

Effects of United States Monetary Policy on the Capital Flows to the Latin America Countries

By

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This dissertation has been duly read, reviewed, and critiqued by the Committee listed below, which hereby approves the manuscript of David Rene Samayoa Gordillo as fulfilling the scope and quality requirements for meriting the degree of Doctor of Philosophy in Economics.

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Abstract

In the latest time, the US has had an easy Monetary Policy. Because of the increasing link among the countries through interconnections on international trade, financial, and labor markets, such policy has not only had effects in the US economy, but also in the rest of the world. So many countries, especially emerging and developing countries, have suggested that such a policy has been causing an excessive flow of funds out of the US which are disrupting the exchange rate and competitiveness of those countries.

An innovation of the analysis is that capital flows are divided in “Firm related” (direct investment and equity flows) and “Debt” (debt instruments and private loans obtained from foreign financial institutions). Another innovation is related to the measure of the external factors considering the US alone and a compound of Advanced Countries (AC) that includes: the US, European Union, United Kingdom, and Japan. The performed analysis indicates that the US Monetary Policy has been having a role on the determination of the capital flows to the Latin America Countries (LAC). However, these external “push factors” have been less important than the “pull factors” from Latin America. In the model, the “push factors” reflected to have had influence on the total capital flows, especially through the global liquidity proxies measured by the growth of the monetary stock in the AC. Holding all other things constant, one percent increase in the monetary stock in the US will generate capital flows to the LAC for an amount between 0.47 to 1.71 percentages of GDP. This effect is bigger when using the proxy constructed with the US alone than when using the compound of AC. The long term interest rate registered significance only on the “Firm related” type of capital flows and only when using the compound of AC.

The performed analysis also indicates that there is preeminence of the “pull” (domestic) over the “push” (external) factors. This means that the LAC have been pursuing actions such as political stability, sound and consistent economic policies, and more market oriented policies that are attracting capital flows by themselves.

Dedication

I would like to dedicate this work to God who helped me redeem my soul with the opportunity of this existence.

I also would like to dedicate this work to my parents Olguita (†) and Nandito (†) for their love and example of hard work and persistence which helped me become the person I am today.

Also, many thanks to my wife, Cory, my soul mate and best friend, for all the love and support you are given me in our shared life. Thanks being the light in my darkest moments and for the continuous work you do for us and our well-being. But I'm especially grateful because you've chosen me as your walking partner in this road of life.

To my beloved daughters Maria Alejandra, Emily Ximena, and Fatima Isabel, for allowing me, along with Cory, to be their mentors in this life.

To my siblings, Fernando, Lourdes, Arabella, and Edgar, for all those moments of happiness, and sadness of this life, but mostly for all those moments we teamed up to accomplish our life goals.

To my in-law family for all their love and their willingness to lend a helping hand in all moments.

To the Central Bank of Guatemala, for giving me the opportunity to fulfill my professional career.

To my Dissertation Committee for their suggestions and opinions which helped me to complete my work in a more professional way. Especially to my Dissertation Chair and Academic Advisor, Professor Thomas D. Willett, for the wisdom he dedicates to all his students.

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Introduction

The US Monetary Policy has had implications not only for its own economy, but also for the rest of the world because of the main role of the US Dollar on international trade and financial transactions. The importance of the US Dollar on the international markets has been growing continuously because of the Globalization process of the economies, where there is an escalating linkage in the international markets.

The Federal Reserve System (Fed) determines the monetary policy by “The pursuit of maximum employment, stable prices, and moderate long-term interest rates,” according to its mission (Board of Governors of the Fed, 2012). Doing that, in the latest times, the Fed has been maintaining easy monetary conditions through a tendency toward interest rate reduction.

As a result, many countries, especially emerging and developing, have suggested that such a policy has been causing an excessive flow of funds out of US which is disrupting the exchange rate and competitiveness in those countries. In order to reduce the effects of this disturbance, those countries had been accumulating foreign reserves by their interventions on the foreign exchange markets. But those countries have been investing back on the US, principally on longer-term US Treasuries, causing more downward pressure on US interest rates and preserving these disrupting conditions.

Therefore, my dissertation investigates how the US Monetary Policy is affecting the capital flows to the emerging and developing countries, specifically the Latin America Countries (LAC) during the time period 1987-2010.

In order to do that, I begin by analyzing some of the main features of the US Monetary Policy, trying to understand the main historical tendencies and then compiling some of the main

ideas behind the effects of the Globalization Process on the US monetary Policy determination; this analysis is presented on Chapter II.

Afterwards, on Chapter III, I'm making a descriptive analysis of the tendencies of the capital flows to the emerging and developing countries for the time period considered. Then, focusing on those countries considered as LAC, in order to analyze the behavior of the flows of capital to those countries. Identifying there that the LAC have been receiving capital flows, especially those directly related to the firms.

Because in the latest times there has been a low interest rate in US along with capital flows to the LAC, in Chapter IV, I'm proposing a quantitative analysis (through econometric models) in two phases. The first one consists of a model which can help understand the relationship between the long and short term interest rate in US; the model will be in order to see the relationship of the US Monetary policy main tool and one of the benchmarks in the international financial markets, such as the US Treasury 10 years interest rate. The second phase will consist on the development of a "push and pull factors" model of capital flows that can unravel if the external or the domestic factors are more important in the behavior of those capital flows. This will be in order to see if the US Monetary Policy has been having such effects on those countries.

In Chapter V, I present the quantitative analysis related to the long and short term interest rate, the results indicate that the Federal Funds interest rate (main tool of US Monetary Policy) has had some influence on the long term interest rate, which has weakened in the latest times (2003-2011) given to the importance of other economic conditions, such as the US Fiscal policy. Consequently, the econometric results also support the "conundrum on the interest rate phenomenon."

In Chapter VI, I present the application of the “push and pull factors” model of capital flows to the LAC. The results indicate that both “push” and “pull” factors are important on the behavior of the capital flows to the LAC. Accordingly, the “push factors” have shown that they have an impact on those capital flows, especially through the global liquidity proxies and such effect is bigger when using the indicator constructed with the US alone than when using the compound of Advanced Countries (AC, including the US, European Union, United Kingdom, and Japan). The other, related to the monetary policy as “pull factor,” the long term interest rate, registered significance only over the “Firm related” type of capital flows and only when using the compound of AC.

Finally, the last chapter offers an elaboration of the main conclusions that this study was able to produce and there is a description for the main options for future researches that I found, as well.

Chapter II: Some Considerations about US Monetary Policy

Based on the Mundell-Flemming model for open macroeconomic analysis¹ a change on the monetary policy of a large and open economy will look to improve their domestic income by a reduction on the interest rate that can increase the investment in real activities. At the same time, this will promote capital flows out of its economy looking for greater returns. This, together with the fact that the increased income will produce higher imports, ultimately will produce disequilibrium on the balance of payments. Such deficit will promote a depreciation of the exchange rate that will reduce a little by the impacts on income and trade deficits.

However, those effects are also felt in the small and open economies, such effects in accordance with the openness to the capital movements and the exchange rate regime of those countries, through changes on their trade flows, domestic income, and exchange rates, as well. Indeed, the model suggests that with flexible exchange rates (in those small and open countries), the impact of external shocks is attained to the cost of appreciated exchange rate that could take back the positive impact on income and trade flows. With fixed exchange rates, the lack of independent monetary policy can produce greater impact of those external shocks.

Indeed, such theoretical statement is one of the main sources of disagreement around the world because most of the countries are responding to the quantitative easing on US and other the advanced countries by intervening heavily on the foreign currency market, generating, as manifested by the Brazil's finance minister, an "International currency war" (The Economist, 2010).

¹ As is stated on Pilbeam (2006), apart from the fact that there are limitations on this analysis because of the reliance on the Marshal-Lerner conditions, the neglecting of supply side effects, and also because of the assumptions of static assumptions, among others. This type of analysis can give a general idea of the effects of the changes on one country and how it can affect others as well.

Then, in the actual political, economic, and financial conditions, there is an increasing economic interdependence along with an inclination in many emerging countries to manage their exchange rate. The effects produced by the US Monetary Policy, which is looking for its own economic considerations, are uncertain because the other (emerging and developing) countries are also looking for their own economic considerations.

So, the transmission mechanism of the US Monetary Policy to the emerging and developing economies will depend on the degree of financial and economic integration among countries, especially, those countries with greater financial and trade relationship with US and the exchange rate regime of those countries. For that reason, in the next part, I will describe the main features of the US Monetary Policy because in the other chapters, I will develop this relationship with the emerging and developing countries.

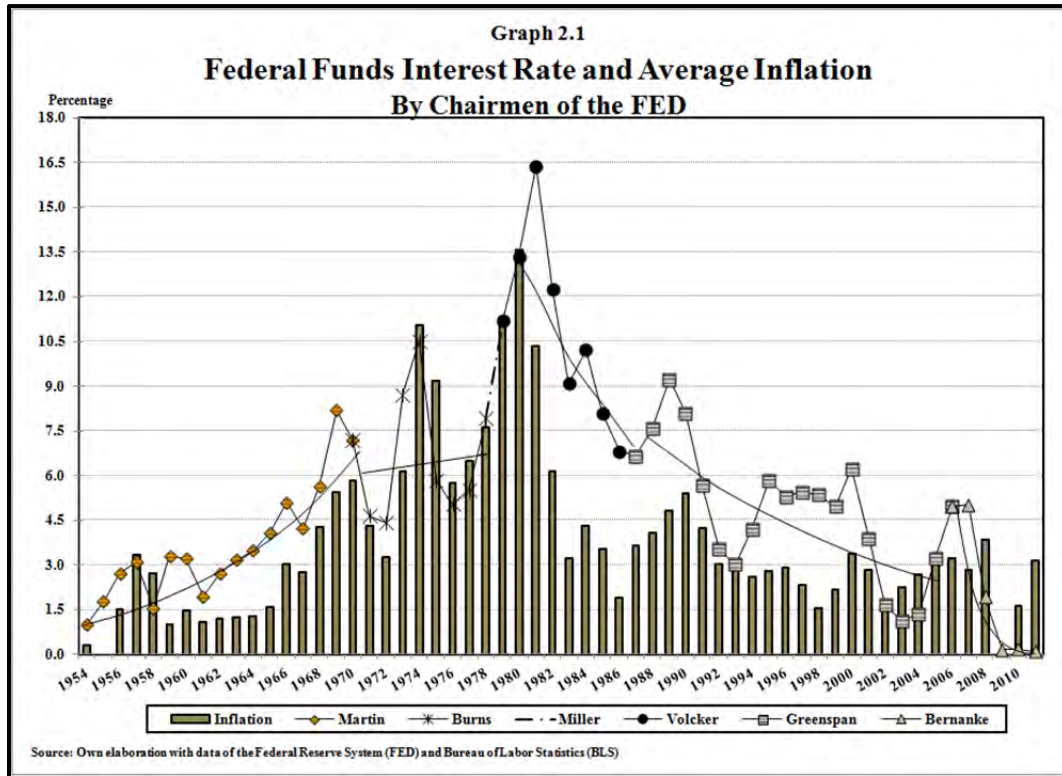
1- US Monetary Policy

a. Under Greenspan-Bernanke Administrations

In order to make a complete analysis of the US Monetary Policy, it will be necessary to analyze all the information that the Federal Open Market Committee (FOMC) took into consideration to determine the monetary policy; however, that is something beyond of the scope of this study because the main objective is to see if the general tendency of this policy has been having a large effect on the capital flows to Latin America Countries in the recent years. So, I will only be making a descriptive analysis of the US Monetary Policy, especially during these two administrations.

The Federal Reserve System determines the monetary policy based on its mission of, “Pursuit of maximum employment, stable prices, and moderate long-term interest rates.” In that

context, the FED had pursued different policies along different times, all which can be seen on the next graph².



This graph summarizes the pursued Monetary Policy³ because it reflects the behavior of the Federal Funds rate which is the Fed policy instrument and the inflation annually during each year of administration of each chairman of the Fed. In effect, the Fed pursued a “stop and go” policy since the middle of the fifties to the end of the seventies, that lead to higher inflation and interest rate levels. After that period, more inflation and output stability prone policy appeared along with a tendency to the reduction of the inflation and interest rates.

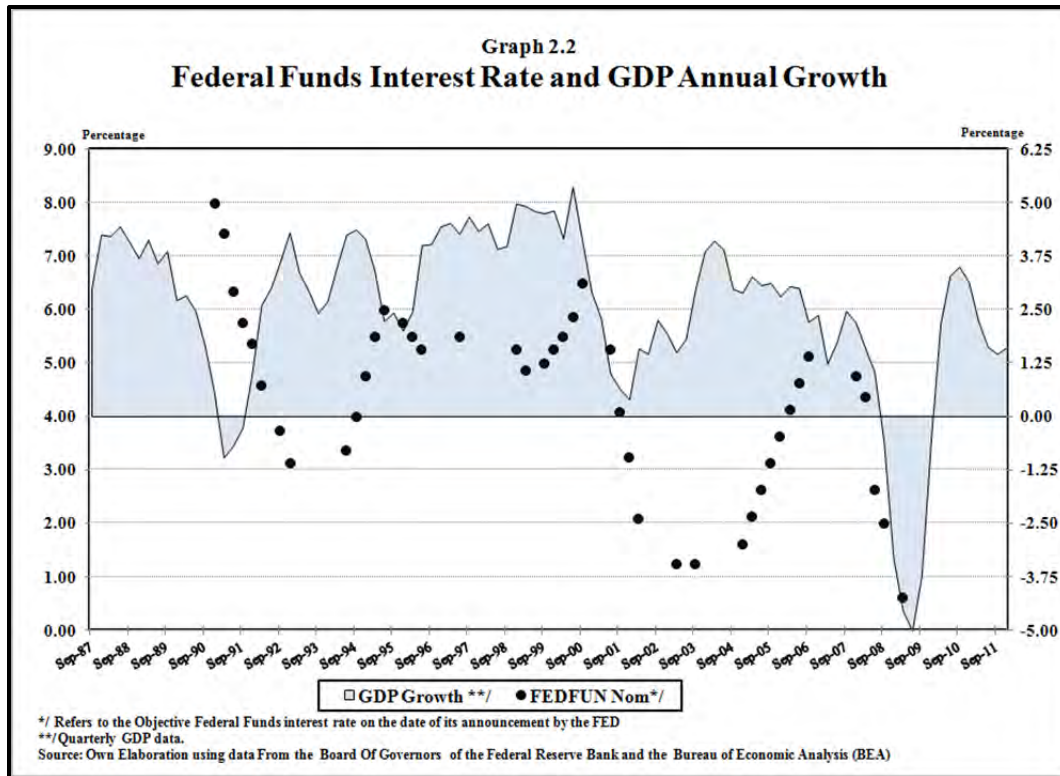
² I did this considering the different Federal Reserve’s chairmen in order, not only to give an idea of the monetary policy pursued by each of those administrations, but also to show how the tendency changes on it.

³ I would like also mention that I tried to summarize this monetary policy using monetary stock variables. However, to my understanding, the combination of interest rate and inflation reflects it better, for that reason those weren’t show.

Some intention to correct this high inflation and interest rate scenario were made during the mandate of Arthur Burns. The political, economic, and financial conditions during those years (end of the Bretton Woods Accords that promoted the floating-rate system and Oil crisis shock among others) didn't allow correcting the path. So, it was not until the period of Paul Volcker as Fed's Chairman, that the policy changed its tendency.

During Allan Greenspan's administration, the sustained monetary policy (toward reduction of interest rate and inflation) allowed economic stabilization and a promotion of the financial system. One of the main characteristics of this period was the inclination of liberal measures that advocate the ability of the markets to its auto regulation. Such policies were maintained by his successor and actual Fed's Chairman, Ben Bernanke.

Despite the fact that, during Greenspan-Bernanke administration, the US hadn't had the high levels of inflation registered in earlier years, it appears that the monetary policy pursued during this time period had reflected a preeminence to be a "pursuit of maximum employment" because of the maintenance of low interest rate in most of the last decade, as it is illustrated in the next graph.



According to my understanding, this graph reflects the nature of countercyclical Monetary Policy even when there is no direct mandate of the Government regarding the US Monetary Policy. As it will be developed further in another chapter, many critics in the aftermath of the Global Crisis have been arguing that the Federal Funds interest rate was maintained lower than the economy had needed during the 2002-2004 period.

b. International Aspects of US Monetary Policy

The earlier argument is incomplete without taking into consideration the fact that the world has been more interlinked (by an international integration of markets) since the middle of the 80's and, for that reason, the individual actions of the countries have had effects on the others, especially when it is a big and important country like the US.

In effect, Kamin (2009) argues that the effectiveness of the monetary policy of any country has been constrained, not only by the fact that, “Policy makers must respond to a wider range of developments,” but also, “Globalization alters the transmission channels of monetary policy.” In that sense, the FED argues, that even when they don’t “Directly adjust its policy in response to international developments,” they only consider those indirectly if they believe that those are affecting domestic indicators that they took into consideration at the time to set the monetary goals.

As time has passed, many countries have been adopting an inflationary anchor (by the implementations of Inflation Targeting Schemes) to determine their monetary policy. However, with the increase of the global imbalances, the reduction of the interest rate in the advanced countries, and the booming of the movements of capital flows around the world, many countries began to manage their exchange rate by accumulating foreign reserves, which will mostly be looking for a low risk investment. So according to Geithner⁴ (2006), these investments put downward pressure on the US long term interest rate and upward pressure in other assets. For that reason, these international considerations are limiting the effectiveness of the monetary policy even more because they depend on the effect of the financial conditions of any country.

In fact, the chairman of the Fed assured in the Fourth Economic Summit, Stanford Institute for Economic Policy Research, Stanford, California, in 2007, that, “The Federal Reserve will continue to place a high priority on understanding the effects of globalization on the U.S. economy in general and on the conduct and transmission of U.S. monetary policy in particular.” That implies the importance of this internationally interlinked world. Where, the combination of policies around the world, have been having notorious effects for all countries.

⁴ Remarks at the Japan Society Corporate Luncheon in New York City by the President and Chief Executive Officer of the Federal Reserve Bank of New York.

2- Concluding Remarks

There are important ideas to recall. The first one is the fact that the US Monetary Policy has had a general tendency to reduce the interest rate in recent years that, in general, reflects an easy monetary policy for this time period and determined, mainly considering the domestic conditions for a long time. Second, such policy has had its effects not only for the US economy (where they have been trying to impulse the growth in its Gross Domestic Product and decrease their deficit on its current account), but also for the rest of the world.

Third, given the effects of the US monetary policy around the world, especially for emerging and developing countries, there have been counter policies that have been tried to maximize the initial effects because of the capital that flew to those countries. Those are returning back in part of the form of foreign reserve investments, which have been maintaining downward pressure on the interest rate.

Finally, the linkages that exist between countries through the interconnections on the trade, financial, and labor markets are producing considerable changes in all the countries. However, there is not enough knowledge about this phenomenon yet.

Chapter III: Capital Flows to Emerging and Developing Countries: The Latin America Countries Case.

The emerging and developing economies have been gaining more important positions in the world economy within the last three decades. In its edition of December 11, 2010, The Economist stated “The performance of the world economy in 2011 depends on what happens in three places: the big emerging markets, the euro area, and America,” something that seemed unbelievable only a few years ago. But if something is true in this modern era, is that the changes are the only permanent phenomenon in all human society.

1- Capital Flows to Emerging and Developing Countries

Economists often have different ideas about economic phenomena. There is a kind of general consensus that the emerging and developing countries have been receiving larger amounts of capital flows in the latest times. More important though is the fact that there is also a concern about the unstable nature of such capital flows. But our lack of consensus doesn't allow us to agree on what exactly is a “Capital Flows Wave” as discussed by Forbes and Warnock (2011). Not only is there disagreement on when it should be considered a “surge,” “stop,”⁵ “flight,” or “retrenchment,” but also on what causes such behavior and its consequences. As an example of its importance is the large number of papers analyzing this topic by the International Financial Institutions such as the IMF, World Bank, The Bank for International Settlements

⁵ It is important to mention that Efreidze, Schreyer, and Zula (2011) made a very good survey of the main publications related to “sudden stops” in the latest seven years. As they state, “A brief examination of this survey reveals the myriad criteria have been used in the recent literature to identify sudden stops.”

(BIS), the main economic research institutions, and also by the performed research on the specialized economic schools⁶.

Related to some historical consideration of the capital flows to the emerging and developing countries, the BIS (2009a⁷) states, “Because under the Bretton Woods system established in 1944, comprehensive capital account restrictions were allowed... many of those as essential for prudent economic policymaking domestically and for permitting the gradual restoration of liberal trading arrangements internationally.” For the 50s and 60s they said that that those years, “Were decades of substantial trade liberalization and strong global growth... most countries maintained a tight control on capital movements (despite some easing), their effectiveness became progressively weaker.” According to the BIS analysis, this happened as consequence of “divergent current account positions.”

For the decades of 70’s and 80’s, the disruption on the main developed economies happened as a consequence of their monetary and fiscal policy, generated by, “The advent of generalized floating among the major currencies in March 1973,” and also the inflationary pressures generated by the oil shock which, “Created a particularly unstable structure of capital flows. With recession and large current account deficits curbing fixed investment in the industrial world from 1975, the international banks looked for borrowers in the developing world.” So, there was an increasing supply of easy money for the emerging and developing countries.

⁶ Even though there is huge opportunity to do further research on this topic, I decided to use the long term relationship on my analysis, using annual data from the period 1987-2010, leaving for future researches to analyze those waves in detail.

⁷ I’m just taking some information of the main considerations. For a very good, descriptive, and more complete analysis of the capital flows on historical perspective, see the paper “Capital Flows and Emerging Market Economies” by the Committee on the Global Financial System of the BIS.

However, the lack of consistent and sound political and economic conditions (the authors indicate that those “The capital inflows that in effect were used to finance fiscal deficits or sustain private consumption... in many cases, capital inflows led to large currency appreciations, which, by making imported goods cheaper, encouraged consumption”), together with the short term nature of the loans, with low but variable interest rate, made those capital flows unsteady, creating, according to the authors, “Currency mismatches and short duration debt structures played a key role in almost all financial crises affecting the emerging and developing economies in the 1980s.” Finally, they also stated, that in the late 1980s and early 1990s, “There was a revival of capital flows to the Emerging and developing countries as growth in the industrial world picked up.”

