Attracting Foreign Direct Investment to Latin America

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ATTRACTING FOREIGN DIRECT INVESTMENT TO LATIN AMERICA

An internship project submitted in partial fulfillment of The requirements for the degree of Master of Science

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2002
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ABSTRACT


The purpose of the paper is to examine the literature of foreign direct investment to evaluate what factors are determinant to attract inflows of foreign capital to Latin-American and Caribbean countries. The paper focuses on factors such as market size, degree of openness, rule of law, political stability, trade, regional integration, democracy, availability of natural resources, government efficiency, and infrastructure (i.e. energy generation, transportation systems, ports and telecommunication services). The regression results showed that the degree of openness, trade reform, education, market size, and infrastructure are the most important determinants of foreign investment. Based on my analysis, different Latin American countries offer “unique” characteristics that should be emphasized in national policies to attract additional foreign capital.
INTRODUCTION

Developing countries and emerging economies require secure forms of financing if they are to grow and increase wealth. In Latin America, a region that has recently experienced volatility in financial flows, the search for the optimal combination of inward-bound flows is still an important issue. Since the 1980's, foreign direct investment into Latin American countries has demonstrated a sharp increase, and during the 1990's countries of the region, such as Mexico, Brazil, Chile, and Argentina have been major recipients for these capital flows.

Many authors have argued that one important reason for wanting to attract Foreign Direct Investment (FDI) to Latin America would be to encourage and sustain growth. The literature of economic growth suggests that FDI is a vehicle for making possible technological transfer to capture what some authors refer as to “spillovers effects”. Likewise, the “safe” nature of FDI makes it less volatile and more lasting. Consequently, all these factors should create a propitious environment for growth. However, a study conducted by the Inter-American Development Bank argues that while it may be true that FDI is synonymous with growth. Nonetheless, there are no correlation between stocks of FDI and subsequent growth. They argue that stock of long term debt is associated with growth since the accumulation of long-term debt is a function of projected growth of the economy. This project will evaluate the possible answers to a series of questions: does privatization, openness, political stability and external debt management play an important role in attracting foreign capital? What other policies and factors are required to make Latin America more attractive to Foreign Direct Investment?
To respond to these questions this study examines the results and the effectiveness of new policies and programs developed by different economists from international organizations such as the World Bank, The National Bureau of Economic Research, and the Inter-American Development Bank. The focus will be on policies implemented by Latin American governments in an attempt to attract foreign investment. Moreover, this study will examine the benefits and consequences of Foreign Direct Investment in Latin America.

Section II covers the literature review on the topic of foreign direct investment. It summarizes the existing knowledge on the factors that determine foreign direct investment in Latin America. In Section III, I develop a general model to be used in formulating the regression equation and I set out the hypotheses to be tested. Section III describes the data used to perform the study. Section IV examines the results from the econometric model for the purpose of determining the significance of factors that promote Foreign Direct Investment. Finally, Section V presents conclusions from the study and summarizes what aspects would make Latin American countries more attractive to foreign direct investment.

Economists use three basic methodologies to identify the causative factors behind foreign direct investment (FDI). The first is called intuitive or informal and it is referred by most literature on FDI. It consists in the selection of factors that a researcher believes to be an important causative variable, then, he studies the relationship among variables with FDI. The second methodology is a formalization of the intuitive methodology, and it consists in the econometric analysis of FDI. The third methodology is based upon surveys of transnational enterprises. (Argosi, 1995). This study makes use of the all of the three methodologies, with emphasis on the econometric approach.
II. LITERATURE REVIEW

Definition

The inflow of foreign direct investment corresponds to investments made by foreign firms or residents in a particular country over a certain period of time, with the intention of obtaining a lasting management interest in the affairs of the enterprise in which the funds are invested. Thus, FDI implies some level of long-term foreign ownership over the decisions made by the firm in the host country. In general, flows of FDI have usually constituted a small share of the financial resources flowing to developing countries. (Rivera-Batiz, 2000)

General Trends for FDI in Latin America

According to Rivera-Batriz (1999), in his study “Foreign Direct Investment: Current Trends and Prospect”, a rising wave of Foreign Direct Investment swept through the developing countries last decade. In the 1990’s the rising FDI flow to developing countries has made that the ratio of net long term capital accounted for FDI to more than double; that is to say, from less than 25 percent to over fifty percent. In Latin America, and the Caribbean, the ratio of long term capital inflows increased from 38 percent in 1990 to 70 percent in 1998. In spite of the increase in FDI to developing countries in the 1990’s, industrialized countries were still the major recipients of this type of capital. As said by the World Bank, in 1997, the high income countries received $233 billion of US dollars in FDI while developing nations were only host to $165 billion of US dollars. Nonetheless, the ratio of developing nations in total FDI flows increased from 12.7 to 41.5 percent between 1990 and 1997. (World Bank, 1999).
of the top twelve countries receiving FDI in 1998 were from Latin America. The table 1 shows that the country which received the most of the FDI was China, followed by Brazil, Mexico, Thailand and Argentina.

