 5 of the 13 countries affected FDI to Cuba. These countries: were China, India, the Russian Federation, Spain and Peru. In the case of the Russian

Federation, its long-term FDI interaction with Cuba has created the necessary spillovers in the transfer of technology, goods, resources, exports and FDI. The Russian Federation not only had provided significant FDI to Cuba, but had also provided intermediate goods, services and large-scale production within the island; thereby, creating locations advantages outside its home country (Dunning, 1988b). These findings supported Dunning's 'eclectic theory.'

Similar results were found for the level of technology and FDI to China. Shi's (2001) findings of China's technological transfer supported Dunning's (1988a) base theory regarding LSAs, which included natural resources, cheap land and labor costs, potential local markets and government policies.

The findings from Hypothesis 3, regarding the level of technology for category II countries, China, India and the Russian Federation, also supported Hymer's (1976) oligopolistic theory. Hymer (1976) indicated that the driving force for firms to expand abroad was the application of firm-specific skills or technology to a wide market, not only to reallocate the world's capital. Furthermore, Hymer (1976) mentioned that markets were highly imperfects for firm-specific technology; therefore, a well-managed local firms, drawing on their home court advantage, would be able to obtain a greater return on good technology than distant firms hovering in unfamiliar territory (Hymer, 1976). For these particular reasons, those MNCs that were successful would undoubtedly penetrate and exploit their proprietary technology (Hymer, 1976). In the case of China, India and the Russian Federation, reiterating on Hymer (1976) oligopolistic theory, by investing in Cuba and providing FDI, MNCs from these host countries would benefit from proprietary and good technology. This was most notable in China, India and the Russian Federation investment in Cuba's off shore oil exploration (Chloe, 2008)(Mesa-Lago, 2005) (Cuba economy, 2008).

Hymer (1976) also stated that MNCs would provide FDI along with technology to developing countries and emerging markets. This study found that China, India and the Russian Federation viewed Cuba as a viable market for FDI.

Hypothesis 3, level of technology through Porter (1980) three generic strategies further explained that a firm used differentiation by citing to include design or brand image, technology, features, customer service, and dealer network.

Hypothesis 3, level of technology, through Fosfuri and Motta (1999), also made reference for firm-specific advantages to give rise to multinational activity and provide a formal model of FDI would result, in not exploiting existing technological advantages in a foreign country, but to access such technology and transfer it from the host economy to the investing multinational corporation via spillover effects (Love, 2003, p. 2).

Similar result of factors influencing FDI to Cuba to human capital for hypothesis 4, which was significant for 4 of the 13 countries. Dunning’s ‘eclectic theory’ improvised that the greatest contribution was that firms would also invest away from the host country in order to transfer the firms' human skills, knowledge, and other ownership specific advantages to capitalize on those opportunities in foreign countries where markets were imperfect (Dunning, 1979). Noorbakhsh, Paloni, & Youseff (2001) also concluded in their empirical findings that human capital is a statistically significant determinant of FDI inflows and one of the most important determinants greatly increasing over time.

Table 476

Theoretical Framework for the Factors Influencing and Not Influencing FDI to Cuba

FACTORS INFLUENCING FDI TO CUBA
1. Level of technology (5)* 2. GNI per capita(5) 3. Human capital (4)
FACTORS NOT INFLUENCING FDI TO CUBA
1. Energy and natural resources (2) 2. Governmental factor (2) 3. Market type (1) 4. Financial capital (1) 5. Transportation and communication (1) 6. Environmental factor (1)

* represents the number of times this factor was significant

Table 477
Theoretical Framework for Countries Influencing and Not Influencing FDI to Cuba

CATEGORIES OF COUNTRIES SIGNIFICANTLY (S) INFLUENCING FDI TO CUBA		
Category I	Category II	Category III
1. Japan (1)*	1.China (2)	1. Jamaica (2)
2. Germany(1)	2.India (3)	2. Haiti (3)
3. France (1)	3.Russian Federation(3)	3. Peru (3)
4. Spain (2)		4. Madagascar(1)
		5. Nepal (1)
CATEGORIES OF COUNTRIES NOT SIGNIFICANTLY (S) INFLUENCING FDI TO CUBA		
1. United States (0)		

* represents the number of significant variables per country

Countries from Category II and III had the most significant relationships with FDI to Cuba.

Limitation of the Study

The limitations of the study were as follows:

1. The data used was primarily from 1998 to 2007. The use of more recent data may provide different results, considering the increased global interest in Cuba.
2. Other factors could be included in the model. These could be macroeconomic variables for Cuba,

including GDP, inflation rates, interest rates, unemployment rates, income, and energy use, etc.

3. Some data were not available for a few countries and affected four of the nine hypotheses.
4. The data from inside Cuba was limited and was excluded from the testing. With more reliable data from Cuba, the analysis could be expanded.

Future Research Recommendations

Several recommendations were suggested for future research.

1. The time framework for future research could be expanded prior to 1998 and/or beyond 2007,
2. More countries could be included, for example Venezuela, Mexico, Canada, and Italy, etc.
3. More variables could be included in the study, including inflation, energy imports, electricity production, imports and exports, etc.
4. A bilateral approach could be studied. For example, a study can be done to see the relationship between FDI from Venezuela (Cuba's largest trading partner)

and Cuba’s economy. Furthermore, a bilateral approach with Cuba’s other existing trading partners like Canada, Mexico and Italy and observed their relationship between these countries economy and the FDI to Cuba.

Summary

This chapter provided an explanation of the results of the research. The findings of this study described the nine hypotheses and their significant relationships of macro variables in 13 countries and FDI to Cuba. The study overwhelmingly determined that FDI to Cuba was positively influenced by level of technology, GNI per capita, and human capital in several of the other countries. The study also revealed that the macro variables for China, India and the Russian Federation had the most influenced on FDI to Cuba. Perhaps Cuba’s FDI would increase further if the trade policies, particularly with the United States, followed by Japan, Germany, France, Jamaica, Haiti, Peru, Madagascar and Nepal were less restrictive. Spain by itself had a significant relationship, which corroborated the country´s long-term trade and FDI to Cuba. None of the economic variables from the United States was found to be significant, implying the effectiveness of the trade embargo to Cuba. However, the trade embargo is not the primary factor for Cuba deteriorating economic condition. Cuba’s centrally planned system with limited government reforms and its inappropriate labor incentive has been the leading cause for Cuba’s diminishing economy (Pellet, 1976, 1986). In any case, even with the United States economic embargo, FDI to Cuba was impacted by economic activities in other countries.

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