Accordingly, I present a descriptive analysis of the capital flows to the emerging and developing countries using data of the Balance of Payments (BOP) financial account that can be found on the World Economic Outlook Data Base, April 2012. Given that there is not a generally accepted definition of capital flows, I used some of the main features of the Balance of Payments Manual (BPM), prepared and recommended by the IMF⁸, to capture a more generally accepted approach to the capital flows. Indeed, the IMF states that, “The BPM serves as the standard framework for statistics on the transactions and positions between an economy and the rest of the world,” (IMF, 2011), so there exist homogenization of the compiled data on each individual country; then, the information provided could be comparable among those different countries. Another advantage offered by BPM use is that it comprises most of the ideas of the people which compile the information for the BOP in each country because in its elaboration, the IMF realizes, “Extensive consultations with national compilers and regional and international agencies over

⁸ Basically based on the Fifth Edition because this began to be implemented in the middle of the 90’s (even when countries differ in time of implementation) but the compiled information with the earlier edition was statistically transformed by the IMF to meet this new criterion.

many years” (IMF Website, 2012). So, according to my interpretation, the IMF included considerations regarding aspects such as lack of information, compilation practices, and limitations around the world. Meaning that, the required information will be more easily available to the most of the countries.

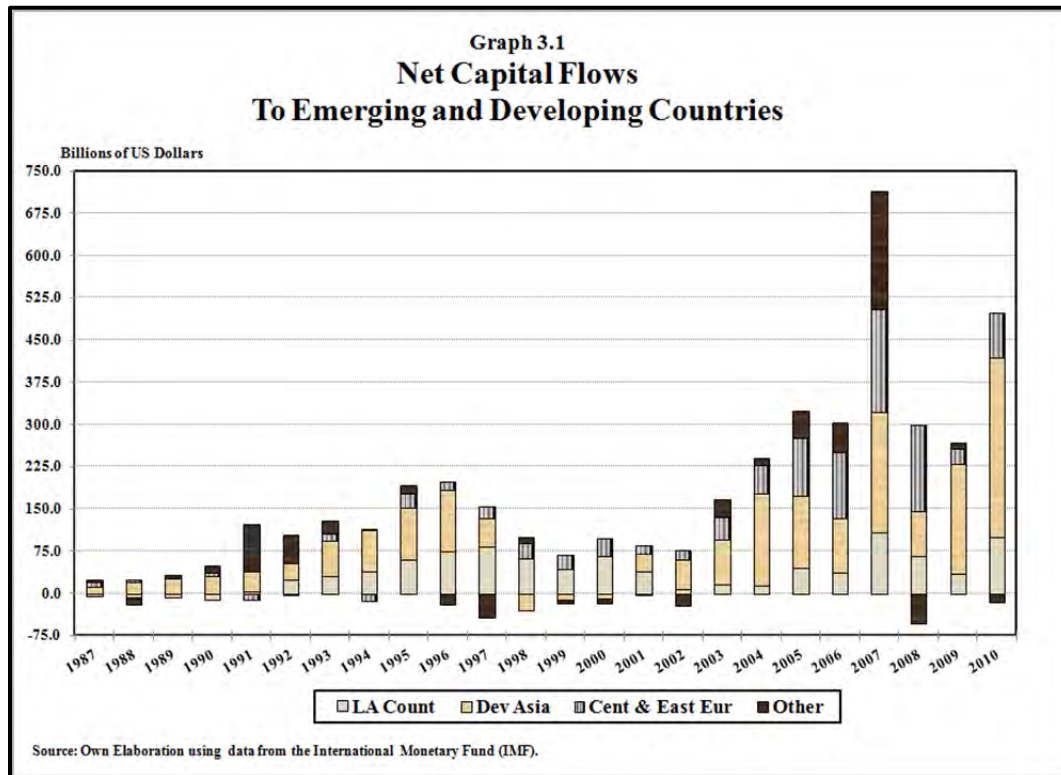
One of the main features of this BPM is the way that the financial account is constructed because it allows a clear differentiation between financial assets and liabilities of the compiler economy. Therefore, the double entry systems applied by the BPM allow a generally accepted definition of capital flows to any country because it reflects, “Reductions in an economy’s foreign assets or increases in an economy’s foreign liabilities,⁹” (IMF, 2011, p.7). As a result, using Balance of Payments data on liabilities and assets for each country, it will be easier to produce a standardized and generally accepted definition of capital flows to and from each economy.

The data refers to net private capital flows, meaning that it is liabilities net of assets considering together the three types of capital flows considered on the BOP compilation¹⁰: foreign direct investments (it is the category of international investment that reflects the objective of a resident entity in one economy obtaining a lasting interest in an enterprise resident in another economy), portfolio investment (covers transactions in equity securities and debt securities), and other investments (it is a residual category that includes all financial transactions not covered in direct investment, portfolio investment, or reserve assets. For that reason, it covers short- and long-term trade credits; currency and deposits; and other accounts receivable and payable).

⁹ Financial account items are recorded on a net basis separately for each financial asset and liability (i.e., “They reflect changes due to all credit and debit entries during an accounting period,” IMF (2011, p.35).

¹⁰ The next description is based on the Balance of Payments Manual Fifth Edition by the IMF, 2003.

The data on net private capital flows includes 150 different emerging and developing countries. Those were divided among the four main groups of analysis that can be seen on the next graph.

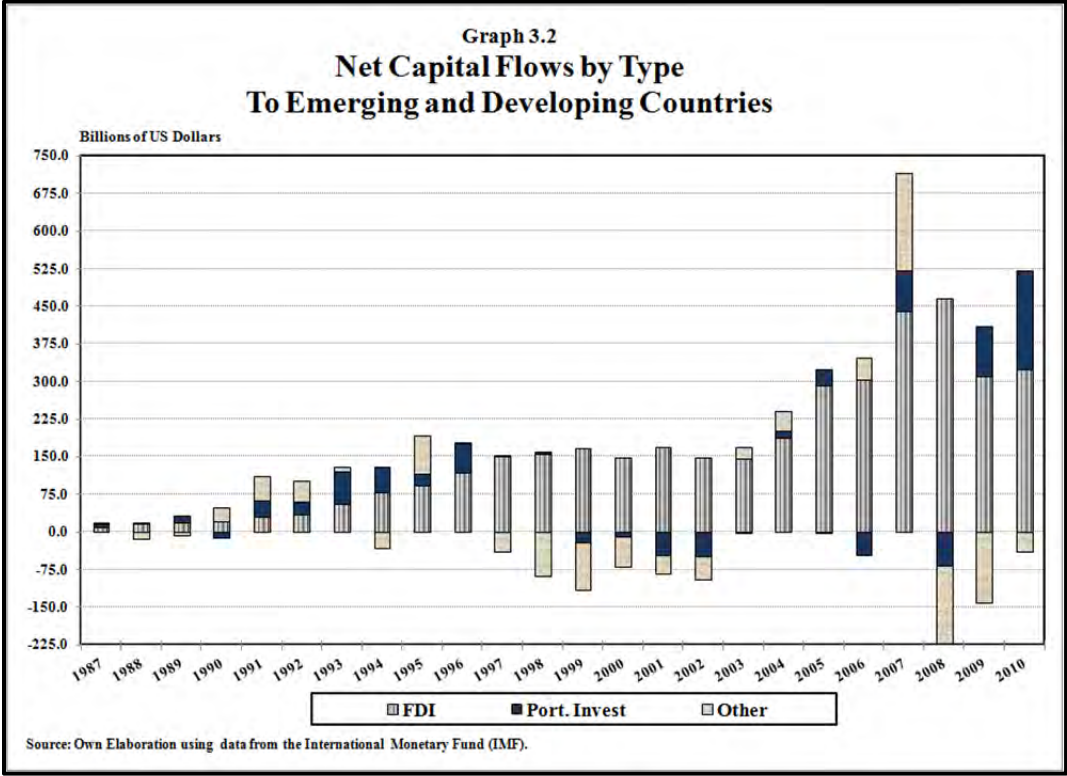


Here, it is possible to see the behavior of the capital flows among the different groups of emerging and developing countries. It is important to note that the capital began to flow up to the Asian and Argentinean Crises, when capital flows retreated little. However, then it began to surge again in the 2000's with very high impulse, only to retreat again as consequence of the global financial crisis in 2008-2010.

In addition to the behavior on the general capital flows, it is important to note the composition among groups. Where, the Asian and Latin America countries registered an

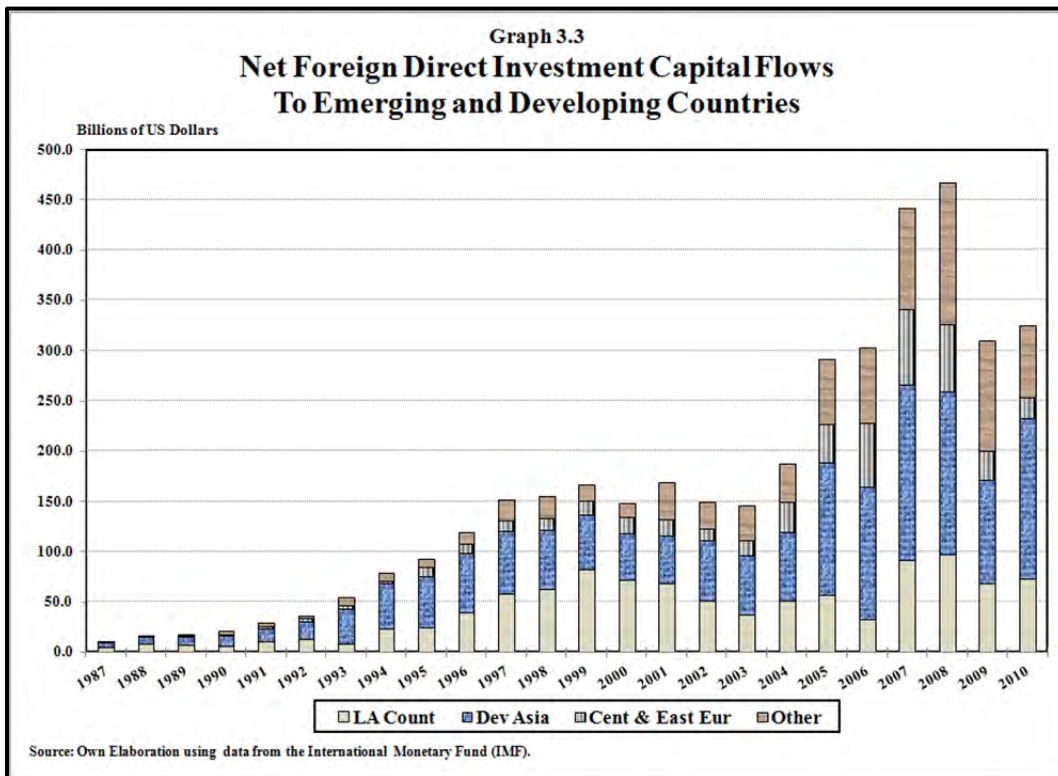
accumulative increase of around 2,400% during the period of 1987-2010, while the Central and East Europe registered around 900% and the other countries registered a reduction. So, even in the changing composition among those countries, given the disruptions occurred on different well know times, there was an increasing tendency that makes the capital flows a fundamental part of the macroeconomic conditions of those countries, especially for the LA and Asian countries.

But considering separately the type of capital flows, as it can be seen on the next graph, the data indicates that only the foreign direct investment was consistently positive and almost all the time growing (up to the global financial crisis episode) while the other two types were very volatile types of capital flows.



Considering separately the FDI type of capital flows and the country group distribution, the data shows that there is a great dispersion among groups, even though those countries began having small amounts of capital flows in the late 1980's, and that those have been behaving differently.

Also, the data shows a tendency of replacement among groups, because with the Asian Crisis, the LAC gain preponderance but it was lost in favor to the other countries in good part of the 2000's. But the groups also show the gaining of importance of some of the Asian countries (like China and India) in the world production. Secondly, is that the Central & East Europe and Other countries also had positive and increasing capital flows. This is displayed on the following graph.



The relative growth of capital flows of the last groups of countries was higher than the registered growth of the Asian and LA countries in the last part of the 2000's. On the Other countries, most of the explanation is related to the fact that it includes most of the oil exporting countries of the Middle East and North of Africa (countries which, by their natural resources, are able to attract capital flows, especially in the 2000's because of the increased oil prices), while the Central & East European countries, because their incorporation to the market system and the end of civil wars in the 90's, allowed the conditions to attract capital flows. Finally, it is important to mention that the relative growth for the Asian countries was three times that of the growth of the Latin America Countries in the period 1987-2010, as a mainly consequence of the openness to the international market of China and India.

The other two types of capital flows (portfolio and other investment), considered alone, show great volatility without any particular tendency, but their behavior is included on the annexed graph 3.1A and annexed graph 3.2A.

In conclusion, the capital flows have been a significant part of the importance that some of the emerging countries have been gaining lately, and among those, the Latin America Countries. For that reason, and because of the persistence and importance on capital flows to this region, the next section contains a descriptive analysis for the Latin America Countries.

2- Country selection and data selection for the Latin America Countries

a. Country Selection

The country selection was made considering the most important emerging and developing countries on the American Continent. Leaving outside some Caribbean islands (among those the biggest were Cuba, Haiti, Puerto Rico), Belize, Guyana, Suriname, and French

Guiana on the continental land, many of those because lack of economic information, or because its small proportion on the total Gross Domestic Product (GDP).

In that sense, in this work when I refer to the Latin America Countries (LAC), it will mean a selection of 20 countries, as it can be seen in the next table, where the countries were ordered according to its importance on the total current GDP valued in US Dollars.

Table 3.1
Latin American Countries (LAC)
Current GDP (1987-2010)
Percentage of Participation

	Country		Percentage	Accumulated Percentage
1	Brazil	BRA	37.10	37.1
2	Mexico	MEX	25.31	62.4
3	Argentina	ARG	11.55	74.0
4	Colombia	COL	5.61	79.6
5	Venezuela	VEN	5.57	85.1
6	Chile	CHI	3.64	88.8
7	Peru	PER	3.08	91.9
8	Ecuador	ECU	1.23	93.1
9	Dominican Republic	DOM	1.02	94.1
10	Uruguay	URU	0.93	95.0
11	Guatemala	GUA	0.88	95.9
12	Costa Rica	CRI	0.69	96.6
13	El Salvador	PAN	0.57	97.2
14	Panama	ESV	0.52	97.7
15	Trinidad and Tobago	TTO	0.48	98.2
16	Bolivia	BOL	0.43	98.6
17	Paraguay	PAR	0.41	99.0
18	Jamaica	JAM	0.39	99.4
19	Honduras	HON	0.38	99.8
20	Nicaragua	NIC	0.20	100.0

Source: Own Elaboration with data from the IMF; Countries' Central Banks; and, Statistical Institutions.

Only three countries contributed 74% of the average GDP (Brazil, Mexico, and Argentina) which indicates the huge dispersion among those on their GDP, meaning the difficulty that aggregated values will be a good depiction of individual countries.

For that reason, I created small divisions that could be more representative for small countries. The groups created are: the Main Three Countries (Brazil, Mexico, and Argentina), the Big South America countries (Colombia, Venezuela, Chile, and Peru), the Small South America Countries (Ecuador, Uruguay, Bolivia, and Paraguay), The Central America Countries (Guatemala, Costa Rica, El Salvador, Panama, Honduras, and Nicaragua) and, finally, the Caribbean Countries (Dominican Republic, Trinidad & Tobago, and Jamaica). The GDP distribution among these country groups can be seen on the annexed table 3.1A.

b. Data Selection

As a result of the major objective of this study, my main focus is on those capital flows that flew to the Latin America countries and, according to the analysis mentioned earlier, using BOP data of the financial account on liabilities for each country will make it possible to produce a standardized and generally accepted definition of capital flows to each economy¹¹.

According to this objective, I will focus on those capital flows that reflect market considerations; meaning that I will leave out Government transactions that were realized between those and International Financial Institutions and those that were made bilaterally with other Governments.

¹¹ Capital flows are defined as the net increase of foreign liabilities of the Latin America Countries. The LAC assets part is important as well, although a research to unravel the reasons to move out of those countries is necessary, this is outside of the scope of this study. So it is left as a suggestion for future research.

Also, considering the different nature of those capital flows, it is necessary to consider the different classifications suggested by the BPM. The Financial Account of the BOP classified the financial transactions on those related to Foreign Direct Investment (FDI); Portfolio Investment (PI) that include equity transactions, that are less than 10% of the total power voting, and the transactions of other debt instruments, such as, securities traded on organized or other financial markets; Financial Derivatives (FD); and Other Investment (OI) that includes all the other financial transactions not considered earlier, are divided among those related to loans, currency and deposits, trade credit, and all other transactions.

However, because of this general classification, I considered that making a different arrangement of this disaggregation can facilitate the analysis. For that reason, I will analyze the capital flows as total capital flows that include all types of capital flows called “All kinds” that comprises the sum of FDI, PI, and OI¹².

But I also propose to analyze a part of the total capital flows disaggregated in two other types of capital flows. The first one is called “Firm related” and the other is called “Debt”.

The “Firm related” capital flows includes those capital flows related directly to investments on equity or ownership of firms. For that reason, it not only includes FDI, but it also includes the portion of the PI of those financial transactions of equity (the BPM separate these flows from the FDI because it is considered that there is no change of control on the firm when the transaction involves less than 10% of the capital). Meaning that those capital flows are directly relates to firms because this indicators will “reflect the objective of a resident entity in one economy obtaining a lasting interest in an enterprise resident in another economy.”¹³ I have

¹² Financial Derivatives weren't considered because these kinds of transactions are common on most of the considered countries.

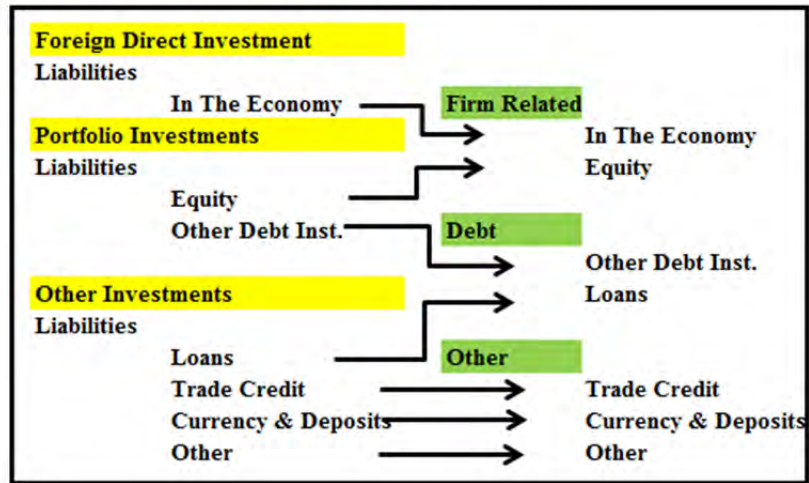
¹³ As stated on the Balance of Payments Manual.

not seen the use of this indicator in other related works, but considering these two parts of capital flows together can give another point of analysis, that will help us to better understand some of the main reasons behind those capital flows. Using the FDI alone will let the part of these capital flows that are related to firms out of the analysis but because were less than 10% of the total stocks were compiled as PI.

Next, I considered those capital flows that were related to debt transactions, so the third capital flows indicator is called “Debt” and it is constructed using the part of the PI related to transactions of debt securities (in the form of bonds and notes and money market instruments) and the part of loans of the OI (“comprise those financial assets created through the direct lending of funds by a creditor (lender) to a debtor (borrower) through an arrangement in which the lender either receives no security evidencing the transaction or receives a non-negotiable document or instrument,” as stated on the Balance of Payments Manual). This indicator will contain all capital flows of the countries to be used by the private sector on an economy, but it also will contain an important component for some countries, that is the capital flows that are going from the international private sector to the Government by the Issuing of Bonds or other internationally accepted debt instruments.

The composition of these two types of capital flows, using the financial account of the balance of payments, can be seen in the next table.

Table 3.2
Capital Flows Distribution



Each of those capital flows refers basically to the net amount of financial resources that were moved from one country to another (to this concrete case, it will refer to movements to the Latin America Countries). Also, it is important to mention that, in their construction, there weren't any price adjustments considered, such as exchange rate revaluation and others (like the Balance of Payments Manual states).