Determinants of Foreign direct Investment in Latin America.

This section, examines the major theories written by several economists concerned with the factors affecting foreign direct investment in developing countries, especially during the 1990’s in Asia and Latin America.

Openness

Ricardo Hausmann’s article (1998) “Foreign Direct Investment: Good Cholesterol”, raises the question: is capital attracted to more open economies? Hausmann’s intention was to find a direct relationship between foreign direct investment flows and more open economies, by studying the share of net exports as a share of GDP to the volume and composition of capital inflows. The study revealed that the total volume of capital flows is positively and strongly related to openness. Hausmann argues that “more open economies tend to attract proportionally more foreign capital”. However, the study suggests that openness is negatively related to the share of GDP, that is, the share of FDI in capital flows does not increase in economies that are more open and the literature stresses that Latin American countries have the characteristic of being closed economies. Recent studies of the FDI behavior in Mexico conducted by Mortimore and Huss in 1991, demonstrate that six variables determine the FDI in Mexico. One of the most important is the degree of openness of the economy, expressed in terms of the inverse proportion of imports (Hausman, 1998).
The increase in FDI is not spread equally in the developing countries. According to Rivera-Bartiz, "Latin America and the Caribbean, East Asia and the Pacific captured most of the increased investment". Overall, Latin America and the Caribbean, East Asia and the Pacific accounted by 90 percent of Foreign Direct Investment to developing countries in 1998, they received over $60 billion of US dollars each in 1998. Rivera-Bartiz concludes that the unequal distribution of FDI flows were due partly to the fact that countries in Latin America and the Caribbean and East Asia have larger economies than other developing regions such as the Middle East, the Sahara region and Africa. Even when expressed as a share of gross national product (GNP), FDI is significant greater for Latin America and the Caribbean and East Asia.

<table>
<thead>
<tr>
<th>Country</th>
<th>FDI in billion of US dollars</th>
</tr>
</thead>
<tbody>
<tr>
<td>China</td>
<td>45.6</td>
</tr>
<tr>
<td>Brazil</td>
<td>26.3</td>
</tr>
<tr>
<td>Mexico</td>
<td>10.2</td>
</tr>
<tr>
<td>Thailand</td>
<td>6.8</td>
</tr>
<tr>
<td>Argentina</td>
<td>5.7</td>
</tr>
<tr>
<td>Poland</td>
<td>5.5</td>
</tr>
<tr>
<td>Republic of Korea</td>
<td>5.1</td>
</tr>
<tr>
<td>Malaysia</td>
<td>5.0</td>
</tr>
<tr>
<td>Chile</td>
<td>4.8</td>
</tr>
<tr>
<td>Venezuela</td>
<td>3.8</td>
</tr>
<tr>
<td>Colombia</td>
<td>3.0</td>
</tr>
<tr>
<td>Czech Republic</td>
<td>2.7</td>
</tr>
</tbody>
</table>

Table 1 Main developing country recipients of FDI in 1998

The increase in FDI into Latin America has not flown in equal proportion to the various countries in the region. The table 1 exhibits that in Latin America only two nations lead as FDI recipients: Brazil, which received over $25 billion of US dollars in 1998 and Mexico, which received almost $10 billions of US dollars in the same year. Both countries were followed by Argentina with US$5.7 billions, Chile which received US$4.8 billions, Venezuela with US$3.8 billions and Colombia with US$3.0 billions respectively. This group of countries received more than 80 percent of all FDI flows to Latin America in 1998 (Rivera-Bartiz). At the global level, six
of the top twelve countries receiving FDI in 1998 were from Latin America. The table 1 shows that the country which received the most of the FDI was China, followed by Brazil, Mexico, Thailand and Argentina.

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Rule of Law

To respond the question whether FDI is attracted by the quality and commitment of the country's institutions, Eduardo Fernandez-Arias (2001) uses two sets of internationally comparable indexes of government commitment (Danni Kaufmann and La Porta). The first set is represented by government efficiency, government commitment, regulatory burden, rule of law, political instability. He found that the Kaufmann indexes of government commitment are positively and strongly correlated with FDI. After adding up the La Porta indexes, the only factor that remained significant was regulatory burden. Thus, he concludes that institutions matter through their effect on the level of development but not directly. Consequently, if a country at a given level of development improves its institutions it would get much more capital (Fernandez, 2001). In another Robert Barro (1997) examined the effects of democracy and the rule of law on investment. His study confirmed that the indicator for overall maintenance of the rule of law seemed a priori to be the most relevant for investment and growth. I conclude from Barro's work that institutions positively affect the volume of capital flows and those Latin American countries with the ability to reform through their institutions will obtain more FDI in different kinds of capital. In the OECD paper “FDI Policy and Promotion in Latin America” (1999), the author indicates that the fundamental role of governments in creating an environment which attracts investors and the benefits of investment is to create a stable political economic and social environment with appropriate legal and institutional structures that make Latin American countries more competitive.
Natural Resources and Infrastructure

Luis Riveros (2001) concludes that FDI in Chile in the 80's was a consequence of a series of factors, and no single factor was a sufficient cause of FDI by itself. Riveros argues that “as has been the case since the past century, abundant resources continue to be the major underlying advantage offered by Chile to FDI”. In a similar study, Ricardo Hausmann (1999) argues that capital is attracted by the opportunity to exploit natural resources. His study shows that the relationship between the total volume of capital flows and natural resources have a positive relationship. Nonetheless, his study concludes that natural resources are not a strong reason to attract foreign capital, but they are a strong factor to shift the composition of FDI. Finally, Eduardo Aninat (2000) in his work “Latin America and the Challenge of globalization” found that Latin American countries need to establish a reliable cost-efficient infrastructure. He suggests that many countries have improved their critical services such as electricity, telecommunications, banking, highway systems and transport. “They need to go much further in this direction, always with a regulatory framework” to guarantee that firms participation leads to benefits for consumers and increase competition. (Aninat, 2000)

Openness to International Trade

A study conducted by the OECD (Organization for Economic Co-operation and Development) on six emerging economies (1998) found that inflows of foreign direct investment are strongly correlated to market openness expressed in the form of trade. Larger markets have been traditionally been more successful in attracting foreign investment by reducing tariff barriers. The study suggests that trade liberalization stimulates growth and gives greater export opportunities when it is part of a multilateral or regional agreement. (OECD Paper: Lessons from six emerging economies, 1998)
Corruption

In the OECD paper “Foreign Direct Investment Policy and Promotion in Latin America” (1999), the authors argue that privatization plays an important role in promoting new opportunities for foreign investment. Nonetheless, “Latin American governments also have an important role in creating and maintaining a fair, friendly, and liberal framework for receiving the FDI in the country” (OECD, 1999). The study supports this view with the statistical figures showing that the FDI boon in the 1990’s was due to the structural reforms, macroeconomic stabilization, adequate management, and mainly government commitment. (OECD paper, 1999). In another study Colin Bradford (1993) indicates that additional external factors that have increased the flow of capital to Latin America during the 1990’s include the lower corruption levels by the increasing availability of information on the creditworthiness of borrowers. (Bradford, 1993) That is, a strategy to attract investors should be only a part of a broader process of mobilization around a project of social and political reform in which government redefines its role by turning away from exclusive relationships with vested interest groups from the past and moving toward an environment with greater transparency, and competition. (Macedo, 2001)

Privatization

According to the OECD scholar paper “Lessons from Six Emerging Economies” (1998), privatization has become a universal policy prescription in both OECD and non-OECD countries during the 1980’s and 1990’s. Privatization raises revenue to alleviate debt levels, enhances efficiency, attract foreign direct investment and redistributes wealth and economic power within the economy. The study suggests that it has been estimated that each dollar of FDI brought in through privatization attracts another 88 cents in additional FDI inflows. (OECD paper, 1998) Jorge Braga and Enrique Iglesias (2001) suggest that closely associated with deregulation and the
liberalization of trade and investment policy has been the privatization of state-owned enterprises. They stress the fact that “a policy to attract foreign direct investment should not rely too exclusively on privatization. It should also be accompanied by an effective policy to ensure a sustained price competition in the domestic market” (Braga and Iglesias, 2001). In particular, a competition policy is important in developing countries because according to the authors this is where competition is lacking. In many countries where concentrated oligopolistic structures of local economic and political power often creates rigidities that result in a major interference to development. In this context, Braga and Iglesias suggest a strategy to transform public monopolies to private ones, by giving investors a protected market for investment. This process both enhances, and it is reinforced by, the growing exposure of local and foreign enterprises in the domestic market moving towards a greater international competition. (Braga and Iglesias, 2001)