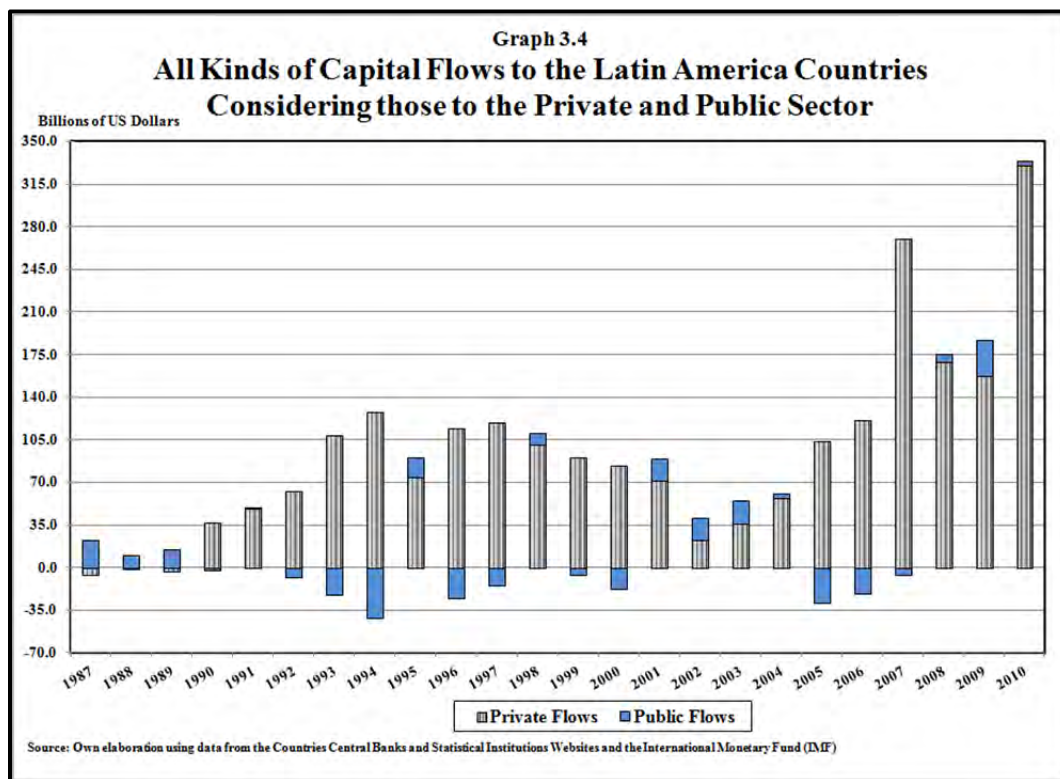
These variables were constructed using data obtained on the IMF Website and on each individual country Central Bank or Statistical Main Institution. I used both sources, because in some cases, there was lack of updated information on the IMF (that is normal because there are periodical statistical revisions of the data for each country), and there were also differences on the data between both sources, so I considered that the main source was each country Website and used the IMF information as complementary. However, I checked consistency and homogenization on the data used to elaborate the indicators. Also, each indicator was elaborated on the total amount and also in its relationship with the Gross Domestic Product (GDP). For that

reason, I used data from the Main Statistical Institution¹⁴ of each country complemented with information from the IMF and, in some cases, with information of the World Bank (WB) Data Base.

3- Data presentation

a. Data Analysis

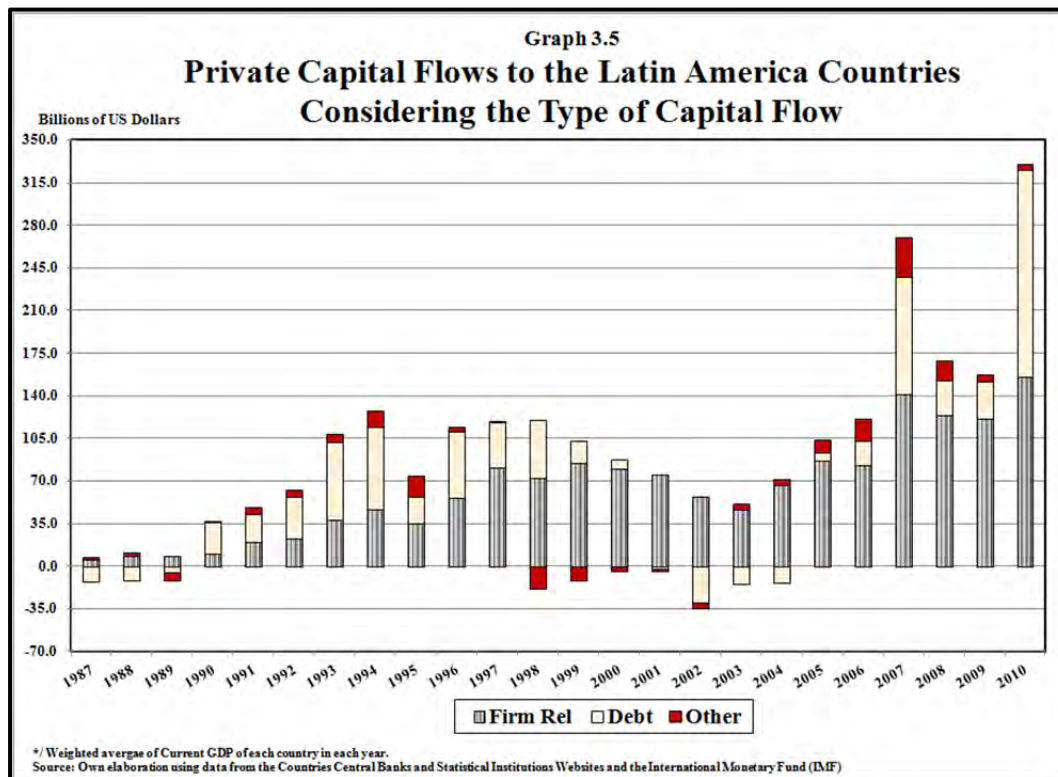
The first consideration relates the total amount of capital flows to the Latin America countries and also considering separately the private flows to those that are public¹⁵. The data shows that the Public flows were the most important on the end of the 80's, but since then, those flows lost importance. So, private capital flows have become the most significant flows for those countries, as the next graph illustrates.



¹⁴ Normally the main economic statistical Institution refers to the Central Bank of each country, but in this particular case, it refers to the Statistical Institutions of each country that are, normally, the ones that compile information of the GDP.

¹⁵ Public includes only those Government financial transactions with International Financial Institutions, country Bilateral Agreements, and other AID financial flows.

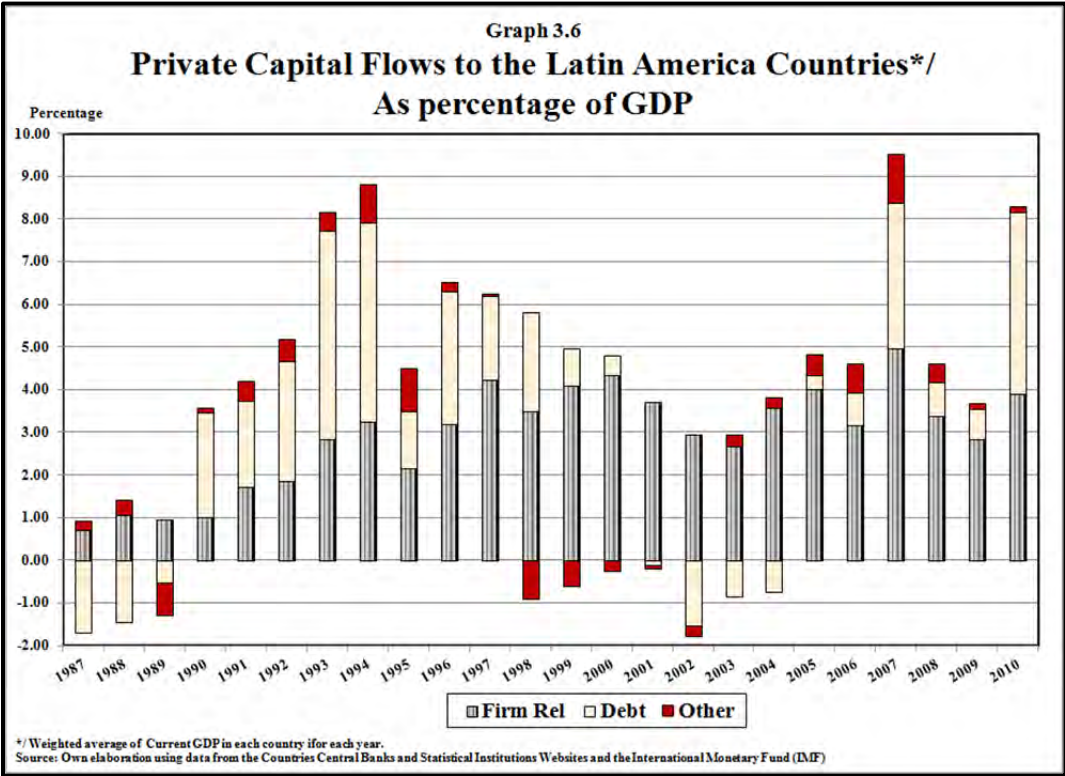
Indeed, the most important capital flows to the LAC has been private. But those can be decomposed according with the classification explained earlier. For that reason, in the next graph, you can see the total private capital flows decomposed in the different types of capital flows.



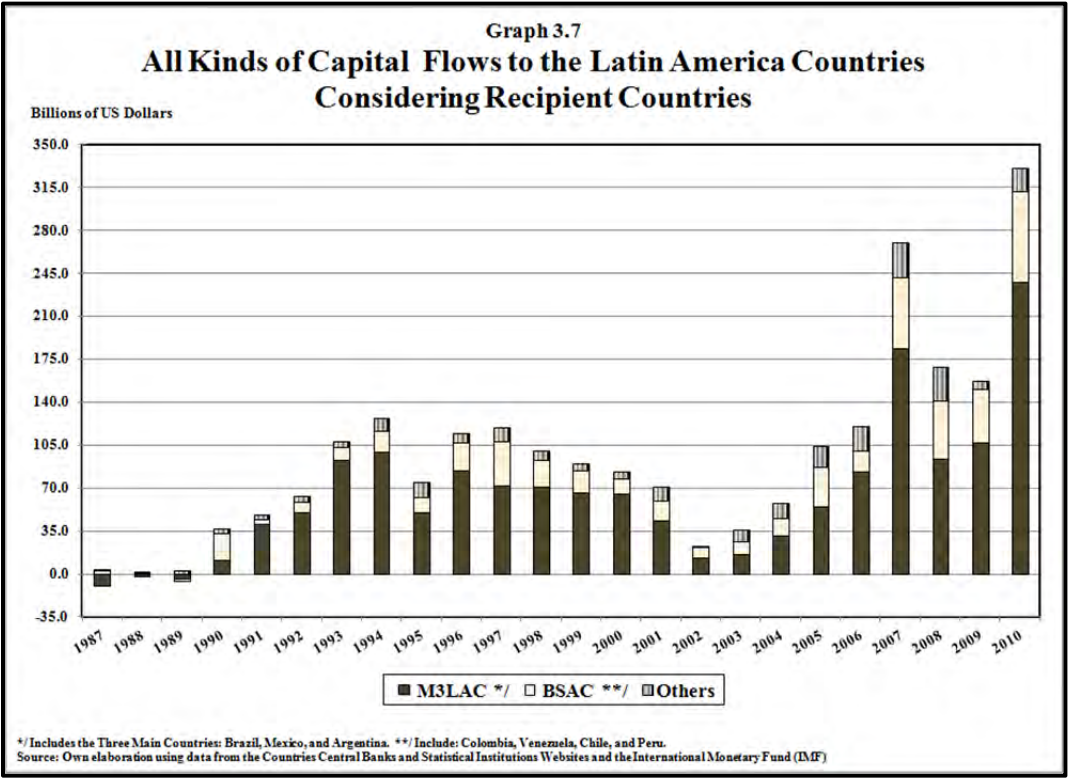
The data indicates that the most important capital flows was the type “Firm related”, not only for its amount, but also because it was positive and with a growing tendency for most of the part of the years. The “Debt” type of capital flows, even though it was important most of the time (from 1990 to 1994 its amount was higher than firm related), registered times when the flows were negatives (meaning net payments). That also confirms the empirical work of many authors, among those, Sula and Willet (2009), Sula (2006), Efremidze, *et al* (2011), and Ghosh *et al* (2012), that those capital flows are subject to Surges and Sudden Stops. There is also two

considerable years (2007 and 2010) when the three main countries received large amounts of debts. The “Other” type of capital flows was really not that important except in 2007 as consequence of movements on currency and deposits on Panama and large amounts of trade credit on Brazil and Peru.

However, when these capital flows are considered in their relationship against GDP, the general tendency is maintained. Meaning that there was increase in those capital flows up to middle of the 90’s, afterwards it began to recover in the beginning of the 2000’s, only to decrease again in the aftermath of the Financial Crisis, but with signal of recovery in 2010. It is also important to note that without the volume effect (by considering their relationship against GDP), the importance of the “Firm related” type of capital flows is preserved, as it can be seen on the next graph.



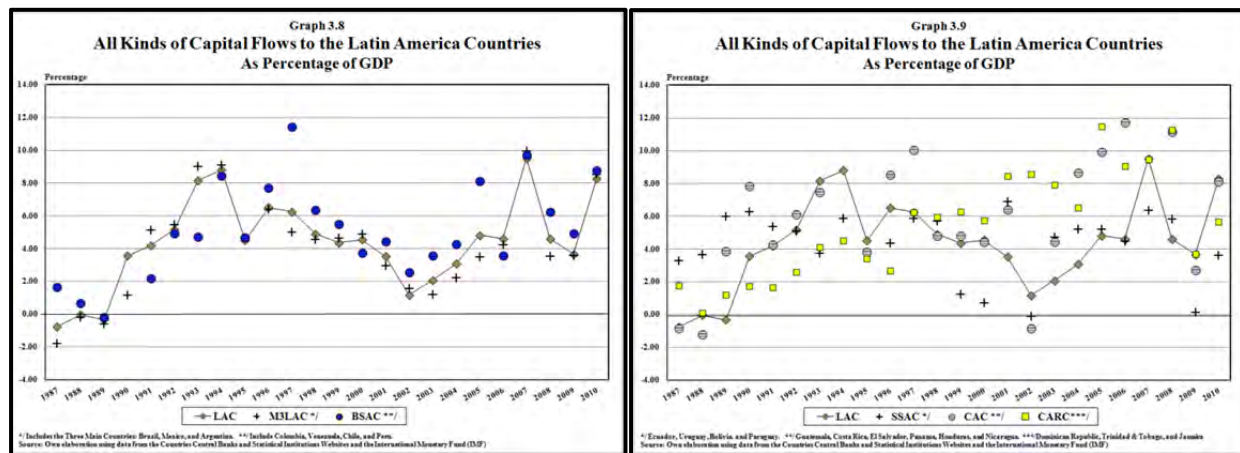
When considering the total capital flows (all kinds) in levels and by the main recipient countries, as it can be seen on the next graph, the three main countries (Brazil, Mexico, and Argentina) and the big South America Countries (Colombia, Venezuela, Chile, and Peru) are the countries that determine the tendency. It is important to mention that this graph denotes three main crises episodes that affected the region which were reflected on the diminution of capital flows.



When the level effect is controlled because of the use of values in its relationship against the GDP, and those values are compared with the general Latin America weighted average, it is possible to see the difference among the countries in the region. Comparing the three main with

the BSAC, both groups have basically the same tendency, with only two years (1997 and 2005), when Colombia, Peru, and Venezuela attract larger amounts of capital flows, making the group out of tendency. In general, the correlation of this country against the weighted average was around 65%.

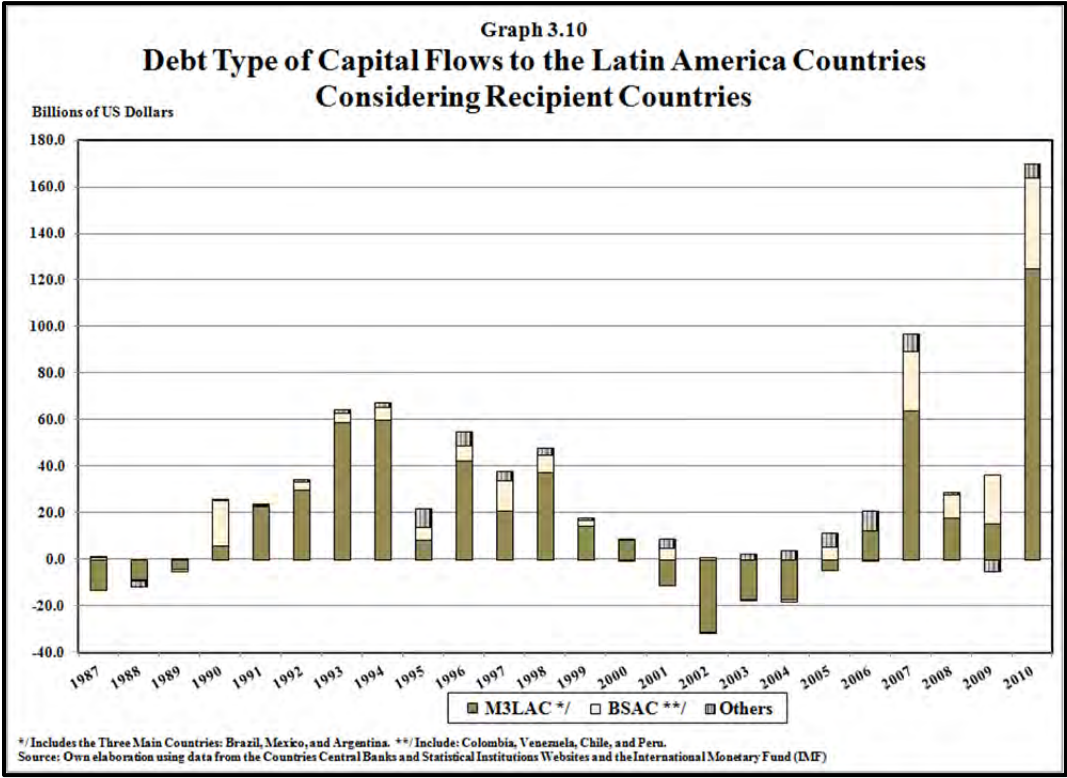
On the contrary, small countries (separated in their groups) show greater dispersion against the average, with the exception of the CAC whose correlations were around 78% to the general weighted average. The other two groups, the Caribbean, who had around 28%, and the SSAC, whose correlation is only around 14%, both groups had higher dispersion. All this can be seen on the next graphs.



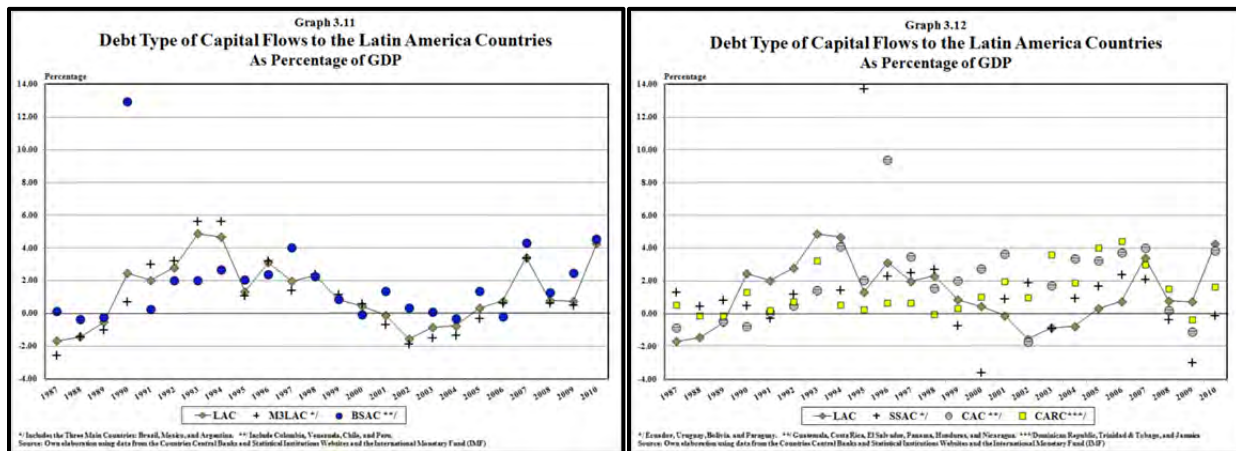
The two graphs above show the divergent region, even though most of the countries attract capital flows, they are doing it not only on their own path but also considering different types of capital flows as well.

Analyzing the different types of capital flows separately, I present the capital flows in the form of “Debt”. This kind of financing was used on the 90’s up until the Global Crisis, where it was widespread used for most of the countries, but especially used by Brazil and Mexico. This

kind of capital flows includes those issuing of bonds that the Government does and that the private foreign sector buy. This is one important form of financing for the governments in those countries, especially for Panama, Peru, and Argentina (when considering their percentages against the GDP). The other component of this kind of capital flows is the private part of loans by issuing private bonds or other financial instruments or through foreign financial institutions. The private part has been less volatile along the time, while the issuing of Government bonds had been used according to the financial needs of the Governments, so it has been more volatile, but important, in the period of analysis. The behavior of this type of capital flows can be seen on the next graph.

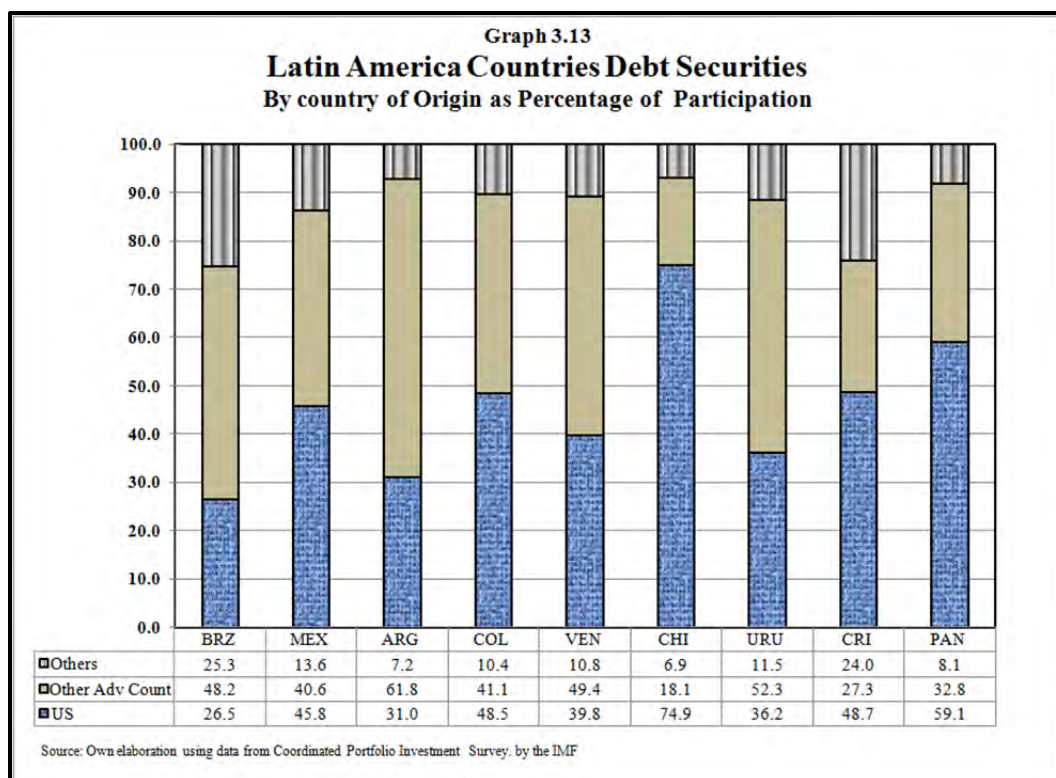


Making comparisons among countries in the regions, one can see their relationship with respect to the GDP compared with the weighted average, as presented on the next graphs.