Regional Integration

Jorge Braga de Macedo’s study (2001) indicates that regional integration agreements during mid 1980’s and 1990’s has been a policy instrument to attract foreign direct investment to Latin America and Asia. Regional integration tends to enlarge the market that can effectively be served by investment in the region. In addition, it also serves as a vehicle to achieve a greater degree of internal market deregulation or regulatory reform, especially when resistance of powerful interest groups makes needed regulatory reform difficult to achieve at the national level. In this context, regional integration agreements create greater macroeconomic and political stability in the region and facilitate the cooperation among government needed to protect and defend standards and regulations such as the environment and worker’s rights. Finally, regional agreements can be a policy instrument to regulate government’s use of fiscal and financial incentives to attract foreign
direct investment. Ultimately, openness is a result of economic integration; in this context I will measure regional integration with the degree of openness expressed in the form of import taxes and import duties. (Macedo, 2001).

Education and Training

The paper “Foreign Direct Investment Policy and Promotion in Latin America“(1999), discusses the importance of education and skilled labor force in attracting FDI; in which countries with skilled workers in electronics, software, science and related technology abilities posses a comparative advantage. Furthermore, the author recommends that in order to create an appropriate environment for investors much stronger importance should be given to education and training (OECD paper, 1999). In the study “Main determinants and Impact of FDI in China” (2000), the OECD found that one of the most important factors in attracting FDI to China was the degree of development, since it is strongly correlated to domestic entrepreneurship, education level and local infrastructure. The main conclusion was that China has paid great attention to the education of its people. Consequently, Chinese workers are of relatively high quality and there are comparatively numerous technical personnel. (OECD paper 4, 2000)

Democracy

Empirical studies suggest that democracy is unrelated to growth (Brunetti, 1997). Nevertheless, the important conclusion of his analysis is that highly volatile laws, policies and regulations obstruct growth-enhancing private sector behavior. Brunetti (1997) argues that “a high degree of uncertainty in the law-making and policy credibility, low transparency in the law-making process and high degree of policy volatility” would affect negatively the expansion of the private sector. A
well-established party system and separation of powers would likely decrease policy unpredictability. Brunetti (1998) argues that growth enhancing political systems require well-established mechanisms that reduce the power of bureaucrats and politicians while at the same time stimulating transparent orderly law-making. As a consequence, this policy enhances foreign direct investment and growth. According to Brunetti (1997), changes in laws, regulations and policies should be predictable, transparent, public and incremental. His research clearly indicates that limiting discretionary governmental powers consolidate private sector confidence in the political framework which in would turn stimulates FDI and growth to Latin America. (Brunetti, 1997)

Size of the Market

In the study "The Distribution of Foreign Investment: Policy Research" Broadman, H.G. & X. Sun (1997) found a strong correlation between foreign direct investment and the size of the market and as well some of its characteristics by comparing a cross section of countries. Furthermore, the study revealed that GDP growth rate was significant as an explanatory variable in the model. Nonetheless, the GDP level was not; leading to the conclusion that where the current size of national income is very small, increments may have less relevance to FDI decisions than growth performance, as an indicator of market potential. (Broadman and Sun). The authors argue that for the majority of the low-income countries fail to attract large flows of foreign direct investment because of their relative small domestic markets. Broadman and Sun (1997) suggest that regional integration can be considered as a positive means of compensating for small national markets. However, there is no clear evidence of the extent to which regional integration influences in inflows of foreign direct investment. (Broadman and Sun, 1997). In this
paper the country's market size is measured in two ways: by using the gross capital formation of the top ten industries of each Latin American and the Caribbean countries. The second alternative is by constructing an index resulting from the GDP of each country divided by the average GDP of all the countries.

**Political Instability**

Edward Clay (2000) found that factors such as the number of strikes and riots, work days lost, and street robberies have been significant in his study. Nonetheless, these quantitative estimates only reflect some aspects of the qualitative nature of political risk in developing countries. The surveys conducted in South Asia and sub-Saharan Africa and South America reveals that political instability, expressed in terms of crime level, riots, labor disputes, days lost and corruption; is an important factor restraining substantially foreign direct investment. (Clay, 2000)
II THE MODEL

This section evaluates the determinants of foreign direct investment as the academic literature suggests using regressional analysis. The model will be tested using cross-section data for 34 Latin American and the Caribbean countries from the years 1970 to 2000.

The Regression Equation

The literature on foreign direct investment postulates that the following factors are important to attract inflows of foreign investment to Latin American and the Caribbean economies: Openness, political stability, democracy, natural resources and infrastructure, corruption, privatization, regional integration (openness), size of the market. Finally, literacy rate will be a measure for human capital. Education attainment and training is one of the most important factors that determine inflows of FDI to Latin America according to the literature; it will measure by commitment and the literacy rate. The model can expressed formally as follows:

\[
FDI = \beta_1 + \beta_2 \text{Literacy} + \beta_3 \text{Openness} + \beta_4 \text{Rule of Law} + \beta_5 \text{Democracy} + \beta_6 \text{Infrastructure} + \beta_7 \text{Corruption} + \beta_8 \text{Political Stability} + \beta_9 \text{Size of the Market} + \beta_{10} \text{LA/Caribbean country} + \epsilon.
\]

Where:

- \(\beta_1\) is a constant term, \(\epsilon\) is an error term and \(\beta_2\) to \(\beta_{10}\) represent the regression coefficients for literacy, openness, rule of law, democracy, infrastructure, corruption, political instabillity, size of the market, and dummy variable for Latin American or Caribbean countries; the dependent variable is foreign direct investment.

The literature of FDI indicates that foreign direct investment is positively related to the literacy rate. I expect a positive and significant estimator in the model for the literacy rate. Furthermore, a positive correlation between FDI and the degree of openness is hypothesized. In this context, the more the recipient country reduces its trade restrictions, tariffs and protectionism the more attractive it will be for investors. Thus, I expect a positive and significant estimator for openness in the model. Rule of law, according to the empirical studies represent a positive factor to
promote inflows of foreign investment to Latin America and the Caribbean. Therefore, I expect that the higher the index of rule of law the higher the inflows of foreign capital will be. On the other hand the index of democracy and inflows of FDI are positively related. Hence, I expect a strong correlation in the model for democracy. For literacy, most of the study suggests a strong link between education attainment and training with FDI. Political instability and FDI are inversely related, since the more violence, manifestations, riots, strikes and days lost at the production facilities, the less attractive will be a given country in attracting inflows of foreign capital.

Corruption is hypothesized to be negatively related to inflows of FDI. The more the Latin American governments corrupt and maintain an unfair and rigid framework the less foreign capital they are expected to receive into the country. I expect the corresponding coefficient for corruption to be significant and negative with respect to FDI.

The literature of FDI indicates that the lack of natural resources and poor infrastructure is an obstacle for opportunities to attract foreign investment. For the majority of low-income countries, poor infrastructure and lack of resources are often cited as one of the major constraints in attracting foreign capital. (Clay,2001) Thus, I postulate that the more natural resources and infrastructure the Latin American and the Caribbean countries have the greater the probability of receiving inflows of foreign capital. I do expect a positive correlation between natural resources and infrastructure with FDI.

Size of the market will be measured by the gross capital formation of the top ten industries and by the relationship resulting from the country’s GDP divided by the average GDP of Latin American and Caribbean countries. I do expect a positive relationship between size of the market and the amount of foreign capital as suggested by the literature.
Measurement of Variables

FDI is the dependent variable. Foreign direct investment represents the net inflows as a share of GDP, for a sample of 34 countries for the period between 1970 to 2000. Literacy: represented by the literacy rate, adults ages 15 and above for 34 Latin American and the Caribbean countries for the years 1970 to 2000.

Openness is the measured in two ways: The first measure is the net imports minus exports as a share of GDP divided by the GDP. The second measure of Openness intentioned to avoid collinearity it is calculated by the import duties minus exports duties divided by the GDP for the years 1970 to 2000.

Rule of law and Democracy are represented by indexes from the paper "Governance Matters II: Updated Indicators for 2000-01" World Bank Policy Research Department Working Paper. The authors are Kaufmann, Daniel, Aart Kraay and Pablo Zoido-Lobaton (2002). The data set contains six governance indicators that are measured in units ranging from about -2.5 to 2.5, with higher values corresponding to better governance outcomes.

Political Stability is represented by the following computation. This variable is for a sample of 26 Latin American and Caribbean countries from the years 1960 to 1996.

\[
\text{Political Stability} = \frac{\text{Assassinations} + \text{Revolutions} + \text{Riots} + \text{Violent manifestations}}{\text{Population}}
\]

The index is measured in units that range from 0 to 2, with the higher values corresponding to more stables countries. This variable is represented under different regression in the following form: \(\frac{1}{x}\), to measure political instability, where \(x\) is the index of political stability. Corruption an index measuring the level of corruption that ranges in the scale from 2.5 to 2.5; being -2.5 the less corrupted country and 2.5 the most corrupted one, for a sample of 26 countries for the year 2000.