The first important feature is that the correlation of the BSAC and CAC with the weighted average is only around 50%, while for the SSAC, it is only 11% and the CARC 6%. So this is a kind of capital flows that the region uses very differently. That can be considered normal, because the issuing of Government bonds represented 45.9% of the total capital movements in this kind of capital flows; so, each country did it considering their different economic and political conditions. There is one year (1990) for the BSAC when Venezuela used an extra amount of financing through issuing large amount of Government Bonds. Also, for the SSAC, the Ecuadorian Government issued a larger amount of bonds in 1995, and on the CAC, in 1996; there were the Governments in Panama and El Salvador who issued larger Government Bonds.

Another way to make an analysis of this data is by considering the origin of the financial resources and even when there is lack of information, using the data of the Portfolio Investment Survey by the IMF¹⁶, it is possible to get the information for some of the countries in the region related to part of the “Debt” type of capital flows, because it is only for the liabilities of debt securities¹⁷, as it can be seen on the next graph.



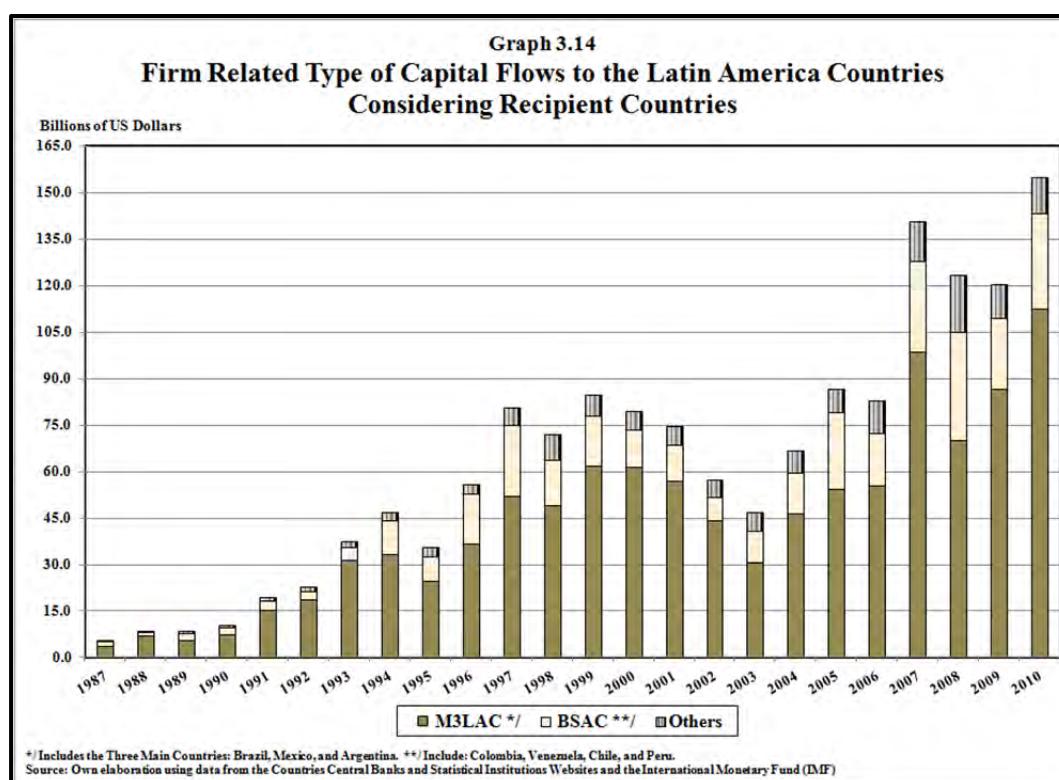
The most important analysis that is possible to extract here is that the main origin of sources is the US followed by the other countries considered as Advanced (European Union, United Kingdom, and Japan). Indeed, in average, around 87% of the resources came from these advanced countries, so it is expected that there should be a linkage between this source of financing and therefore the linkage of the LAC countries with those Advanced countries and

¹⁶ There is limited information in this data base because the participation of the countries is not mandatory, so just 9 of 20 countries had information and only for the period 1997-2010.

¹⁷ “Debt” type of capital flows includes additional to the debt securities the loans obtained from international sources.

their policies. The graph also shows that Brazil and Argentina are less dependent of the US financial source than the other countries. Nonetheless, not all the countries are included or all of the components of this kind of capital flows, so, this data can give us an idea of the whole LAC.

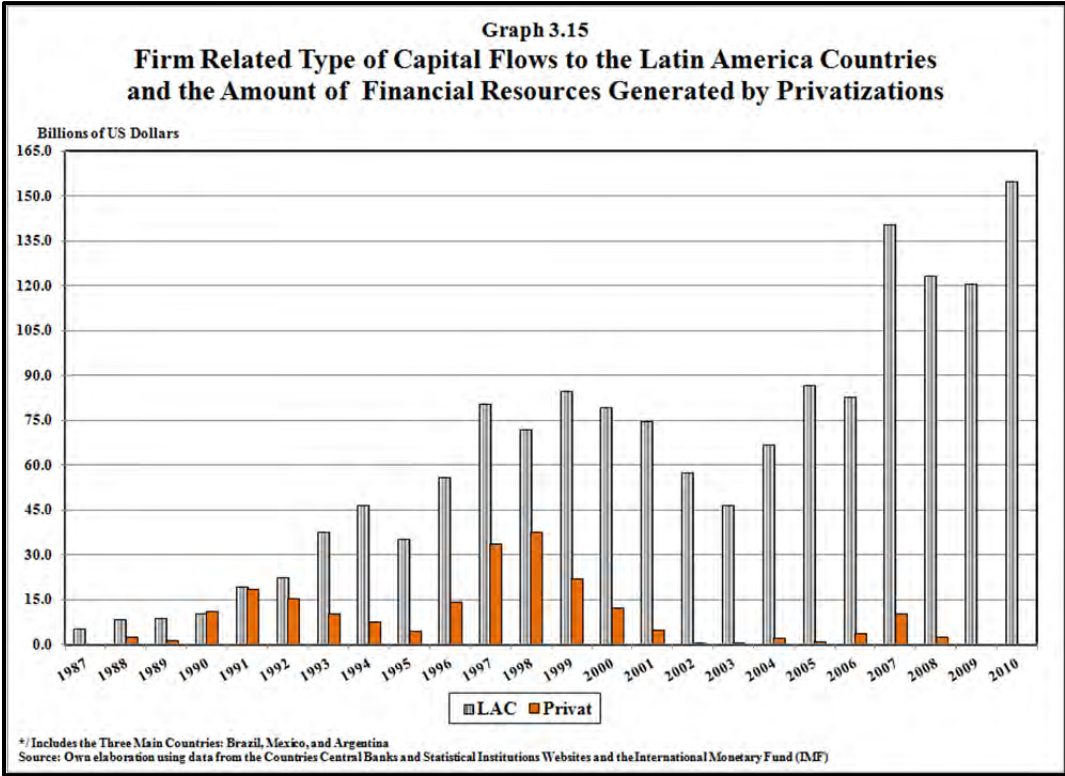
Finally, the more important type of capital flows, not only by its level, but also because it is the only one that was positive most of the time is the “Firm related” type, which is presented on the next graph.



There, data shows that there was a huge impulse of this type of capital flows during the 90's, afterwards it had some contraction to return to its growing tendency since 2004. That should be interpreted as if there was something greatly encouraging those flows during these two different time periods. Indeed, there is a considerable factor to take into consideration for the first period of time. That factor is that, since the end of the 80's, most of the LAC were involved in a process of privatization of their state-owned firms. Certainly, it was generally accepted that

those state-owned firms have been having failures as consequences of the conflict of interest by political reasons and an inferior performance of those firms as affirmed by Chong and Lopez-de-Silanes (2005).

According to the data from the World Bank, in the total sales of the world of those kinds of firms, and considering the period 1988-1999, the LAC did almost 56% (around 179.4 billion of US Dollars) of those sales. And that amount represented almost 38% of the total capital flows that those countries attracted in the form of Firm related¹⁸. This information can be seen on the next graph.



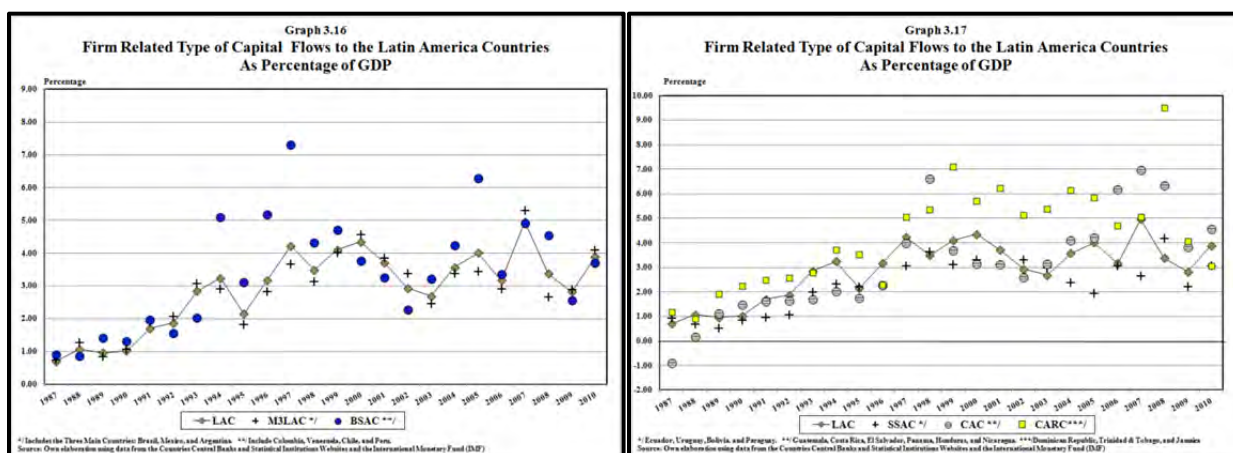
¹⁸ The data was obtained on The World Bank Database on Privatizations. Also, I would like to state that I'm not affirming that all of these firms were sold to foreigner buyer, because there is not enough data to corroborate this, but there are good indicators that showed that most of these sells were.

As it can be seen, there were some years when the privatization could have been the explanation of a large part of the growth on this type of capital flows. But, according to my interpretation, by selling those state-owned firms, the LAC Governments not only finance their need, but it also meant a change of policy through more market oriented economies, which made these countries more attractive to international investors.

This factor, together with the internationalization of most of the big firms around the world¹⁹, allowed a divergence of the productive process among different countries taking advantage of the technological advances in order to reduce cost and increase production, converting the market orientation of firms to move internationally, and it helped create global firms that are able to go to any market around the world, not only the nearby countries. Not only is the productive process subject to be moved to emerging and developing countries, but has also been possible to move part of the back office. That has created enormous investment opportunities for those countries. In fact, all countries on LAC, mostly since the end of the 90's, created specialized Investment Promoting Agencies (IPA) to merchandize the investment incentives of each country to foreigner investors. So, the increased opportunities that this global world offers together with sound economic policies, has been the main explanation for the increase, on this case, of capital flows during the latest years.

That has been the case when this kind of capital flows, related to the GDP of each country, is analyzed. It was registered by the higher correlation among the country groups with the weighted average, being for the whole period, around 77%, as it can be seen on the next graphs.

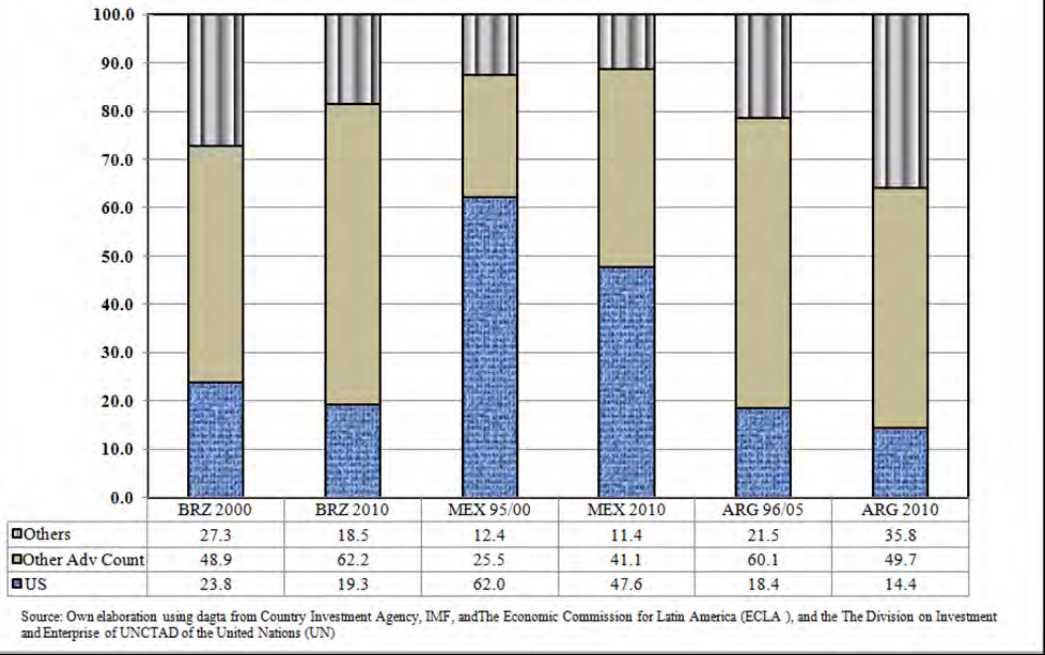
¹⁹ This topic, *per se*, is a complete research opportunity for future analysis.



When the correlation is measured for the 1987-1999 period, the correlation registered of the countries is of 87%, mainly because it was the period where the most of privatizations were completed. However, since 2000 all the countries began to register greater dispersion among the capital flows that they are able to attract because the correlation decreased considerably.

Additional analysis could be performed when considering the country of origin of these capital flows. It is important to mention that there aren't homogeneous data sources on this aspect, because even when the IMF had its Coordinated Direct Investment Survey it didn't make it mandatory and there are only 10 of 20 countries who presented information only for the 2009-2010 period. So, I complemented information for the other countries using data from the Central Banks and the IPA from some countries; and I also used data from The Economic Commission for Latin America (ECLA) and The Division on Investment and Enterprise of United Nations Conference on Trade and Development (UNCTAD) which are both from the United Nations (UN). I used these different sources because I was sometimes only able to compile information for one period of time and had no opportunity to compare these time periods. The next graph has the data for the main three countries.

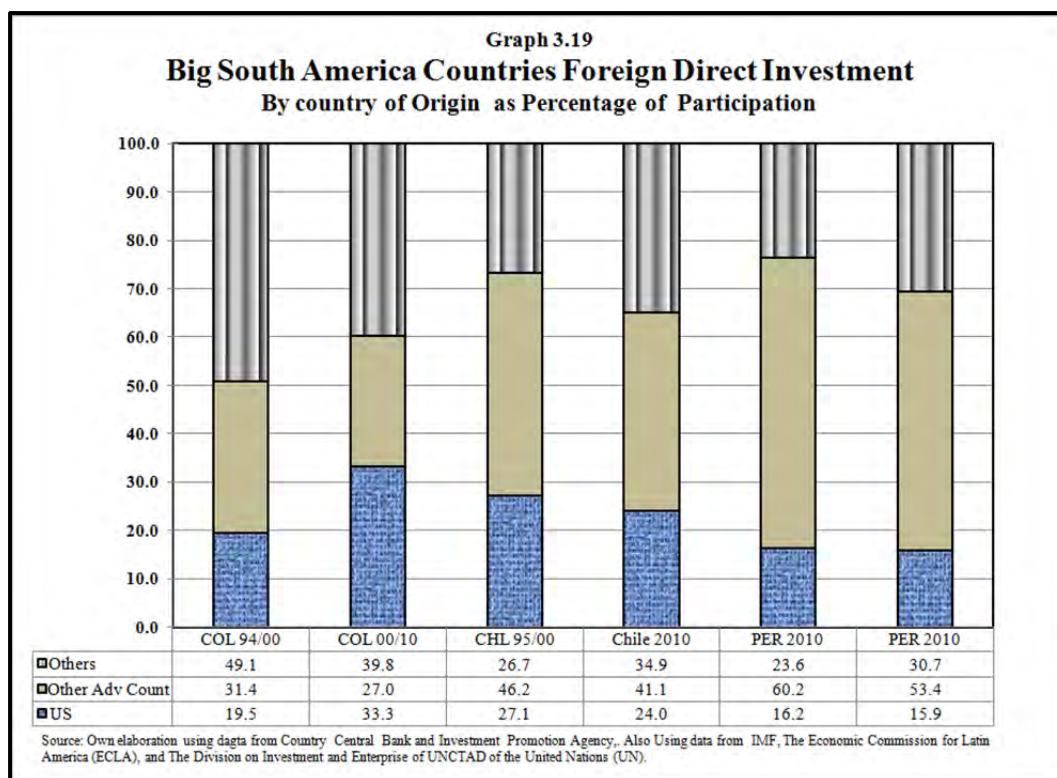
Graph 3.18
Main 3 Latin America Countries Foreign Direct Investment
By country of Origin as Percentage of Participation



For the three countries, there is a decreasing tendency of US participation. For Brazil and Mexico, the AC increased their total participation, while Argentina registered a reduction in the participation of those countries, mainly as consequence of the increasing participation of their neighboring countries: Brazil and Chile. For Mexico, the increase on the other AC was generated by the increasing importance of Spain and Netherland on the total investment. Netherland was also the main country that registered the larger increase on the relative participation on Brazil.

While analyzing the origin of this type of capital flows for the group of countries considered as Big South America Countries, a reduction was registered on the participation of the advanced countries for Chile and Peru mainly because of a larger reduction on the other AC,

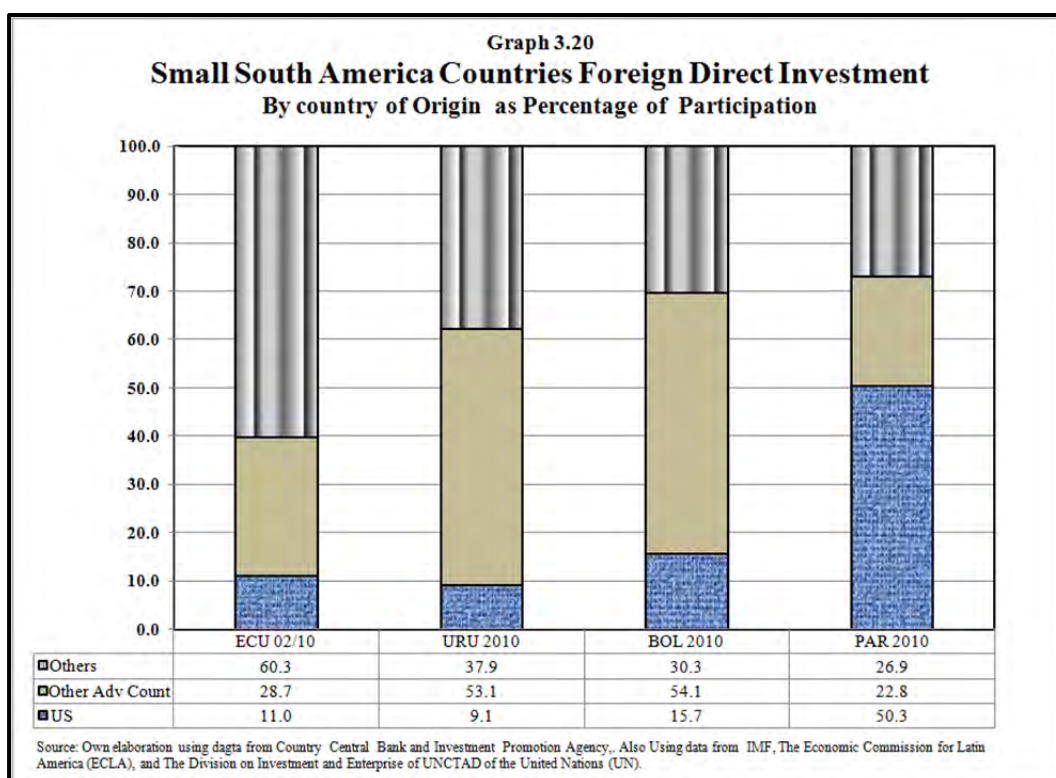
while in Colombia an increase of the AC was registered as consequence on the increase on the participation of US²⁰.



For the Colombian case, it is important to mention that the other countries' participation is considerable because the sources of many of those investments are located on many "tax heaven countries," mainly in the Caribbean. The Chilean case also registered an increase on the participation of other LAC countries and some of those "tax heaven countries." While in the Peruvian case, the difference is mainly a consequence of the higher participation of some of the bigger countries, such as Brazil, Colombia, Chile, and Argentina.

²⁰ I didn't consign the data for Venezuela, given the fact that there were contradictions between two external sources and I couldn't confirm any of those sources.

For Uruguay, Bolivia, and Paraguay (some of the SSAC) the AC are the main source of funds again, however, for Ecuador, those aren't the main source, as it can be seen on the next graph.