Size of the market is an index that results from the GDP of each country divided by the average GDP of the 34 Latin American and Caribbean for the years 1970 to 2000. The dummy variable for Latin American and Caribbean countries to determine whether the fact of being a Latin American country plays an important role to attract more easily foreign investment. The number
1 is for the Latin America and 0 for the Caribbean. Finally, infrastructure is represented by several variables in the form of telecommunication networks, energy generation (electricity and natural gas), telephone lines, number of ports and airports, kilometers of highways and roads and air transportation, for the years 1970 to 2000.

The primary source data to run this model was provided by the “2002 World Development Indicators” which cover 94 variables for 225 countries. The data set in the study contains 175 observations, corresponding to 175 countries for the period 1959 to 2000. This information covers the variables included in the postulated model and since it is updated until 2000, it shows current conditions about the factors discussed previously in the paper.
The Findings

The model described in the previous section is tested by using ordinary least squares (OLS) to estimate the model for the cross country data corresponding to 34 countries. The table shows the estimations of the rate at which inflows of FDI change in response to the independent variables. The results are as follows:

\[
\text{FDI} = 1.442 + 0.3509 \text{ Market-Size} + 0.1168 \text{ Openness} - 0.7049 \text{ Corruption} + 1.277 \text{ Democracy}
\]

\[
\text{Std Error (1.192) (0.3509) (0.0291) (-0.7049) (1.642)}
\]

\[
\text{T-stat. (1.21) (1.96) (4.02) (-1.41) (0.78)}
\]

\[+ 0.2539 \text{ Literacy} + 0.5414 \text{ Infrastructure} + 0.6885 \text{ Political Stability}\]

\[
\text{Std Error (0.0840) (0.2074) (0.3709)}
\]

\[
\text{T-stat. (3.02) (2.61) (1.86)}
\]

The regression results suggest that there is a negative relationship between inflows of foreign investment and corruption. The model predicts that for every increase of one percentage point in the corruption index the foreign investment coefficient will decrease by 70.49 percent, holding other factors constant. However, the coefficient for corruption is only statistically significant at the 80 percent level, but I decided to keep it in the model to observe its interaction with other variables.

The model shows that political stability and inflows of foreign investment move in the same direction. Specifically, for every decrease in the index of political stability FDI will increase by 68.85 percent points. Nonetheless, this variable is only significant in the model at the 90 percent level. This leads to the conclusion that political stability might a significant cause determinant of investors’ decisions to invest in Latin American and Caribbean countries or invest somewhere else.

Market Size shows a coefficient equal to 0.3509 and t-stat=1.96. The estimate is significant and positive as expected. The results show that an increase in the size of the market (i.e. in the form of regional integration such as Mercosur) by 1 percent points will increase inflows of FDI by 35 percent points, respectively. The equation indicates a coefficient for Openness equal to 0.1169
and a t-stat= 4.02. That is, an increase in 1 percent in the openness index would increases inflows of foreign capital to Latin American and the Caribbean by 11.7 percentage points. Literacy shows a coefficient of 0.2539 and the t-statistic=3.02. According to this results compared to a t critic equal to 1.96 leads us to conclude that literacy is significant and its inclusion in the model is justified. Thus, for an increase in 1 percent points in education leads to an increase in 25.39 percent the coefficient of foreign direct investment holding other factors constant.

Infrastructure exhibits a coefficient of 0.5414 while its t-stat= 2.61. From the results we conclude that the infrastructure coefficient is significant and the positive sign as expected. The results explains that an increase in 1 percent points in infrastructure leads to an increase in foreign investment of 54.14 percentage points, holding other factors constant.

The estimated coefficient for Democracy is equal to 1.277 with a t-stat =0.78. According to these results, this variable is not statistically significant and hence does not represent an important factor to attract foreign investment as stated by the literature. Nevertheless, the estimator coefficient for democracy is consistent with economic theory, but it is not supported by the model as an important determinant.

Rule of law and the dummy variable were dropped because they were statistically insignificant. The rule of law variable showed multicollinearity with corruption, openness, democracy and political instability. After dropping corruption and openness, the inclusion of rule of law still showed inconsistency with economic theory and made other variables statistically insignificant. During the last attempt to include rule of law in the model I transform the variable but the results were inconsistent. I attribute part of this inconsistency to the low number of observations in the sample.
Other Factors not Covered in the Model

One potential explanation for the low R-square in the model is important missing variables for Latin American and Caribbean countries. Those factors include human rights indexes, pollution, property rights, political rights and civil liberties, economic freedom in the form of taxation policy, state intervention, banking policy, black market and state regulation.

In an attempt to construct a model to obtain better estimates and higher R-square, I used the variables for different periods of time. The second choice was to measure the variables in different ways. The findings were that (after I employed data for the years between 1960 and 1980 and from 1981 to 2000) the estimator for openness (t-statistic=1.21) was not statistically significant and thus not an important factor to attract FDI to Latin American and the Caribbean countries between 1960 and 1980. The results for the second period of time revealed that openness was an important factor to attract foreign capital (t-statistic=3.16) as suggested by the literature and supported by the trade reforms (i.e. NAFTA and Mercosur) However, for both periods of time the model exhibited a low R-square, leading to the conclusion that other variables should be taken into account for both periods. Finally, when the variables were measured in different ways, the findings were quite similar to the previous models just described, but the R-square still remained low. That is, the R-square was 49 and 41 respectively. A second explanation for a low R-square is due to the small sample of observations (34 countries) but in some cases (e.g. democracy, market size and political stability and corruption) there were less than 27 observations.
Policy Strategy in Developing Countries

This section compares and contrasts the policy issues to attract foreign capital to Latin America by discussing the benefits and costs of attracting too much foreign investment and their consequences. From the findings I can conclude that Latin American and the Caribbean countries can attract more foreign capital and consequently raise their standards of living by adopting new policies to promote the following factors:

1.- Degree of Openness
2.- Market Size
3.- Trade Reform (Openness)
4.- Education and Training
5.- Infrastructure

According to the estimates of the econometric model, FDI inflows to Latin America are in function of the factors discussed above. The estimates reflect the importance of creating new policies that promote macroeconomic stabilization, policies for the privatization of state owned enterprises, deregulation of the economy, a less strict regulatory framework for private investment, and new incentives to enhance investment for both international and local companies. The study strongly recommends increasing the level of education and training of the labor force.

To illustrate the importance of education and training, in Mexico, for example the maquiladora industry taking advantage of NAFTA (regional integration) receives 62 per cent of the share of the American market for electronics (television sets, personal computers, telecommunications equipment, and advanced electronically-operated medical equipment) (INEGI, Mexico 2002 report). The residual 38 percent is captured by the Asian market. In the last 14 years such degree of specialization in microelectronics and wearing apparel has improved the living standards of the average Mexican family residing in different cities distributed along the Mexico-US borderline (INEGI, issue 3, Mexico 2001) Finally, the model postulates that investment in infrastructure is another leading factor to attract foreign investment to Latin America and the Caribbean. As in Argentina, Brazil and Mexico, several American firms have invested and established
partnerships, joint ventures, or acquisitions with other Latin American and Caribbean countries in order to compete with related firms that manufacture their products in Asia that take advantage of with very low wages. In order to attract such level of investment governments need to address their deficiencies in infrastructure, expressed in terms of better roads, highways, ports as well as more energy generation (electric power and natural gas) and telecommunications (telephone lines, wireless communication, internet servers).

According to the findings and the literature of benefits presented by Applayard (2001) the gains of foreign direct investment in Latin America are as follows:

- **Increased level of output**: This results when more capital is brought and it is combined with labor and other resources.

- **Increased wages**: This was discussed above, typically, a raise in wages increase the standard of livings of the citizenry.

- **Increased Exports**: The foreign capital will generate goods with export potential that in turn create extra foreign currency necessary to build more infrastructure, invest in education, or pay back external debt.

- **Increased Employment**: Inflows of foreign investment stimulates the creation of more firms or the expansion of the existing ones resulting with increased demand for labor.

- **Increased Tax Revenues**: The increase in business activity and the inflows of foreign capital place the recipient country in a position of increased tax revenue.

Until now, the paper has emphasized the potential benefits of foreign direct investment. Now, I will discuss the costs of too much foreign investment. When a country has new policies to reinforce business activity, there is government regulation on those policies; the population is educated and posses training and expertise in particular areas (e.g. assembling computer chips or manufacturing advanced medical equipment) and finally, when there exists a reliable infrastructure and the size of the market is large; investors may consider a Latin American country as a potential one to invest their money in. Unfortunately, these factors are not present in most Latin American and the Caribbean countries. In a development context, governments have to borrow money to invest heavily in infrastructure, education and training.
This was the case of Argentina, Brazil and Venezuela in the late 90s in which they experience the problem of too much foreign direct investment. Their governments after they instituted some policy reforms in the 1990s in an attempt to be more attractive to foreign investors they borrow money from different international institutions such as the World Bank or the International monetary Fund to build infrastructure and invest in training for workers in the automotive assembly sector. As a result they ended up with a lot of external debt; however, Brazil and Argentina became the best performing economies in Latin America some years after such policies took effect. According to the Argentine and Brazilian department of Economy, they have passed several trade agreements with Asian nations (Magallanes, 2001)