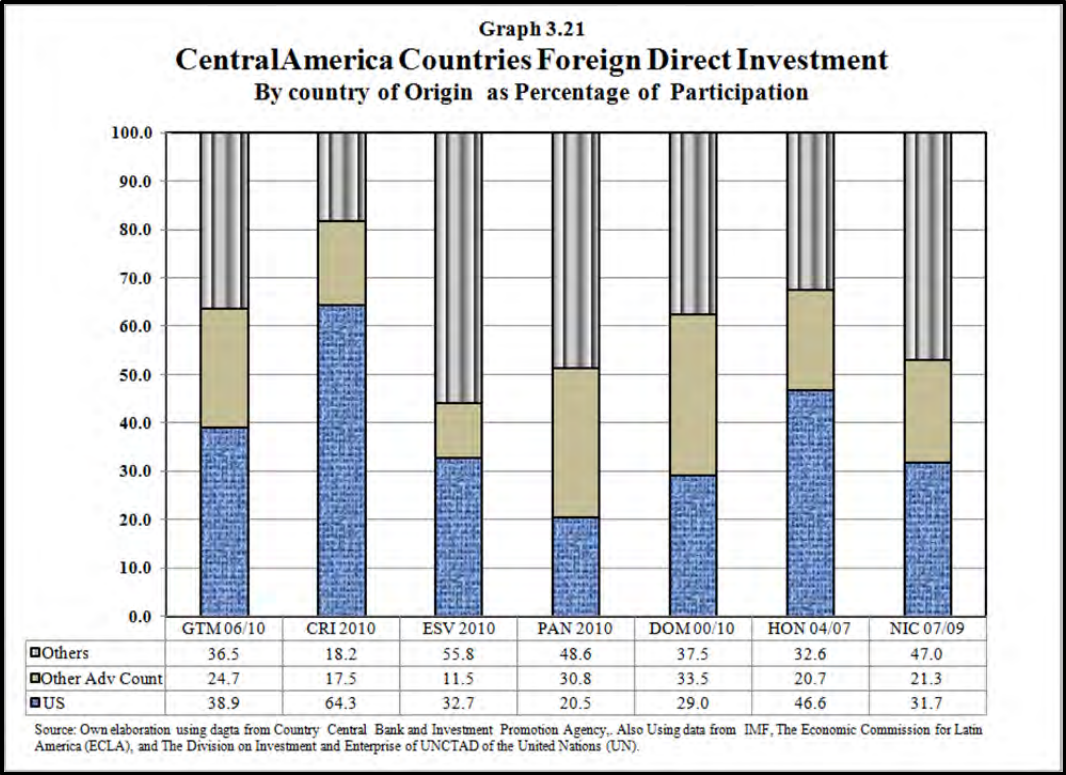


Indeed, in Ecuador the difference against the other countries is generated because other LAC were the source of almost 45% of the total “Firm related” capital flows, being of singular importance countries such Brazil, Panama, and Chile, also, the participation of some “tax heaven” Caribbean countries was important. The other three countries registered an important participation of some of the other LAC, especially neighboring countries.

Finally, when the CAC²¹ are considered, they reflect the same characteristics than the other groups. Because there generally is a preeminence of capital flows coming from AC (with

²¹ Dominican Republic was included in this analysis because I couldn't find reliable information for the other two Caribbean countries considered. However, for the rest of this study, it will remain in the group of Caribbean Countries (CARC).

the exception of El Salvador), there is also the capital flows coming from other LAC, especially countries like Mexico, Panama, Colombia, and Venezuela with increasing importance. The total behavior can be seen on the next graph.



It is important to note that for those countries, Spain had higher participation among the EU countries. It is also important to mention that the participation of Panama as source of capital flows is related to the nature of financial center of this country.

Even though there is lack of complete and homogenous information, some of the data allows one to see a tendency when the AC are decreasing in relative importance, and in some cases other LAC, which are gaining importance, especially the bigger countries who are investing in the small ones.

4- Concluding Remarks

The main type of capital flows that the LAC has received is “Firm related” to the firms, because it has been persistent along the time, while the others types, have registered more volatility. Indeed, the “Debt” type of capital flows registered high volatility mainly by the portion of Government bonds included here; such issuing that was made according to the specific characteristics of each country.

Regarding the “Firm related” type of capital flows, the privatization process and the country’s change of policies appears to be fundamental on good part of the 90’s on attracting capital flows; afterwards it, appeared to be the combination of different factors that have had role on this. Even the size of the economy matters on attraction of capital flows. However, it appears to be a substantial correlation between those countries when it is considered this type of capital flows. But when “All kinds” of capital flows is considered, the BSAC and CAC are the most correlated to the M3LAC, while the other two groups appear to have a more independent behavior.

Finally, considering the origin of funds, there is a relevant importance of the AC on it, being much more important when considering the debt securities part. Additionally, there is a tendency to decrease such importance, especially the US role along the time period. Also, the role of some LAC (specially the big ones) are having on the capital flows towards other countries in the region is remarkable, being important to the economy size and proximity. But also, it is important to mention that some “tax heaven” Caribbean countries are gaining significance on this consideration, as well.

Because the Latin American Countries have been receiving capital flows for different causes, it could be important to reveal some of the main causes of this attraction in order to understand if domestic or foreign factors are preeminent on this behavior.

Chapter IV: Economic Models to Use

In order to assess the implications of the US Monetary Policy for the capital flows to the Latin America Countries, I performed the analysis in two phases: The first consists of an analysis that allows me to understand the relationship between one of the main policy instruments of the monetary policy such as the Federal Funds interest rate and the long term interest rate such as the US Treasury 10 year bond. Given that the US long term interest rate is considered one of the main indicators on the international financial markets because of its role as the international interest rate reference. For that reason, its behavior can influence the capital flows to emerging and developing countries.

The second phase consists of developing a model of “push and pull factors” on capital flows which would analyze external factors (such as the US long term interest rate, among others) and domestic factors (such as increased return, among others) that are affecting the behavior of capital flows to the emerging and developing countries.

1- Relationship between the Long Term and Short Term United States Interest Rate

a. Theoretical context

The relationship between the US long and short term interest rate has gained considerable relevance in the analysis of the recent global financial crisis, which many analyst consider that the low interest rate had some role on generating such crisis.

Indeed, even though there is no general consensus on the causes, Willett (2009) mentions that the combination of factors (using his own and other economists analyses, he makes

a list of suggested causes), among others²², “Excessively easy money” (generated in part by the low interest rates in US); “Deregulation or unregulation,” Beliefs that housing prices never fail,” “Global Saving Glut related to endogenous liquidity,” and “Excessive faith on risk models and rating agencies,” fuelled the credit boom and the bubble on the housing sector by, “easy money also played a considerable role, both by facilitating financing and through changing the incentives facing many financial decision makers.” That kind of behavior, as he and other analysts believe, generated the financial crisis that triggered when the housing bubble burst in 2007.

On the contrary, the former and current Chairmen of the Federal Reserve Bank (FED) (Allan Greenspan 2005, 2010; Ben Bernanke 2005, 2007, 2009, 2010) argue that the failure of the financial system (that finally ended generating such crisis) was related to many other reasons, but not the Monetary Policy²³; arguing causes such as the “Interest Rates Conundrum” in the long term interest rates (because of the lack of response to the increase in the FED Funds rates in the period June 2004 to July 2005), “The Global Saving Glut” (changes the international pattern of capital flows), and the increase of complex financial innovations that made the regulatory functions of the FED difficult and a misunderstanding of the degree of riskiness.

Related to the Interest Rate Conundrum phenomenon, it was statistically supported by some economists among others, Forbes and Warnock (2011), Beltran, Kretchmer, Marquez, and Thomas (2010), Mees (2010), Warnock and Warnock (2006, 2009), Craine and Martin (2009); and Rudebusch, Swanson, and Wu (2006). However, some of these don’t agree completely with Greenspan and Bernanke’s point of view because some are arguing that there are other aspects to

²² The complete list is on an appendix on the paper: The role of Deficient Mental Models in Generating the Current Financial Crisis, but he also analyzed with more detail some of these causes on the paper: Lessons for Economist from the Financial Crisis (2010).

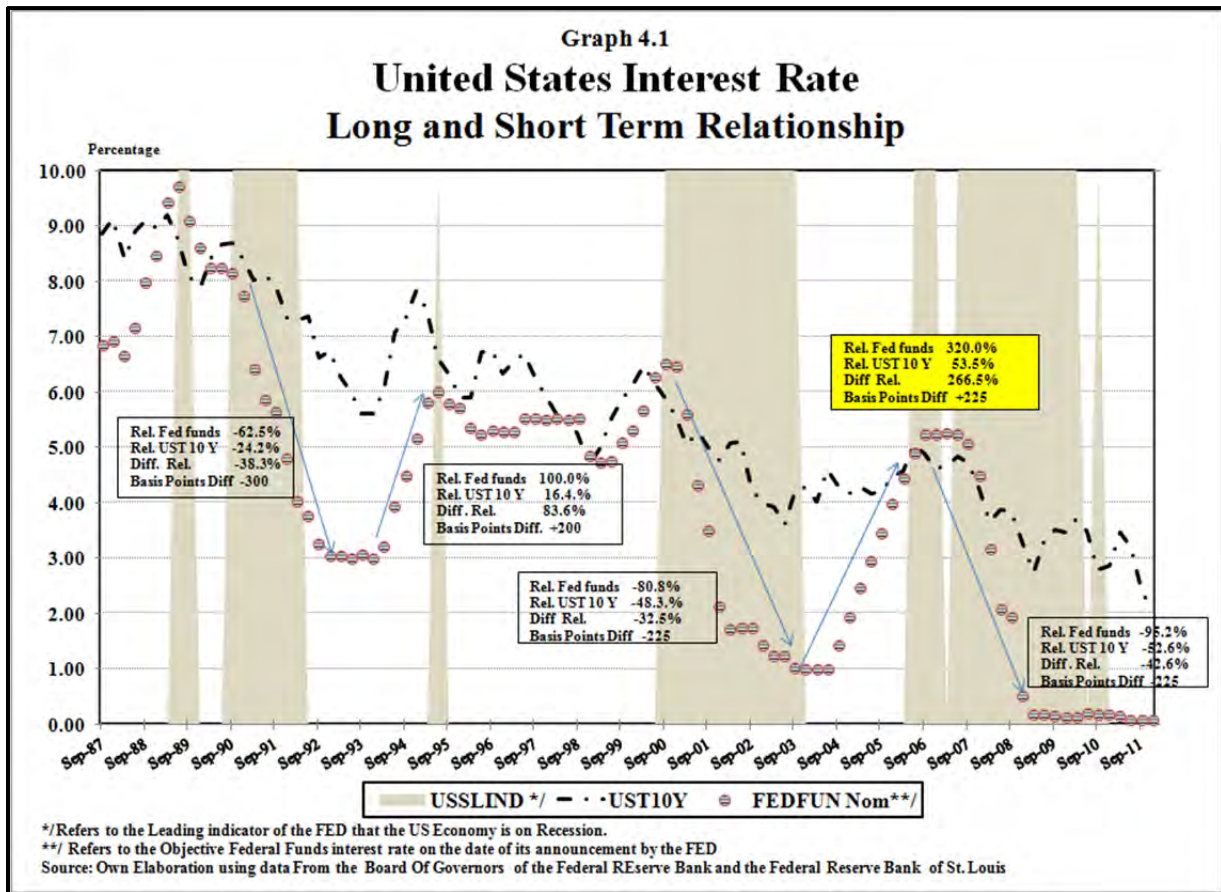
²³ I’m not implying with this that the US Monetary Policy was the only cause of the financial crisis, and I believe others authors don’t think that either. I’m just signaling that such policy could have some implications. But that is other research that is out of the scope of this study.

take into consideration explaining such phenomenon. They especially, believe that there was some determination on the behavior of the long term interest rate by the huge demand on US Treasury securities by foreigners. Even though the relationship of the long and short interest rate using data on the US Treasury is not completely developed, Warnock and Warnock (2009), and Beltran *et al.* (2010) state, there is evidence of its importance, especially on the aftermath of the crisis.

In contrast, Taylor and Smith (2009) did not find support for the interest rate conundrum and Maurice Obstfeld and Kenneth Rogoff (2009) also disagreed in regards of the Saving Glut.

Indeed, Helen Mees (2010) affirms that there is also a “Decoupling of the monetary policy rate and long term interest rates” not only in the United States, but also in the United Kingdom and The European Union (comparing the observed value of 2002-2008 against the Germany value of 1982-2001).

In order to see this phenomenon more clearly, the behavior of the US case is presented in the next graph where there is the behavior of both interest rates (short term is the Objective Fed funds interest rate²⁴, and for the long term, is the US Treasury 10 Year Securities). The shaded portions if the US economy is in recession²⁵. Together these indicators can give us an idea of the pursued Monetary Policy. There are five different periods where the Objective Fed Funds interest rate changed its path (meaning it went from increasing to decreasing, etc). For each of those periods, the relative change of both interest rates is also registered along with the nominal change in basis points.



²⁴ The difference between the Objective Fed Funds interest rate and the effective interest rate is that the Board of Governors of the Fed determines the former, while the other is the effectively observed in the market. The correlation between those is of 99%.

²⁵ I used the leading indicator of US in Recession from the St. Louis Federal Reserve Bank. But, I considered that there is a tendency toward recession if the indicator is below the average of the period 1984-2011, because it could reflect the need of countercyclical monetary policy as soon as this indicates tendency through recession.

As it can be seen, there is not a perfect correlation between changes on the short and long term interest rate. Indeed, when the data of the five periods is investigated, the data indicates that there are differences between the changes of both interest rates. But more important than that is the magnitude of such differences. Because I'm considering the net relative changes (the difference between the percentage of change on the Objective Federal Funds interest rate and the percentage of change on the US Treasury 10 years constant maturity), there is a huge difference, as one can see, especially on the period from June 2003 to June 2006²⁶ (more or less according with the Greenspan claim) when the difference climbed to 266.5% (because the Federal Funds increase 320.0% over its initial value, while the US Treasury just increased 53.5%). However, when considering the net change in basis points²⁷ in three of the five periods, the difference of the changes was around 225 basis points; while in another analysis, considering quarterly data, such difference was only of around 200 basis points and the greatest difference was 300 basis points (and this wasn't during the 2003-2006 period). So, it appears that there is always a difference of around 225 points that is maintained in each period²⁸, which could mean that, contrary to the statements by Greenspan, Bernanke, and others, there is no lack of relationship.

b. Proposed Model

I undertook an application of Helen Mees (2010) for the domestic relationship between those interest rates following some statement of Greenspan, when she states that "This can be stylized straightforward level model (affine term structure), where in the 10-year treasury

²⁶ I did the calculations of the periods when the Federal Funds interest rate changes tendency (from upward to downward, or vice versa) according to the determination of the US Monetary Policy.

²⁷ I rounded the observed US Treasury interest rate to the nearest base of change of basis points that the FED uses (around 25) in order to make comparative the data.

²⁸ I also made calculations of the differences of these basis points, lagging the US Treasury interest rate a quarter of year, but the results are similar with the average difference of 325 basis points for each period.

equal to fed funds rate plus a constant”. So, for that reason, I will be using the next domestic model to determine the long and short term interest rate relationship using an OLS regression analysis²⁹. With this simple model, I’m able to measure the correlation between the short and long term interest rates, leaving, as stated earlier, for future and more complex analysis of long term interest rate causation.

- **Domestic Model of Long-term Interest Rate Yield**

$$i_{t1} = c + \alpha(ff_t) + \varepsilon_t$$

Where:

i_{t1}	Long-term interest rate (t period)
ff_t	Federal Funds Rate (effective)
ε_t	Error term

2- “Push and Pull Factors” Model of Capital Flows

Pursuing the earlier analysis, I will be able to understand the correlation between the short and long term interest rates. So, that implies discovering the correlation among the main tool of the US monetary policy (Federal funds interest rate) and one of the main benchmarks in the international financial markets (US Treasury 10 years bond interest rate). But, understanding this would not be enough to assess the effects of the US monetary policy on the capital flows to the Latin America countries. In order to evaluate this, I propose a “push and pull factors” model to assess which of those factors are more important on the capital flows behavior to the LAC.

²⁹ Considering that this analysis is just part of the main objective of the study (the capital flows to the LAC), and that this topic, by itself, can be another greater and advanced research, I will make a basic OLS analysis.

a. Theoretical context

The surge in capital flows to the emerging and developing countries since the middle of the eighties was first considered by some economists, such as Fernandez-Arias (1994); and Calvo, Leiderman, and Reinhart (1993), as consequence of external factors, “push factors” (as a result of the recession on the advanced countries and a lower interest rate) and domestic factors, “pull factors” (as an effect of the attractiveness of some of the domestic economies by improvements in its economic and financial performance).

Because the capital flows to those countries hasn't ceased (with some well known exceptions), the persistence of some of the conditions mentioned and the addition of new global factors, such as the reduced risk perception, the increased global liquidity, and the enormous advances in technology, that allowed improvements and sophistication on the financial engineering, etc. But the emerging economies have also been sustaining economic growth, improvements in their financial sector that has allowed them a successful integration to the global markets; in some cases the countries have more sound and consistent economic policies, etc. Some authors have been working with new and improved “push and pull factors,” and some of the main ideas of analysis performed considered to the model can be seen in the next table:

Author	Push Factors	Pull Factors	Comments
<p>International Monetary Fund -IMF-, WEO (2011a)</p>	<ul style="list-style-type: none"> - US interest rates (proxy: Federal Funds interest rate and the federal funds rate futures by the Chicago Board of Trade CBOE) - risk aversion (proxy: volatility Index -VIX- by CBOE) - Financial and Trade exposure to US (proxy: US Treasury Capital System Data Base – TICS- on assets and liabilities US vis-a-vis other countries; BEA Direct Investment Statistics; IMF International Investment Position Statistics) 	<ul style="list-style-type: none"> - GDP growth - short term real rate - liquid liabilities/GDP - de facto Exchange rate index (proxy: Binary indicator 1 if pegged, 0 if non pegged. Meaning that non pegged are those countries with managed floating with no pre-determined path and independently floating. Source: De facto Classification of Exchange Rate Regimes and Monetary Policy Frameworks (IMF)) - de jure capital account index (proxy: Chin-Ito capital account openness measure) - International Country Risk Guide -ICRG- composite risk level 	<p>Pursuing globally the analysis fails because is not possible to control for all the push factors.</p> <p>For that reason, they added a measure of direct financial exposure to US. With this, push factors had incidence in those countries that had higher exposure to the US.</p> <p>Capital flows are “fickle”.</p>
<p>IMF (2011b)</p>	<p>- Cyclical:</p> <ul style="list-style-type: none"> - low US interest rates (US Treasury 10 year interest rate) - low global risk aversion (VIX by CBOE) 	<p>- Structural</p> <ul style="list-style-type: none"> - high EM potential growth (proxy: Average GDP growth by Decades) - trade openness (proxy: sum of exports and imports / GDP) - average size (proxy: log average GDP) 	<p>The push factors: interest rate and risk aversion affects the capital inflows. (A yield shock of 100 basis points to the U.S. 10-year Treasury bond is estimated to be associated with, on average, a 31 percent reduction of bond inflows to Ems. A 1 percent increase in the VIX is associated with a 0.5 percent drop of portfolio inflows to EMs.)</p> <p>Pull factors: the potential growth and trade openness matter on the capital attraction. (A one percentage point increase in EMs growth is estimated to be associated with, on average, a 4 percent increase in total inflows)</p>

Author	Push Factors	Pull Factors	Comments
Forbes and Warnock (2011)	<ul style="list-style-type: none"> - Global factors: <ul style="list-style-type: none"> - risk aversion (proxy: Volatility Index, old methodology of VIX by CBOE) - interest rates (proxy: average long term interest rate US, EU, and Japan) - liquidity (proxy: money supply for US, EU, Japan, and UK) - growth (proxy: IMF quarterly global growth real economic activity) - Contagion factors: <ul style="list-style-type: none"> - trade integration (proxy: exports among countries, - financial integration (proxy: banking claims among countries by BIS) Trade and financial integration, measure the importance of the domestic country related to the foreign country that has an episode of surges, stops, flights, or retrenchments) - geographic location or country similarities (proxy: binary indicator: 1 if the countries are in the same region; 0, otherwise) 	<ul style="list-style-type: none"> - Domestic factors: <ul style="list-style-type: none"> - country financial market development (proxy: stock market capitalization/GDP) - integration with global financial markets (proxy: Chin-Ito Capital openness) - growth shocks (proxy: Real GDP growth deviation actual value from its cyclical tendency) - fiscal position (proxy: public debt/GDP) 	<p>They define abnormal capital flows episodes “surges” (a sharp increase in gross capital inflows, is when those increases more than one standard deviation above its (rolling 5 years) mean), “stops” (a sharp decrease in gross capital inflows, is a period when gross inflows fall one standard deviation below its (rolling 5 years) mean), “flight” (a sharp increase in gross capital outflows, is when those increases more than one standard deviation above its (rolling 5 years) mean), and “retrenchment” (a sharp decrease in gross capital outflows, is a period when gross inflows fall one standard deviation below its (rolling 5 years) mean).</p> <p>Then, they try to find what factors explain such episodes.</p> <p>They consider</p> <p>Global risk is the only one that has an effect, not the interest rates, not the global liquidity.</p> <p>Less impact of domestic factors.</p>

Author	Push Factors	Pull Factors	Comments
Mody, Taylor, and Kim, (2001)	<ul style="list-style-type: none"> - US GDP growth - US short term interest rate (proxy: US Government bonds 1 year) - US long term interest rate (proxy: US Government bonds 10 years) - risk aversion (proxy: the US Swap rate and the US high-yield spread, also the Emerging Market Bond Index -EMBI-) 	<ul style="list-style-type: none"> - domestic stock market index - domestic short term interest rates (proxy: 1 year interest rate) - domestic credit level (proxy: domestic credit to the private sector) - inflation (proxy: consumer price index) - debt/Foreign Reserves (proxy: short term debt/Foreign Reserves) - Import / Foreign Reserves - domestic credit ratings (proxy: data from the Islamic International Rating Agency) - Industrial Production level 	Even that the “push factors” have strong effect, they found that the ‘pull factors” dominates the “push factors”, when they are measured as a group.
Bank of International Settlements -BIS- (2008)	<p>Because there is no econometric analysis, there are no proxy variables.</p> <ul style="list-style-type: none"> - low real interest rates worldwide decreased sovereign spreads - decreased levels of risk aversion - high commodity prices that improve terms of trade 	<p>Because there is no econometric analysis, there are no proxy variables.</p> <ul style="list-style-type: none"> - GDP growth - increase in the marginal propensity to save - current account surpluses - increased level of International Reserves (IR) - improved monetary and exchange rate policies - financial integration to the international market 	There is no econometric analysis, but interesting approach to financial integration by de jure and de facto measures.
Bank of International Settlements -BIS- (2009)	<p>Because there is no econometric analysis, there are no proxy variables</p> <ul style="list-style-type: none"> - accommodative Monetary Policy for sustained period in AE - low interest rates in AE - low risk premiums - search for higher yields 	<p>Because there is no econometric analysis, there are no proxy variables.</p> <ul style="list-style-type: none"> - robust GDP growth - higher returns - strong fundamentals 	There is no econometric analysis, just descriptive analysis.