In the second half of 1997 when the currency problem in Thailand exposed a major liquidity and banking problems Indonesia, South Korea and other countries suffered a major depreciation at the expense of economic growth such as Argentina and Brazil that also experienced the contagion effect of the Asian crisis known as the “spill-over effect” due to the falling price of commodities such as cooper, wool and oil originated by the contraction of Asian’s demand. “The nature of the recurrent liquidity crises that have affected the developing countries is basically a loss of confidence of investors and funds administrators on the emerging markets”. (Anguiano,2000). Investors’ uncertainty and the excessive foreign investment in the host country caused its currency to depreciate sharply, resulting in the following consequences or short run costs of foreign investment:

- Inflation
- Recession
- Falling Real Income
- Higher Unemployment
- Rising interest Rates
- Falling Asset Values leading to a Crisis.

It is important to note that investors also show some of the risks and may gain high returns or suffer heavy losses during crises. “When risks have materialized, however, large groups of investors have been saved from their mistakes by market champions. Their gains have thus been
private, but their losses have been socialized and absorbed by the capital-importing countries” (Anguiano, 2000). Among the adverse impacts resulting from increasing inflows of foreign investment to Latin America, according to Appleyard (2001) are:

**Instability in the balance of payments and the exchange rate:** The inflows of foreign investment to a host country increase the value of the exchange rate and when those profits of the investment are sent to the home country that damage the value of the host country making it to decrease in value creating some level of instability that affects economic planning in the long run.

A second potential cost is the **Loss of Control Over Domestic Policy:** Appleyard argues that basically the large foreign investment sector makes use of power in different ways that causes the host country is no longer sovereign.

Finally, Field (2001) argues that foreign investment leads to **Decreased Domestic Investment and Decreased Domestic Savings.** That is, the inflow of foreign capital causes the government of the host country to reduce its effort to generate more domestic savings. On the other hand, investors in the host would find more attractive investments in multinational companies rather than in domestic enterprises because of the lower risks.
CONCLUSION

To conclude, I strongly advise to governments of Latin American and the Caribbean that too much foreign investment or too much economic isolation is not the best option to assure economic growth and sustainable development. I would propose to Latin American governments stability of the democratic political system, adopt new macroeconomic policies such as convertibility, fiscal balance, and autonomy of central bank, new foreign investment laws that allows liberal movement of capital.

I would advise to Latin American governments to reinforce policies to get rid of bad economic behaviors, such as swollen current account deficits, excessive short-term foreign currency borrowing and unstable banking systems. In this way, they will be ready to manage efficiently the inflows and outflows of capital by making use of currency controls or foreign investment regulations until a new international financial architecture is developed to solve problems of financial or monetary crisis.

My study presents one of the many different ways Latin America governments can attract foreign investment. Nonetheless, the several regressions strongly suggest that there is no “universal recipe” to be implemented for all the Caribbean and Latin American countries. The theoretical explanation is that every Latin American country offers unique characteristics and advantages that at some point might be crucial in determining what factors have to be emphasized in a national policy to attract additional foreign direct investment.
The following pages contain the concluding results of the regression used in this study. The model was estimated in the statistical analysis system (SAS) and the original estimations are explained in table A-1. On the other hand, the table A-2 contains the data set used in the model.
The results of regression analysis using SAS System with the REG procedure are as follows:

**Model Specification**
- Model: MODEL1
- Dependent Variable: FDI

**Analysis of Variance**

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- Root MSE: 0.71387
- R-Square: 0.5318
- Adj R-Sq: 0.4684
- Coeff Var: 41.29381

**Parameter Estimates**

| Variable   | DF | Parameter Estimate | Standard Error | t Value | Pr > |t| |
|------------|----|--------------------|----------------|---------|------|---|
| Intercept  | 1  | 1.44260            | 1.19257        | 1.21    | 0.2609 |
| MktSize    | 1  | 0.35092            | 0.17904        | 1.96    | 0.3640 |
| Openness   | 1  | 0.11698            | 0.02913        | 4.02    | 0.0039 |
| Corruptn   | 1  | -0.70494           | 0.99397        | -1.41   | 0.1966 |
| Democracy  | 1  | 1.27798            | 1.64268        | 0.78    | 0.4590 |
| Literacy   | 1  | 0.25397            | 0.08409        | 3.02    | 0.0825 |
| InfraStr   | 1  | 0.54147            | 0.20746        | 2.61    | 0.1168 |
| PolStab    | 1  | 0.68815            | 0.37091        | 1.86    | 0.1007 |
## APPENDIX A-1
### The Data Set

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