Author	Push Factors	Pull Factors	Comments
(Yap, 2008)	Because there is no econometric analysis, there are no proxy variables. - decline international interest rates - economic recession in industrialized countries - competition and rising labor costs in industrialized countries, as reduction on transportations cost.	Because there is no econometric analysis, there are no proxy variables. - greater macroeconomic stability, through: - successful stabilization programs - improved fiscal policies - Institutional reforms, such as the capital account liberalization.	There is no econometric analysis. If the Pull factors dominate the surge on capital flows, it is considered that the flows will be sustainable. On the contrary, if the Push factors dominate, it is considered highly volatile.

As can be seen, there is no agreement on the variables or the results of the application of the model, the only conclusion, to my understanding, is that there are two different aspects that can be affecting the capital flows; those that are not related to the recipient country “push factors” and those that are directly related to the country conditions “pull factors”.

b. “Push and Pull” Factor for the Latin American Countries proposed empirical analysis

Given the lack of consensus on one model, I constructed another model with the main ideas that others have applied. For that reason, considering those analyses and the scope of the study, I examined the effect of the US Monetary Policy to the capital flows to the Latin America Countries using a model of “push and pull factors.” I consider “push factors,” as indicators of international interest rates, of risk aversion, and of global liquidity. These factors will be analyzed separately as a group of Advanced Countries (US, European Union, Japan, and United Kingdom) and the US alone, in order to value if the effect of those external conditions are related

to US itself or to the group of advanced countries. As, “pull factors,” I use a measurement of economic return, of country riskiness, and, finally, an indicator that I believe has had importance in attracting capital flows, the privatization of state-owned firms.

A data panel of fixed effects to measure the “push and pull factors” will be used. I chose the fixed effects approach because this type of panel model would not only have constant slopes but intercepts that differ according to the cross-sectional (group), meaning that differences of countries will be considered, and those doesn’t have much temporal differences. So, the model proposed is:

i. Proposed cross section and time fixed-effects panel data model:

$$y_{i,t} = \alpha_i + \alpha_t + \beta_s r_{us,t} + \lambda_s p_t + \Omega_s l_t \gamma X_{i,t} + \varepsilon_{i,t}$$

where:

- i, t (i) Indexes economies; (t) indexes time
- $y_{i,t}$ Ratio of capital flows to GDP
- α_i and α_t Economy and time fixed effects
- $r_{int,t}$ International interest rate
- p_t Risk aversion
- l_t Global liquidity
- $X_{i,t}$ Vector of “Pull factors” such as:
 - Economic return
 - Domestic real interest rate
 - Domestic/foreign GDP relationship
 - Domestic/foreign stock market indicator
 - Country riskiness
 - Privatization
- $\varepsilon_{i,t}$ mean zero error term.

- **Variable Explanations:**

Capital flows will consist of the flows of private capital that are compiled on the financial account of the Balance of Payments of each country related with their GDP and also in their levels. I used data for capital flows as those constructed in Chapter III, using three different measures of capital flows: “All kinds”, “Debt”, and “Firm related”.

International interest rate, as a proxy of the global interest rate, a negative relationship against the capital flows is expected (higher return on the advanced economies, less incentive to invest abroad). I used three different variables: the US Treasury 10 Years constant maturity, a compound of 10 years constant maturity bonds for the Advanced Countries (The US, United Kingdom, European Union, and Japan), and the Effective Fed Funds Interest rate.

Risk aversion, utilizing a measure of global risk in order to assess the general perception of the investor, affects the capital flows. So, it is expected that the higher the general perception of risk is, the more cautious those investor will be investing abroad, so, an inverse relationship between this indicator and the capital flows is expected. I used the calculation made by the Chicago Board Options Exchange (CBOE) related to the Volatility Index VIX.

Global liquidity, is one of the main factor of capital flows, because the higher the amount, the larger the possibilities of capital flows going abroad will be in order to find higher profitable investment opportunities, implying a direct relationship between this variable and the capital flows. I used the growth of the monetary stock (M2) as a proxy for the US alone and also for the compound growth for the Advanced Countries.

Economic return, as high as the economic return on the emerging economies is, those countries will be attracting capital flows. Using domestic real interest rate, it can be expected to have a direct relationship because the capital will flow to the higher return countries.

For this measurement I constructed three different measures of real interest rate on deposits to 6 months compiled from each of the LAC. Another measurement of returns is the domestic/foreign GDP relationship and if the LAC countries have been growing higher than the AC, it is expected to have incentives to invest on higher growth countries. For this measurement, I use the constant GDP growth of each of the LAC and the AC.

Finally, I use other indicator that can point to which countries have higher returns on the Stock Market investment. So, a lagged domestic/foreign stock market relationship based on the main behavior index of the countries was constructed. It is also expected to have a direct relationship because the higher the returns on the stock market, is higher the capability to attract capital flows.

Country riskiness will be an indicator that comprises a set of variables that summary the political, economic, and financial conditions of each country; so, it should have an inverse relationship, because the higher the perceived risk is, the less incentives is to invest in such economy. To measure this, I used the International Country Risk Guide (ICGR) by The PRS Group.

Privatizations, as a dummy variable, it will be a signal when one country made privatization. It will be a dummy, because even in the end of the 80's, when a wave of privatizations of state-owned firms in LAC began, not all the countries registered these and because there is no detailed information about the purchaser, I will assume that many of those privatizations were sold to foreigners or that the international financial markets had financed those purchases. I constructed a data base with information from the World Bank Data Base on Privatizations.

Chapter V: Empirical Analysis of the Relationship between the Long Term and Short Term United States Interest Rate.

As mentioned earlier, the first phase of the analysis consists of an analysis that allows me to understand the relationship between one of the main policy instruments of the monetary policy such as the Federal Funds interest rate and the long term interest rate such as the US Treasury 10 year bond.

1- Data Description and Sources of Information

The data selection and compilation is one of the most important parts of any quantitative analysis; consequently, this section contains a detailed description of this process.

As stated on the earlier section, the behavior of the long term interest rate will depend, among other variables, of the Federal Funds interest rate. In order to assess this, I proposed a model of long term interest rate determinants.

a. Dependent Variable: In this case, it refers to a long term US interest rate, the variable considered as proxy was the US Treasury Securities to 10 Years constant maturity interest rate (yield). The data was obtained from the Federal Reserve System Website and the variable is called “UST10Y”. The data was obtained on a monthly basis. I also made quarter average in order to capture the changes in this period of time and to check if there is difference on the results with respect the monthly data.

b. Independent Variables: In this case, it refers only to the Federal Funds rate as the main determinant that can help explain the behavior of the long term interest rate.

- **Federal Funds Effective Rate:** This proxy for the short term interest rate refers to “the interest rate at which depository institutions lend balances at the Federal Reserve to other depository institutions overnight,” (Federal Reserve, 2012). This price is achieved by open market operations, of which, the short-term objective for open market operations is specified by the Federal Open Market Committee (FOMC) and this is one of the main tools of the Monetary Policy in the US. The term effective is used because it is the observed interest rate in the financial markets that should replicate the postulated by the nominal or objective interest rate³⁰ (according to my own calculations, there is a correlation of 99.3% between these two interest rates, nominal and effective, for the period 1990-2011). The data was obtained from the Federal Reserve System Website on a monthly basis. I also made quarter average of the data. The indicator is called “FEDFU”

2- Data Analysis

The data analysis was made on single Ordinary Least Square regression in order to see the interaction between the long and short term interest rate holding other things constant. To do that, I used the Monthly data on levels for the whole period of time from July 1987 (1987M 07) to December 2011 (2011 M12). But I also used five other time sub periods: (1987 M07 to 2006 M01) that includes the total Greenspan mandate on the Fed. Another period is related to the Bernanke mandate up to the date of the study (2006 M02 to 2011 M12). I also used, the period (2003 M04 to 2011 M12), which includes the period of the “conundrum on the interest rate” phenomenon which is also another period (2003 M06 to 2006 M06). Finally, it is the remaining earlier to the “conundrum on the interest rate” period (1987 M07 to 2003 M03). The analysis of the different periods is in order to see if there is a fundamental dissimilarity between the results.

³⁰ This refers to the stated Federal Funds interest rate announced by the FOMC on its meetings.

a. Econometric Test Results

The first step was to calculate the order of the variables by the unit root test, and as many of the economic variables are, they weren't stationary. Meaning, that the statistical significance of the variables, in levels, it is restrained only to a long term relationship if the residual errors are stationary.

The first result (table 5.1), considers the whole period compared with the two Chairmen periods.

Table 5.1			
Level Monthly Data Considering the different Chairmen's periods			
Dependent Variable: Interest Rate US Treasury 10 Year constant maturity			
Explanatory Variables	Whole Period 1987 M07 to 2011 M12	Greenspan's Administration 1987 M07 to 2006 M01	Bernanke's Administration 2006 M02 to 2011 M12
Interest Rate Federal Funds FEDFU(2)	0.604713 *** (0.0152)	0.579405 *** (0.0184)	0.32368 ** (0.0187)
Constant	3.206556 *** (0.0703)	3.5210 *** (0.1039)	3.1317 *** (0.0776)
N	292	223	69
R ²	0.7263	0.6683	0.7709
Adjusted R ²	0.7254	0.6668	0.7674
F Test	769.726	445.336	225.385
Prob F Test	0.000 ***	0.000 ***	0.000 ***
Residual Unit Root Test (t stat)	-2.683	-2.048	-3.267
Residual Unit Root Test (prob)	0.078 *	0.266	0.021 **
Johansen Cointegration Test	0 coint **	0 coint **	0 coint **

* p < 0.10, ** p < 0.05, *** p < 0.01

The results allow us to see that there is a positive and significant relationship, at least for the whole time period and the Ben Bernanke's period, because the residuals were white noise, it

is possible that a long term relationship³¹ can exist. However, because the fact that the Johansen test for cointegration failed to find any, the econometric results should be considered cautiously. But the fact that my intention is to understand if there is a relationship between these two variables, not the prediction of its behavior, I used the econometric results.

Those results indicate that, holding other things constant, the behavior of the Federal Funds interest rate can explain part of the behavior of the US Treasury interest rate. However, such influence was different for the three periods reported in this table. When considering the whole period of analysis, the results can be interpreted as, for any 100 basis points change in the Fed funds interest rate implied a change in the same direction in the long term interest rate between 59 and 62 basis points. While considering the Alan Greenspan's period as chairman, the implied change on the long term interest rate was between 56 and 60 basis points. However, when the Ben Bernanke's period is considered, the effect on the long term interest rate is reduced to almost half of the effect for the whole period because a change of 100 basis points in the Fed funds rate produced only a change between 30 and 34 basis points in the long term interest rate.

The results also indicate that, holding other things constant, the Fed funds interest rate has a considerable explanatory power of the behavior of the long term interest rate. Given by the fact that, for the three periods, the adjusted R-square registered an average of 0.72.

The change on the incidence of the short term interest rate was associated to the phenomenon of the "conundrum of the interest rate" as mentioned earlier. But many of the authors that have studied such phenomenon indicate permanency of some of the main causes, implying that, since around the middle of the 2000's, there are different economic conditions that had caused the loss of incidence of the short term interest rate over the long term interest rate.

³¹ Such considerations also will apply for the next regressions, where the unit root test confirmed stationary residuals.

So, in order to check this claim, even with this single regression analysis, I made an empirical analysis considering three different periods: the earlier (the period before the interest rate conundrum from July 1987 to March 2003), the post (the period after the interest rate conundrum from July 2006 to December 2011), and the period of the interest rate conundrum (from April 2003 to June 2006). The results can be seen on the next table.

Dependent Variable: Interest Rate US Treasury 10 Year constant maturity			
Explanatory Variables	Pre Conundrum 1987 M07 to 2003 M03	Conundrum 2003 M04 to 2006 M06	Post Conundrum 2006 M07 to 2011 M12
Interest Rate Federal Funds FEDFU(2)	0.537155 *** (0.0223)	0.123898 *** (0.0352)	0.292407 *** (0.0179)
Constant	3.8480 *** (0.1365)	4.0106 *** (0.1103)	3.2364 *** (0.0718)
N	189	37	58
R ²	0.5975	0.3034	0.7737
Adjusted R ²	0.5954	0.2835	0.7696
F Test	277.638	15.245	191.447
Prob F Test	0.000 ***	0.000 ***	0.000 ***
Residual Unit Root Test (t stat)	-2.198	-3.242	-3.659
Residual Unit Root Test (prob)	0.208 *	0.026 **	0.008 ***
Johansen Cointegration Test	0 coint **	1 coint **	1 coint **
* p < 0.10, ** p < 0.05, *** p < 0.01			

The results indicate, in first instance, that there is a positive relationship between the interest rates in the conundrum and post conundrum periods of time³². The relationship in the

³² Both the white noise residuals and the Johansen cointegration test indicate that a long term relationship between those variables exists.

pre-conundrum period was also positive, but the significance of the results is threatened by the lack of long term relationship.

In second instance, there is a considerable difference on the incidence of the Fed funds rate to the long term interest rate, especially considering the conundrum period, where the incidence for each 100 basis points of change in the Fed Funds rates was only between 9 and 16 basis points on the long term interest rate. While for the post-conundrum period, the incidence was between 28 and 31 basis points; and finally, during the pre-conundrum period it was between 59 and 62 basis points.

Finally, the results also indicate that, holding other things constant, the Fed funds interest rate lost explanatory power on the behavior of the long term interest rate during the conundrum period of time. The adjusted R-square of each regression was reduced by almost half.

The results indicate that there is a marked difference on the incidence of the short term interest rate over the long term interest rate when different periods of time are considered. So, that implies that there are differences on the economic conditions that the US economy is facing in these different time periods. One of the main factors that are considered that have been having an important impact on the long term interest rate is the purchases of the US Treasury bonds. Because, those have been having a sustained increase of the net purchases of the US Treasury and other Government Bond and Notes (those grow up to around US\$6.4 billion since 1987 up to 2011; of those, US\$4.3 billion were observed on 2003 to 2011 period, around 67%, according with data from the US Treasury Department), it is considered relatively normal to have such a loss of the incidence of the short term interest rate. Meaning that it could be important for future researches to go deep into the incidence of those purchases on this incidence, leaving this as

another suggestion for future research given that, by its importance, it could be subject of a bigger and more advanced research, which is out of the scope of this study.

In order to see if the problem of lack of stationary in the variables is solved, and to check if those obtained results are maintained, I did calculations using quarterly data (averaging the monthly data). The results showed change in the incidence of the Fed funds rate on the long term interest rate and did not solve the problems of lack of long term relationship. As can be seen in the next table, where five periods of time are presented, because the conundrum period was short making it difficult to calculate a statistically significant model.

Explanatory Variables	Whole Period 1987 Q3 to 2011 Q4	Greenspan's Administration 1987 Q3 to 2005 Q4	Bernanke's Administration 2006 Q1 to 2011 Q4	Pre Conundrum 1987 Q3 to 2003 Q2	Conundrum and post 2003 Q2 to 2011 Q4
Interest Rate Federal Funds FEDFU(1)	0.601837 *** (0.0245)	0.579194 *** (0.0305)	0.315928 ** (0.0265)	0.546939 *** (0.0362)	0.288869 ** (0.0274)
Constant	3.237025 *** (0.1137)	3.536824 *** (0.1786)	3.179752 *** (0.1100)	3.8022 *** (0.2240)	3.3414 *** (0.1106)
N	97	74	23	64	34
R ²	0.7312	0.6741	0.8353	0.6315	0.7040
Adjusted R ²	0.7283	0.6695	0.8274	0.6256	0.6948
F Test	258.360	148.909	106.478	106.268	76.118
Prob F Test	0.000 ***	0.000 ***	0.000 ***	0.000 ***	0.000 ***
Residual Unit Root Test (t stat)	-2.795	-1.373	-2.182	-2.421	-1.501
Residual Unit Root Test (prob)	0.063 *	0.591	0.218	0.140	0.520
Johansen Cointegration Test	1 coint **	1 coint **	0 coint **	0 coint **	0 coint **

* p < 0.10, ** p < 0.05, *** p < 0.01

The results show that the lack of stationarity variables problem wasn't solved, it even worsened because only one period registered white noise residuals and only two periods indicate cointegration of the variables according to the Johansen cointegration test. But the incidence of the Fed funds interest rate on the long term interest rate is almost the same to the monthly data.

Implying that, the results, even the statistical limitations, show that there exist other factors (besides of the Fed funds interest rate) that are significant in explaining the long term interest rate, especially in the period after 2003.

The results indicate that there are other factors that are more important on the determination of the long term interest rate since 2003, but especially during the conundrum period. For that reason, it is important to acknowledge that more research should be made on this issue.

In order to solve the stationary problem of the variables on levels, I also made calculations on differences for the monthly data (where all variables were stationary). The results (as expected) registered considerable reductions in the explanatory power of the models. Finally, the results indicate that the differenced model wasn't adequate to explain the behavior of the long term interest rate because, for some periods, the results weren't statistically significant. This can be seen in the next table.

Dependent Variable: Difference Interest Rate US Treasury 10 Year constant maturity						
Explanatory Variables	Whole Period	Greenspan's Administration	Bernanke's Administration	Pre Conundrum	Conundrum	Post Conundrum
	1987 M07 to 2011 M12	1987 M07 to 2006 M01	2006 M02 to 2011 M12	1987 M07 to 2003 M03	2003 M04 to 2006 M06	2006 M07 to 2011 M12
Interest Rate Federal Funds						
DFEDFU	0.26643 *** (0.0755)	0.27233 *** (0.0828)	0.24281 *** (0.1710)	0.30566 *** (0.0872)	-0.50434 (0.4781)	0.23065 (0.1724)
Constant	-0.01616 (0.0137)	-0.01534 (0.0156)	-0.01993 (0.0288)	-0.01602 (0.0170)	0.09247 (0.0723)	-0.00900 (0.0318)
N	293	222	71	188	37	58
R ²	0.0501	0.0546	0.0351	0.0741	0.0573	0.0351
Adjusted R ²	0.0469	0.0503	0.0211	0.0692	0.0304	0.0178
F Test	15.363	12.705	2.512	14.896	2.129	2.034
Prob F Test	0.000 ***	0.000 ***	0.118 ***	0.000 ***	0.153	0.159
Residual Unit Root Test (t stat)	-12.710	-11.227	-6.674	-10.322	-5.356	-6.510
Residual Unit Root Test (prob)	0.000 ***	0.000 ***	0.000 ***	0.000 ***	0.000 ***	0.000 ***
* p < 0.10, ** p < 0.05, *** p < 0.01						

3- Findings

In general terms, holding other things constant, the behavior of the Federal Funds interest rate used to be able to reasonably explain the behavior of the US Treasury 10 year bonds interest rate. However, such explanatory power began to be reduced for the 2003-2011 period, especially for the 2003-2006 period (conundrum of the interest rate), where the capability of explanation reduced considerably. As expressed earlier, that indicates that there are other factors that began to have important explanatory power for the behavior of the long term interest rate. But because that is outside of the main scope study, it is saved for future research.

With respect to the main purposes of this study, it was found that the US Monetary Policy can have some influence on the behavior of the long term interest rate by the relationship between the short and long term interest rate. When considering the short term interest rate as the main indicator of such policy (as the Federal Funds interest rate) and one of the main

benchmarks of the international finances (as the US Treasury 10 year bonds) US Monetary Policy can have some influence on the capital flows to the emerging and developing countries. However, the results also show that such determination has been reducing along the time.

Chapter VI: Empirical Analysis of the “Pull and Push” Factor for the Latin America Countries.

1- Data Description and Sources of Information

As stated on chapter IV, this model includes a dependent variable and a set of “push and pull” factors as independent variables.

a. Dependent Variable: For this model, it refers to the capital flows to the considered countries of Latin America. Given the definition of capital flows acknowledged on chapter III. I used three different types of capital flows: “All kinds”, “Firm Related”, and “Debt.” Each of those capital flows refers basically to the net amount of financial resources that were moved from one country to another (in this case, it will refer to capital that flew to any of the Latin America Countries considered). Also, it is important to mention that there weren’t any price adjustments, such as exchange rate revaluation, and others, as the balance of payments compilations states considered during their construction. The capital flows were used in levels (billion of US Dollars) and also in their relationship against the current GDP. However, to avoid possible endogeneity problem, the level of capital flows of the year (t) was related to the current GDP of the year (t-1).

The behavior of the different measures considered can be seen on the Chapter III where the capital flows to the LAC were analyzed.

b. Independent Variables: There are two sets of variables, those that are considered as “push factors,” a set of three indicators, one variable of international interest rate, other as measurement of global risk aversions; finally, other related to an indicator of global liquidity.

The other set, refers to the “pull factors,” which is a vector of the data from the 20 countries considered as Latin America Countries included in this study.

i. Push factors: As stated on Chapter III, refers to those factors that occur in other countries (especially on the advanced ones) that promote capital flows toward other countries (especially to the emerging and developing countries, in this particular case to the LAC).

- **International Interest Rate:** The return of an investment is a meaningful aspect of the capital flows. So, an approximation of an international interest rate was compiled, a long term interest rate, first considering only the interest rate of the US Treasury Securities to 10 Years constant maturity, and second when the interest rate of a set of countries considered as Advanced Countries (composed by the US, the European Union, Japan, and The United Kingdom) was calculated. Also, for those countries the Government Securities or Bonds to 10 Years constant maturity was considered; the indicator was constructed weighting the interest rates by its current GDP valuated on US Dollars³³. Finally, I used a third measure, considering the Effective Federal Funds interest rate to see if this monetary policy indicator has some direct explanatory power in the capital flows determination.

For the US interest rates, the data were obtained from the Board of Governors of the Reserve System Website on a monthly basis. Whereas the other countries’ interest rate, were obtained from the IMF Website, also on a monthly basis. With this data, I made annual average of the data. The indicators for the long term interest rate are called “AC10Y” for the composed interest rate of the AC; while the interest for the US is called “UST10Y.” The short term interest rate is called “FEDFU.”

³³ Because there was no data on current GDP for the European Union from the years 1985 to 1995, I used a proxy as the data on current GDP variation for Germany, France, and Italy to fulfill such information. This applies to all other indicators generated as Advanced Countries.

A graph that depicts the behavior of these indicators can be seen on the annexed graph 6.1 A. Indeed, the three measures show that there is a general decreasing tendency on the considered time span. However, the general reduction on the Federal Funds interest rate is greater than the others.

- **Risk Aversion:** Even though there are many ways to measure the risk aversion, one of the main aspects of this is related to the volatility, which could be measured using historical data, but also considering an indirect way to measure it is “derived from option prices”. This kind of volatility represents the estimates and assumptions of market participants involved in a trade, on the basis of a given option price (STOXX, 2011, p. 18). In US the Chicago Board Options Exchange (CBOE) Volatility Index® VIX® “became the premier benchmark for U.S. stock market volatility³⁴” (CBOE, 2009, p.2). It has been used as proxy of the risk aversion, not only by its technical characteristics, but also by its availability for a large time span (there is information since 1986 performing an adaptation between the old and new methodology). The information was downloaded from the CBOE Website, the monthly data from the old and new methodologies. I adapted both methodologies by applying the variation of the old methodology to estimate the level of the new methodology for the years 1986-1990. The data was obtained on monthly basis and it was calculated after as annual average. The indicator is called “RAVIX”.

Another measurement of the risk aversion generally used is the volatility index calculated by STOXX limited, an European based index specialist that uses the Eurex (one of the world's leading derivatives exchanges together with the New York Stock Exchange, and the

³⁴ “VIX is a volatility index comprised of options rather than stocks, with the price of each option reflecting the market’s expectation of future volatility” (CBOE, 2009, p.4). The VIX is constructed considering the Standard & Poor’s 500 Index. As stated on the CBOE Website “The VIX is quoted in percentage points and translates, roughly, to the expected movement in the S&P 500 index over the next 30-day period, which is then annualized. For example, if the VIX is 15, this represents an expected annualized change of 15% over the next 30 days; thus one can infer that the index option markets expect the S&P 500 to move up or down $15\%/12 = 4.33\%$ over the next 30-day period. That is, index options are priced with the assumption of a 68% likelihood (one standard deviation) that the magnitude of the S&P 500’s 30-day return will be less than 4.33% (up or down)”.

CBOE), and the EURO STOXX 50 Volatility Index (VSTOXX)³⁵. It is based on the options of the Euro STOXX 50, which covers the entire Eurozone region (STOXX, 2012). Basically, it refers to the same risk measurement that the VIX, but this is considering the data of the European market. I downloaded the monthly data from the STOXX Website, and made calculations of the annual average. The indicator is called “RAVSTOXX”.

The data indicates that there are periods where the risk registered reductions (1987-1995, 2002-2006, and 2009-2010³⁶) and it's expected that these generate capital flows to the emerging and developing countries. On the contrary, there were also two periods of increasing tendency on the risk (1995-2002 and 2006-2008) where the expectation was to reduce the capital flows. This behavior can be seen on the annexed graph 6.2 A.

- **Global Liquidity:** There are different ways to measure global liquidity; as many of studies show it, among others are Psalida and Sun (2011), Domanski, Fender and McGuire (2011), and IMF (2010). However of its simplicity and even when some authors argue that this proxy completely reflects the availability of low cost funding. I will use a proxy for global liquidity, the growth of the monetary stock variable M2, because it is directly related to the monetary policy pursued in the Advanced Countries, and that helps me to the main subject of this study³⁷. I compiled a M2 growth weighted indicator for the advanced countries (US, EU, Japan, and United Kingdom). Through getting the M2 indicator in domestic currency, calculating the growth of this variable, then weighting those growths with the current GDP of each year (valuated in US Dollars). The M2 and exchange rate information was obtained basically from the Central Bank of each country, but also compared and, in some cases, complemented (for the

³⁵ This volatility index “does not measure implied volatilities of at-the-money EURO STOXX 50 options, but the implied variance across all options of a given time to expire” (STOXX, 2011 p.18).

³⁶ The reduction on the perceived risk on the years 2009-2010 is consequence of the high levels of riskiness registered between 2006 and 2008.

³⁷ However of that, it is another research opportunity to use other proxies for global liquidity less directly related to the monetary policy in the advanced countries.

initial years) with data of the IMF. The GDP was obtained from the Statistical Institutions of each country. The indicator generated is called “GLMSGRAC,” but this indicator was also generated but only considering the US, and that is called “GLMSGRUS”.

As expected, given the economic growth and performance of these economies, this variable shows periods of increasing and decreasing tendency along the time for both measures. Indeed, the AC measurement registered from the end of the 80’s up to the middle of the 90’s; from 2002 to 2003; and also, from 2009 to 2010, a tendency to reduction, reflecting for that a contractionary monetary policy. Meanwhile, from the middle of the 90’s up to 2001 and from 2003 to 2008, an increasing tendency was registered, which reflects an expansionary monetary policy in the group of advanced countries. When the US data alone was considered, the tendency was pretty similar, but the timing registered some differences. Accordingly, the data shows contractionary US monetary policy for the periods (1987 to 1993), (2001 to 2005), and for 2010. Whereas, the periods 1993 to 2001 and 2005 to 2010, were when the data showed an expansionary US monetary policy. This behavior can be seen on the annexed graph 6.3 A.

ii. Pull factors: As acknowledged on Chapter III, these are such ones that reflect good conditions to attract capital flows. The first set is those factors that are directly related to the return of those capital flows. While the other refers more to the certainty of the investment that those countries offer, meaning that I tried to measure the risk of invest on those countries. Finally, a specific factor for the LAC such as the privatizations as dummy variable is also included.

On those related to improved returns are:

- **Domestic Real Interest Rate:** One of the most accepted definitions of real interest rate refers to the nominal interest rate minus a prices indicator, normally that related to the Consumer Price Index (CPI). As a result, I elaborated the variable compiling information on nominal interest rate on domestic denominated instruments for deposits between one to six months on each individual country (there is no homogeneous information regarding to the term) and the CPI information. This indicator is called “RIRNCI”.

But because that indicator doesn't consider the exchange rate variation, it is possible to assume a perfect forecast from the economic agents on the exchange rate variation. Then, considering this with the interest rate on domestic denominated instruments and the CPI, one could give a comparable internationally interest rate, this indicator is called “RIRNCIS”.

Most of the countries have information regarding the interest rate on foreign denominated instruments³⁸, and the term on deposit from to one to six months. I compiled this information to construct an indicator together with the CPI; this is called “RIRFDI”.

All the data of interest rates and exchange rate were compiled from the Central Bank of each country, complemented with data from the IMF and from the WB data Base. The data of CPI was compiled with information from the Statistical Institutions of each country. The information of real interest rate of these three indicators can be seen on the annexed graph 6.4A. It is important to mention that only information since 1992 is located on the graph because some countries were having hyperinflation during the earlier periods. The most important feature is that only the “RIRNCI” is positive for almost all the time, while the other that were taken into consideration had an exchange rate variation that registered negative and positive values,

³⁸ There was no information available at all for Brazil, Colombia, and Venezuela. While, some other countries had no information available for the whole considered period. In those cases, the interest rate was constructed assuming perfect forecast on the exchange rate variation in order to make it compatible with the average of other countries information.

meaning that the exchange rate variation has relevance on the returns. Lastly, the indicator which considers the foreign denominated instruments was negative for all of the considered period.

- **Domestic/Foreign Real GDP:** This is another way to see returns. If the investments are going to higher real growth countries, the returns could be greater, especially because it is perceived that in the latest times, the advanced countries began to reflect lower real GDP growth compared with many emerging and with some of the developing countries also.

So I compiled data on the constant GDP on domestic currency for each LAC, the set of countries considered as Advanced (US, United Kingdom, Japan, and the European Union³⁹) as a group and also the US alone. First, I accumulated the economic growth since 1985, and then I looked at the difference between the information from the LAC and the others. With this information an indicator called “GDPdUS” that compares the Latin American Countries in respect to the US was constructed along with another indicator called “GDPdAC” which compares the data from these countries in respect to the weighted average (considering the current GDP valued on US Dollars) of the advanced countries.

The information was obtained from the Statistical Institutions of each country, the Bureau of Economic Analysis (BEA), the Statistical Office of the European Union (EUROSTAT), the IMF, and the WB. The information can be seen in two different graphs. The annexed 6.5A depicts the behavior of the accumulated constant GDP growth, where it can be observed how the US has the higher accumulated GDP up to 2007 when the LAC took the lead by the economic crisis that affected the US. Also, it can be seen how the US growth is higher than the AC, especially because of the lack of good performance on Japan and some of the

³⁹ Because there is no data on constant GDP for the European Union from the years 1985 to 1995, I used the data on constant GDP for Germany, France, and Italy as a proxy.

European countries. But in order to have a better point of analysis, when considering the difference (annexed graph 6.6A), it is possible appreciate that the LAC countries began to be consistently positive since 2002 with respect to the AC. While with respect to the difference against the US, it began to be consistently positive up to the latest years when the crisis had affected the US.

- **Lagged Domestic/Foreign Stock Market Indicator:** Another similar way to observe economic performance could be comparing the Stock Market Index of the LAC to the Stock Market Index of the AC and US for the earlier year. This will reflect the perception of the market regarding to the economy because those indexes are constructed using the performance of the most influential companies in each country.

Then, I compiled data on the Stock Market Indicator for some of the LAC⁴⁰ and also for the US and other advanced countries, including Germany, France, and Italy⁴¹ as proxy for the EU. Each Indicator was annualized to 2005=100 for the 1985-2011 period and because the entire country indicators were annualized to the same year base, it was possible to make a relationship. With this information, I constructed an indicator called “SMdAC” that compares the difference between the LAC with respect of the AC, and the other called “SMdUS” that compares the data from the LAC with respect of the weighted average (where the current GDP is valued on US Dollars) of the AC.

The information was obtained basically from the IMF and the WB. However, I compiled data from the main Stock Market of some countries like Mexico, Brazil, Chile,

⁴⁰ There was consistent information only for Brazil, Mexico, Argentina, Colombia, Venezuela, Chile, Peru, and Trinidad & Tobago. That represents around 92% of the current GDP of the LAC.

⁴¹ Germany, France and Italy represent around 66% of the current GDP of the European Union (considering the period 2002-2011).

Colombia, and Peru to compare and evaluate the data obtained from the IMF, and there were no significant differences. Additionally, I used data of the Dow Jones Index for the US, obtained on the Yahoo Finance Website. When comparing the data in respect to that of the IMF there weren't many differences. As it can be seen on the annexed graph 6.7A, the difference between the LAC and the AC and the US on indexes were positive since 2000, meaning that the LAC stock market had higher return than the other countries, being a way to attract capital flows.

On the other, the riskiness of the investment, are:

- **International Country Risk Guide (ICGR) by The PRS Group:** This indicator analyses a set of variables that can assess the riskiness of a country. According to The PRS Group Website⁴², “The International Country Risk Guide (ICRG) rating comprises 22 variables in three subcategories of risk: political, financial, and economic. The composite scores, ranging from zero to 100, are then broken into categories from Very Low Risk (80 to 100 points) to Very High Risk (zero to 49.9 points).” “The ICGR staff collects political information and financial and economic data, converting these into risk points ...” (The PRS Group, 2012). Because the measure is used for so many private and international institutions, the PRS Group, affirms that “The ICGR model can determine how financial, economic, and political risk might affect their business and investments now and in the future.”

This indicator is a reasonable way to measure country riskiness because it considers different points of view together and because there is a reliable source of information that has been calculated since 1980. The data for each of the LAC and for the US was obtained

⁴² www.prsgroup.com In this Website a complete detail of the methodology on the PRS Group International Country Risk Guide Methodology can be found.

from the Nexis Lexis® Academic⁴³ through the Library of the Claremont Colleges. The Composite Indicator for each month was selected for the period January 1989 to December 2011. After that, I made an average index for each year with the monthly information. With this information, the indicator called “ICRG” was constructed which contains data for each of the LAC considered; and also was constructed other called “ICRGdUS” that compares the data from the LAC to the data of the US.

The behavior of this indicator can be seen in annexed graph 6.8A. One can see that when weighted by its GDP, Latin America Countries have been reducing the perceived riskiness along the time; in contrast, the indicator reflects an increase on the perceived riskiness of the US.

- **Sovereign Credit Rating Indicator:** As an alternative indicator of riskiness, I proposed the use of the Sovereign Ratings. According to the main rating agencies in the world⁴⁴ “the credit rating is an opinion on the future ability and willingness of the debtor to service their debt obligations on time.” Nevertheless, there are some differences depending on the fact of what is exactly assessed, whereas Fitch and S&P evaluate an obligor’s overall capacity to meet its financial obligation, and hence, it is best through of as an estimate of probability of default, Moody’s assessment incorporates some judgment of recovery in the event of loss (Ashcraft & Schuerman, 2008). Furthermore, when it is a sovereign credit rating, “it indicates the capacity and willingness of rated governments to repay commercial debt obligations in full and on time” (Bhatia, 2002 pag. 4). That is made through an analysis of the economic data obtained through surveys to the private and public sector, but with an analysis of the consistency

⁴³ LexisNexis® Academic provides access to full-text news, business, and legal publications using a variety of flexible search options.

⁴⁴ Three Credit Rating Agencies dominate the global financial market: Standard & Poor’s (S&P), Moody’s Investors Service, and Fitch. The share of the market is, according to Rom (2009), S&P dominates 40%, Moody’s 39%, Fitch 16%, and the rest of other firms 5%.

of the main economic and other policies, in order to assess the economic path of the country, as well.

This indicator can be used as an alternative measure of a country riskiness considering a specialized point of view⁴⁵. The data for different years and each of the LAC was obtained from the Sovereign Default and Recovery Rates publications by Moody's⁴⁶. Each data was compiled in the month of change or in the beginning of the rating and after each rating was converted from letter to numeric scale⁴⁷; nonetheless, it is worth to mention that each country began to be assessed in different times, so the whole set of countries includes only the period 1998-2011. There is an incomplete set for the years 1987-1997.

With this information, I constructed an indicator called "SOVMOO" that contains the data for each of the LAC considered, as presented on the annexed graph 6.9A. It also reflects a reduction on the riskiness perception of the LAC.

Finally, as a pull factor, I proposed a variable that has been important for the LAC.

- **Privatizations (Dummy):** This dummy variable reflects the importance of the privatizations for the LAC, especially during the period 1988-1999, where, according to my calculations using data from the World Bank⁴⁸ the LAC countries made around 56% of the total transactions of privatizations around the World, as stated in Chapter II. While in the period 2000-2008 they made only around 8% of world total transactions for privatizations, given the

⁴⁵ It is important to mention that lack of precision on the measurement of the risk of many of the subprime instruments by the credit rating agencies was one of the main factors that triggered the financial crisis of the 2007-2010 is generally accepted. As stated among others by Greenspan (2010), Krugman (2010), Willett (2009), and Hunt (2009).

⁴⁶ Even though Fitch Rating has information, most of the LAC began in the 2000's and for that reason relied on Moody's data only.

⁴⁷ Being 1 the highest credit quality and 21 very high default risk, as proposed in Bhatia, 2002.

⁴⁸ The World Bank Data Base on Privatizations.

limitation on the stock of State -owned firms, and for the increasing importance of China in this context⁴⁹. This is accounted as a Dummy variable because the data base doesn't allow a clear separation of the data that proceeded from foreigner investors. Even for the countries it is difficult to identify this information because many of those privatizations were bought by residents only and because some of those were bought using foreign financing.

So this indicator will take the value of 1 if the country made privatization during the considered year, 0 otherwise. I downloaded the hat data from The World Bank and select the considered countries; the information refers to the year and the sector of the privatizations.

The behavior of the weighted average of privatizations is presented on the annexed graph 6.10A. Here, it is possible to show the importance of those transactions for the LAC, especially in some years of the 90's.

2- Data Analysis

Given the utilization of different countries, it was considered to use data panel analysis to see the capability of the “push and pull” factors on explaining capital flows to Latin America Counties. I made the analysis using the annual data for the whole period 1987-2010 but I also made a separated analysis for the periods 1991-2000 and 2000-2010, in order to check the difference on the analysis given the changing economic conditions lately. The basic idea is to check the fundamental factors that have been producing, or not, capital flows to those countries. Afterwards, I tried to unravel a long term relationship. It is possible to open a door to future research, focusing on short period of time analysis, which would help us to understand waves on the capital flows and their effects in those countries and other economic analysis.

⁴⁹ China in the Period 1988-1999 just made around 6% of the world total transactions; whereas in the 2000-2008 period this country made around 38% of the total privatization transactions.

a. **Econometric Test Results**

To investigate the effect of the US Monetary Policy on capital flows to LAC, I report the results of the performed analysis in two forms. The first one gives general results using all the factors (by the different proxies) and also all the country groups are summarized. It explains how the different combinations fit with the expected results of the model (without analyzing specific variable estimator results, just the statistical and economic significance of those variables in the model). The second one analyzes specific results of the model (variable estimators) that fit the objective of the study selected from the whole set of results. *i.e.*, I chose from the whole set of regressions, those specific results where the most of the proxy variables were significant and with the expected economic sign at the same time in any single data panel regression.

i. General Analysis: The results can give us a general idea of the main factors that are affecting the capital flows, because the “push and pull” model for each country groups, all capital flows types, and the three periods of time were considered.

Analyzing the “All Kinds” type of capital flows (the summaries of econometric test are presented on annexed tables 6.1 Ai to 6.1Aiii⁵⁰), it is possible to affirm that the “pull factors” have more explanatory power than the “push factors” considering capital flows in levels and in percentage of the GDP because those “pull factors” were more frequently significant⁵¹ in the model. Of the “push factors” the measurement of Global Liquidity was the most important,

⁵⁰ Those tables show the compilation of each individual regression considering if the variable was significant and with the economic expected sign compared with the total regressions. So, the higher the number on the variable, the more times it was statistically and economically significant explaining the capital flows. It is also important to mention that there were performed unit-root test in order to check if the variables were stationary. All the variables were stationary using Levin-Lin-Chu and Harris-Tzavalis unit root tests.

⁵¹ Significant will imply (in this context) that the results of the proxy variable were statistically and economically significant (with the expected economic sign).

followed by the international interest rate (especially on levels), while the other (risk aversion) didn't appear to have explanatory power. In this particular case, it is important to mention that there is an almost equal importance of the international interest rate between the indicators constructed for the Advanced Countries and considering US alone. However, the global liquidity indicator was significant only when the AC were considered. On the "pull factors" variables, it was the privatization dummy that was the most frequent, followed by the measure of country riskiness (International Country Risk Guide), and the return measures. Also there was a small difference in the analysis when considering levels and percentages of GDP, where the last one has more significant variables, but it had the same general tendency. The only notable differences are the measures of return (GDP and stock market relationship) and country riskiness which have more significance when considering the capital flows as percentage of GDP.

When comparing the three different periods of time, it is found that in the period 1991-2000 the "push factors" were not significant at all, while in the "pull factors," the privatization dummy was significant most of the time. The economic return variables (especially the ones related to interest rate) were sometimes significant but with less explanatory power. That general relationship, changed for the 2000-2010 period when the international interest rate (push) began to be important significant. Of the other factors (pull), the privatization was less important (because, as stated, most of privatizations were before 2000) the measure of country's riskiness was more important along with some of the other measures of returns (GDP and Stock Market relationship).

Another way to summarize this is by considering the country groups⁵² for the whole period (1987-2010). The set Big South America (BSAC) has more significant variables, this is followed very close by the whole set of LAC. Next there was the CAC which registered around two thirds of the number of significant from BSAC. The other groups registered around one third of that the BSAC registered. When summarizing the tendency according to the factors, as mentioned earlier, the results showed that the global liquidity was important for the LAC and CAC groups, while the international interest rate was important for the BSAC and CAC groups. For the pull factors, the most important factor (privatizations) has similar importance among the groups (with the exception of CARC where it wasn't important at all), but the country riskiness had more importance for BSAC, LAC, and CAC than for the others.

In the performed analysis for “Debt” type of capital flows (annexed tables 6.2 *Ai* to 6.2*iii*), again the main conclusion is the preeminence of the “pull” over the “push” factors considering capital flows both in levels and in percentage of the GDP. However, in this analysis the “push factors,” were sometimes significant but the international interest rate was the most frequent. Of the “pull factors” variables, the privatization dummy was again highly frequent (that is due to the fact that many of those sells were to domestic private sectors which used international financing, mainly through private debt), followed by the measure of country riskiness, while the return measures were less significant. When levels and percentages of GDP are considered, the international interest rate was equally significant in both, while the global liquidity and risk aversion were more significant using percentage of GDP. The country riskiness was more significant when it was analyzed as percentage of GDP, while the privatization was more important when levels were used.

⁵² As defined on Chapter II, the country groups are: the whole set of Latin America Countries (LAC), the 3 main countries (M3LAC), the Big South America Countries (BSAC), the Central America Countries (CAC), the Small South America Countries (SSAC), and the Caribbean Countries (CARC).

From the time periods point of view, it results again that for the 1991-2000 period the “push” factors were not significant at all, while in the “pull” ones, the privatization dummy was the main indicator again. Contrary to the observed results earlier, the return indicator that includes the interest rate had some explanatory power in some cases and the country stock market relationship also had some significance. The 2000-2010 period registered on the “push factors” that the international interest rate and the risk aversion measure had significance as well. On the “pull factors,” the privatizations were again significant but with less frequency than the earlier period. The country riskiness was significant in both levels and as percentage of GDP. The return indicator was significant, specially, to the stock market relationship.

When country groups are considered for the whole period, the set of BSAC was the one that registered the most significant variables. The whole set of LAC was again the second most noteworthy, registering around eighty percent of the number of significant variables registered by BSAC. The other groups registered around half of the significant variable registered by the BSAC. According to the factors on the “push” sides the international interest rate was important for BSAC; while the risk aversion was significant only for the LAC and CAC; finally, the global liquidity was important again basically for CAC and LAC. While considering the “pull” factors, the privatizations registered almost the same magnitude among the groups, and the country riskiness had more importance again for LAC, CAC, and also for the BSAC. On the return indicators, the stock market relationship was important almost equally for the LAC, the BSAC and the M3LAC.

Finally, when summarizing the “Firm related” type of capital flows (annexed tables 6.3Ai to 6.3 Aiii), the most important result is the superiority of “pull” over “push” factors

once more. However, in this kind of capital flows there is a better performance when it is used as percentage of the GDP instead of levels. On the analysis of “push factors,” again two variables were more frequently significant and the indicator of international interest rate was the most frequent along with the measurement of global liquidity (especially when it is used as percentage of GDP) which was also significant. Both results were mostly found mostly when the measurements used the composite Advanced Countries not the US alone.

On the “pull factors,” the privatization dummy was again the most significant, following again was the measure of country riskiness (but only when percentage of GDP was used), then the return measures. The GDP relationship was the most important among the other measurements.

When analyzing time periods, the “push” factors for the 19991-2000 period again were less significant (the international interest rate and global liquidity were significant few times). With the “pull” factors, the privatization dummy was the only one frequently significant, with a few exceptions for the interest rate and country riskiness. The 2000-2010 period accounted for the “push factors” significance only on the international interest rate indicator (only on levels) but global liquidity and risk aversion also registered some significance. For “pull” factors, the return variable of GDP relationship was the most significant; followed by the privatizations measure (but it not as important than in the earlier period and especially when it was considered as percentage of GDP); then, the country riskiness on both measurement levels and as percentage of GDP.

When the analysis on country groups is performed for the whole period, the LAC has the greater number of significant variables, followed by the CAC, which registered around

eighty percent of those of the LAC. The other groups registered around half of the number of significant variables registered by LAC. According to the factors, the “push” factors were the global liquidity which was important for CAC and LAC. The measurement of the international interest rate, was again more significant for CAC than LAC. The M3LAC also registered significance. On the “pull factors,” the privatizations accounted for almost the same amount among the groups, with the exception of CAC, where there wasn’t any significance, when percentage of GDP was used. For the return indicators, the GDP relationship had almost the same importance for CAC, LAC, and M3LAC. Finally, the country riskiness had more importance for LAC, then for the BSAC, CAC, and M3LAC.

In general terms, it is possible to affirm that there is a difference on some of the main factors that have explanatory power this can help us to understand the determinants of the different types of capital flows. But, also, there exists an important variation when different time periods are considered, that is relatively normal because there have been so many technological improvements and changes on the economic conditions of the countries that have been reflected in changes on the international financial markets. Additionally, there exists a difference among the LAC that reflected the differences in results when considering those in small and more homogeneous country groups. Finally, it is important to mention that when the US Federal Funds interest rate was used as the proxy for international interest rates, it wasn’t significant to the model.

ii. Specific Analysis: As mentioned earlier, looking for those specific models where the most of the proxy variables were significant and with the expected economic sign at the same time and in a single regression, normally was obtained using the whole set of countries (LAC). That could be interpreted as signal that the data panel analysis could be adequate enough to determine the “push and pull factors” model. Additionally, to the use of the LAC, the specific models selected were those using capital flows as percentage of GDP⁵³. So, the specific analysis was performed using the whole set of countries and the capital flows as percentage of GDP, leaving the other country groups arrangements for future and specific research opportunities. It is important to mention that specific analyses will help us to evaluate the paper of the US Monetary policy alone or as a group together with the other countries considered as Advanced Countries.

It is important to remember that I tried different measures for the return in the countries, as three forms of domestic real interest rate, GDP, and stock market relationship. However, any of the test considering domestic interest rate was significant or made the other variables significant for any of the three types of capital flows, so I decided not present those on the results. That could be as a result, because of the lack of homogenization on the compiled variable, but it could also be because of the excessive volatility on this variable for some countries, mostly in the 80's and 90's. So there will be a need to do more future research in order to look for a more homogeneous variable of domestic country interest rate.

The other variable of return in the economy, stock market relationship, was individually many more times significant than the proxies for domestic real interest rates; however of that, when does happen, normally the “push factors” weren't significant or with the expected economic sign. For that

⁵³ Another advantage of using capital flows as percentage of GDP is that it took out most of the volume bias.

reason, I'm not presenting those results. The reason for this could be the fact that there is only data for eight countries, and considering the lack of importance of these markets in some of the small countries, there is also need to look for alternative proxies for this measurement in future researches.

The first set of results will be considering the total capital flows to the LAC "All kinds" type of capital flows as dependent variable and the push factors considering the AC, and as an economic return, the GDP relationship. As it can be seen on the next table⁵⁴, the results indicate that the only significant "push" factor was the proxy of the global liquidity. The estimator calculated of this variable implies that an increase of 1% of the global liquidity (generated by the growth of the monetary stock in the AC), holding all other things constant, can generate capital flows to the LAC for an amount between 0.45 to 1.22 percentages of GDP. On the "pull" factors the GDP relationship and the privatizations were significant for the three models, while the country riskiness was only significant when the random-effects model was calculated. The significance of the models (considering the R-square) varied between the values of 0.44 to 0.48 of explanatory power.

⁵⁴ It is important to mention that I performed a test to check the viability of time-fixed-effects, and the results indicate that in most of the cases, time-fixed-effects were necessary. I also executed Hausman tests in order to decide if Fixed or Random effects were better to use, indicating that in many cases, it was better to use random effects. Then, I also made Breusch-Pagan Lagrange Multiplier test to see if Random effects were correct, being correct for most of the models. So, taking into consideration the mix of results of all of these performed tests, I present the results of the three models. Additionally, I would like to indicate that the analysis performed was elaborated considering robust standard errors correction for heteroskedasticity and also that tests to check multicollinearity of the variables were conducted, resulting that those weren't.

Table 6.1			
All Kinds of Capital Flows Considering Advanced Economies			
Dependent Variable: All Kinds of Capital Flows as Percentage of GDP			
Explanatory Variables	Fixed-Effects Model	Random-Effects Model	Pooled Model
AC10Y (Interest Rate Adv. Countries)	0.117049 (0.2974)	0.074497 (0.2838)	0.007218 (0.2499)
RAVIX (Risk Aversion)	-0.057646 (0.0698)	-0.056743 (0.0672)	-0.053826 (0.4924)
GLMSGRAC (Glob Liq Mon Stock AC)	0.832626 ** (0.3872)	0.838562 ** (0.3871)	0.855258 *** (0.2796)
RGGDAC (GDP diff against AC)	0.192632 ** (0.0779)	0.197687 ** (0.0862)	0.204800 ** (0.0888)
DUMPRALP (Dummy Privatizations)	0.787752 *** (0.0649)	0.081787 *** (0.0633)	0.884087 *** (0.0585)
ICRGPRS (Country Risk Guide)	0.104877 (0.0661)	0.089386 ** (0.0411)	0.065929 (0.0418)
Constant	-7.471167 (5.3418)	-6.363259 (4.0716)	-4.804021 (4.3777)
N	440	440	440
R ²	0.4393	0.4391	0.4844
F Test	44.36	256.04	46.93
Prob F Test	0.000 ***	0.000 ***	0.000 ***
* p < 0.10, ** p < 0.05, *** p < 0.01			

The same analysis was performed, but in the “push” factors considering the US alone, as it can be seen on the next table. The results indicate that again the only significant “push” factor was the proxy of the global liquidity. Analyzing the effects of calculated estimator for this variable implies that an increase of 1% of the global liquidity (generated by the growth of the monetary stock in the US), holding all other things constant, can generate capital flows to the LAC for an amount between 0.47 to 1.71 percentages of GDP. Meaning that there is more impact for the LAC countries when there are changes on the US monetary policy considered alone than when it is considered in the group of AC.

The three “pull” factors were significant for the three models, implying that those also play a significant role on the attraction of capital flows to those countries. Another important fact is that these models have also values of explanatory power between values of 0.44 to 0.48.

Dependent Variable: All Kinds of Capital Flows as Percentage of GDP			
Explanatory Variables	Fixed-Effects Model	Random-Effects Model	Pooled Model
UST10Y (Interest Rate US Treasury)	0.796658 (0.5450)	0.709146 (0.5187)	0.580678 (0.4131)
RAVIX (Risk Aversion)	-0.052060 (0.0734)	-0.053573 (0.0703)	-0.054580 (0.0487)
GLMSGRUS (Glob Liq Mon Stock US)	1.092842 * (0.6208)	1.119007 * (0.6148)	1.176201 *** (0.3787)
RGGDUS (GDP diff against US)	0.174609 ** (0.0773)	0.180700 ** (0.0854)	0.189738 ** (0.0845)
DUMPRALP (Dummy Privatizations)	0.806211 *** (0.0650)	0.834785 *** (0.0635)	0.898994 *** (0.0569)
ICRGPRSDUS (Country Risk Guide)	-0.140646 ** (0.0586)	-0.119677 *** (0.0358)	-0.087580 ** (0.0422)
Constant	-3.208301 (4.4893)	-3.200805 (4.2585)	-3.389337 (3.7426)
N	440	440	440
R ²	0.4439	0.4436	0.4884
F Test	60.80	323.00	50.46
Prob F Test	0.000 ***	0.000 ***	0.000 ***
* p < 0.10, ** p < 0.05, *** p < 0.01			

In those results prevail two main aspects; first, that there is significance on “push factors” because the global liquidity was significant, with higher impact on the capital flows when the US is considered alone. Second one was that with the US data, a little more explanatory power was registered to the “pull factors” because another of those variables became significant.

Besides of the results considering all types of capital flows, I also performed a separated analysis for some of the components of this, as shown on the general analysis, the results registered some differences. Then, checking the results from the capital flows related to “Debt” type of capital flows and considering the GDP relationship I got the results for the AC shown on the next table.

Dependent Variable: Debt Type of Capital Flows as Percentage of GDP			
Explanatory Variables	Fixed-Effects Model	Random-Effects Model	Pooled Model
AC10Y (Interest Rate Adv. Countries)	0.174118 (0.1950)	0.133201 (0.1660)	0.077247 (0.1367)
RAVIX (Risk Aversion)	-0.059091 ** (0.0275)	-0.060291 ** (0.0264)	-0.061522 ** (0.0246)
GLMSGRAC (Glob Liq Mon Stock AC)	0.406528 * (0.2123)	0.404064 * (0.2116)	0.402039 *** (0.1492)
RGGDAC (GDP diff against AC)	-0.039915 (0.0355)	-0.036685 (0.0338)	-0.033135 (0.0385)
DUMPRDEBTP (Dummy Privatizations)	1.026664 *** (0.0263)	1.035923 *** (0.0252)	1.057242 *** (0.0344)
ICRGPRS (Country Risk Guide)	0.081085 * (0.0419)	0.065163 ** (0.0301)	0.043782 ** (0.0208)
Constant	-6.440174 (4.1333)	-5.144415 (3.1778)	-3.420174 (2.4108)
N	440	440	440
R ²	0.6626	0.6624	0.6517
F Test	301.31	2114.34	171.49
Prob F Test	0.000 ***	0.000 ***	0.000 ***
* p < 0.10, ** p < 0.05, *** p < 0.01			

Those results show that there were two “push factors” variables significant on explaining this type of capital flows. Those were again the proxy for global liquidity, and also the measurement for risk aversion. Accordingly, analyzing the calculated estimators, implies that an increase of 1% of the global liquidity (generated by the growth of the monetary stock in the AC), holding all other things constant, can generate capital flows to the LAC for an amount between values of 0.19 to 0.72 percentages

of GDP. That impact is lower than the impact registered for “all kinds” type of capital flows. While the calculated estimator for the risk aversion proxy (holding all other things constant), indicates that for each reduction of one percentage points on the risk aversion can generate an increase on the “debt” type of capital flows to the LAC of around 0.04 and 0.09 percentages of GDP. With respect to the “pull factors,” those registered significant were the privatizations and the measure of country riskiness for the three considered model. There is an increase on the explanatory power of this model because the R-square was around 0.66, almost 0.22 higher than compared with “All kinds” of capital flows.

The results for this type of capital flows, but considering the US alone, can be seen on the next table:

Table 6.4			
Debt Capital Flows Considering only The United States			
Dependent Variable: Debt Type of Capital Flows as Percentage of GDP			
Explanatory Variables	Fixed Effects Model	Random Effects Model	Pooled Model
UST10Y (Interest Rate US Treasury)	0.478429 (0.3237)	0.416451 (0.2801)	0.330709 (0.2025)
RAVIX (Risk Aversion)	-0.055574 * (0.0286)	-0.057809 ** (0.0272)	-0.060405 ** (0.0246)
GLMSGRUS (Glob Liq Mon Stock US)	0.513762 * (0.2813)	0.520616 * (0.2815)	0.534087 *** (0.1863)
RGGDUS (GDP diff against US)	-0.029819 (0.0306)	-0.027551 (0.0311)	-0.025287 (0.0366)
DUMPRDEBTP (Dummy Privatizations)	1.036513 *** (0.0260)	1.044845 *** (0.0251)	1.064856 *** (0.0337)
ICRGPRSDUS (Country Risk Guide)	-0.077569 ** (0.0354)	-0.634544 ** (0.0259)	-0.043625 ** (0.0203)
Constant	-2.126106 (2.5056)	-1.980432 (2.3965)	-1.814862 (1.8722)
N	440	440	440
R ²	0.6624	0.6622	0.6518
F Test	355.38	2307.21	177.77
Prob F Test	0.000 ***	0.000 ***	0.000 ***
* p < 0.10, ** p < 0.05, *** p < 0.01			

The results indicate that the two significant “push” factors were again the proxy of the global liquidity and the risk aversion. Analyzing the effects of calculated estimators for these variables implies in first instance, that an increase of 1% of the global liquidity (generated by the growth of the monetary stock in the US), holding all other things constant, can generate capital flows to the LAC for an amount between 0.23 to 0.80 percentages of GDP. Again, the growth of the monetary stock of the US alone has a slightly bigger impact for the LAC than the registered growth for the compound of AC. In the second instance, the calculated estimators for the risk aversion proxy indicate more or less the same impact on the capital flows to LAC, mainly because the same variable measure is used in both regressions. In the “pull factors,” again the privatizations and country riskiness were both significant. Also the explanatory power (R-squared) of these models was around 0.66.

Considering both results together (AC and US alone), it is possible state that there is significance on the “push factors” because the global liquidity and risk aversion were significant. There was slightly higher impact on the capital flows when the US is considered alone (as a consequence mainly because of the higher impact of the global liquidity measure for the US alone has over the capital flows to LAC). Additionally, both models indicate that the “pull factors” that have significance are privatizations and country riskiness.

Analyzing the test results for the “Firm related” type of capital flows and considering the compound set of AC, the “push factors” with this type of capital flows was the only model where the international interest rate calculated for the AC was significant and with the expected economic sign⁵⁵. Analyzing the calculated estimator for this variable indicates that a decrease of 100 basis points in the international interest rate, holding other things constant, can generate an increase on the capital flows to the LAC by an amount between values of 0.18 to 0.33 percentages of GDP. Also, the results indicate that the three “pull factors” were significant, thus implying that the GDP relationship, the privatizations, and the country riskiness have been important to attract capital flows to those countries. The explanatory

⁵⁵ Also the risk aversion was statistically significant sometimes, but without the economic expected sign.

power measured by the R-squared of the regressions was around 0.42, pretty much the same as the “All kinds” type of capital flows. As it can be seen on the next table.

Table 6.5			
Firm Related Capital Flows Considering Advanced Economies			
Dependent Variable: Firm Related type of Capital Flows as Percentage of GDP			
Explanatory Variables	Fixed Effects Model	Random Effects Model	Pooled Model
AC10Y (Interest Rate Adv. Countries)	-0.331151 *** (0.1153)	-0.322788 *** (0.1076)	-0.285738 *** (0.1070)
RAVIX (Risk Aversion)	0.046542 (0.0227)	0.047481 (0.0227)	0.053599 (0.0208)
GLMSGRAC (Glob Liq Mon Stock AC)	0.057394 (0.1897)	0.057113 (0.1904)	0.049388 (0.1290)
RGGDAC (GDP diff against AC)	0.105625 ** (0.0452)	0.109387 ** (0.0447)	0.143321 *** (0.3045)
DUMPRFRP (Dummy Privatizations)	0.483674 *** (0.0757)	0.490085 *** (0.0737)	0.537096 *** (0.0461)
ICRGPRS (Country Risk Guide)	0.054595 * (0.0274)	0.057573 ** (0.0253)	0.068267 *** (0.0176)
Constant	-0.326135 (2.1016)	-0.603089 (1.8182)	-1.708279 (1.9228)
N	440	440	440
R ²	0.4220	0.4220	0.4088
F Test	28.39	183.15	92.09
Prob F Test	0.000 ***	0.000 ***	0.000 ***
* p < 0.10, ** p < 0.05, *** p < 0.01			

The other analysis, using the push factors with the US alone, indicates that there were no “push factors” significant because again some of the risk aversion measure was statistically significant, but without the expected economic sign. But the three “pull factors” were significant, meaning that there is a preeminence of the “pull” over the “push” factors when the US is considered alone. Also there is a slight reduction on the explanatory power of the model. This can be seen on the next table.

Table 6.6			
Firm Related Capital Flows Considering only The United States			
Dependent Variable: Firm Related Type of Capital Flows as Percentage of GDP			
Explanatory Variables	Fixed Effects Model	Random Effects Model	Pooled Model
UST10Y (Interest Rate US Treasury)	-0.072493 (0.1902)	-0.071064 (0.1778)	-0.076482 (0.1587)
RAVIX (Risk Aversion)	0.056376 (0.0253)	0.057003 (0.0254)	0.061345 (0.0211)
GLMSGRUS (Glob Liq Mon Stock US)	0.097243 (0.2582)	0.095117 (0.2602)	-0.076546 (0.1598)
RGGDUS (GDP diff against US)	0.076871 * (0.0434)	0.081515 * (0.0430)	0.118945 *** (0.0273)
DUMPRFRP (Dummy Privatizations)	0.522396 *** (0.0753)	0.528363 *** (0.0737)	0.571734 *** (0.0459)
ICRGPRSDUS (Country Risk Guide)	-0.082497 *** (0.0254)	-0.082794 *** (0.0238)	-0.081850 *** (0.0182)
Constant	2.758968 (1.8611)	2.739457 (1.9692)	2.658732 * (1.5223)
N	440	440	440
R ²	0.4081	0.4080	0.4005
F Test	30.38	196.67	81.41
Prob F Test	0.000 ***	0.000 ***	0.000 ***
* p < 0.10, ** p < 0.05, *** p < 0.01			

In the “Firm related” type of capital flows results the main aspect that prevails is the prevalence of the “pull factors” because all were significant in both estimations. Contrary to the results obtained with the other two types of capital flows, the compound of AC had more impact in the capital flows to the LAC, because the international interest rate constructed with the compound the AC was the only one significant. While the other constructed with the US alone, wasn’t significant.

Finally, in order to analyze part of the claim that the US Monetary Policy is causing disruption to the emerging and developing countries by promoting capital flows to those countries as consequence of the reduction in its domestic interest rate, especially during most of the 2000’s. I would

like to include in the analysis the results for the “All kinds” type of capital flows for the period 2000 to 2010⁵⁶, which cover part of the period of this claim⁵⁷.

The regressions were performed considering the total capital flows to the LAC “All kinds” type as dependent variable and the push factors considering the AC. As it can be seen on the next table, the results indicate that there were two significant “push” factors. Those were the proxy of the global liquidity and the risk aversion (those results weren’t observed when the fixed-effect model was used). The estimator calculated of this variable implies that an increase of 1% of the global liquidity (generated by the growth of the monetary stock in the AC), holding all other things constant, can generate capital flows to the LAC for an amount between 0.47 to 1.67 percentages of GDP. Even with the limitation that the fixed-effect model wasn’t significant, the impact of the global liquidity on the capital flows to LAC is bigger than the impact registered for the whole period (0.45 to 1.22 percentages of GDP). The other “push factor” that was significant, the risk aversion, indicated that for each reduction of one percentage points in risk aversion, holding other things constant, can generate an increase on the total capital flows to the LAC of around 0.06 and 0.22 percentages of GDP. For the whole period, however, this variable wasn’t significant.

On the “pull” factors the privatizations and the country riskiness were significant. Nonetheless the fact that the countries had reduced the number and amount of privatizations during the 2000’s, the results indicates that it was important on the capital flows attraction. But the reduction registered on the country riskiness was significant in the three models, indicating in some sense, that the changes in the political, social and economic aspects have been important factor in the capital flows attraction also. One flaw of these results is that the explanatory power fell to almost half to that registered using the whole period because the R-squared varied between the values of 0.16 to 0.20. All of this can be seen on the next table.

⁵⁶ The other two types of capital flows, “Debt” and “Firm related”, didn’t registered significant results at all, for that reason those are not presented.

⁵⁷ I tried to cover only the period from 2003-2010, but the results were not significant at all.

Table 6.7 (2000 -2010)			
All Kinds of Capital Flows Considering Advanced Economies			
Dependant Variable: All Kinds of Capital as Percentage of GDP			
Explanatory Variables	Fixed-Effects Model	Random-Effects Model	Pooled Model
AC10Y (Interest Rate Adv. Countries)	2.037072 (1.2991)	2.014428 (1.2291)	1.716478 (1.5554)
RAVIX (Risk Aversion)	-0.137423 (0.0812)	-0.140323 * (0.0782)	-0.142084 ** (0.0701)
GLMSGAC (Glob Liq Mon Stock AC)	0.999252 (0.6211)	1.053178 * (0.5820)	1.169114 ** (0.4959)
RGGDAC (GDP diff against AC)	0.340438 (0.2559)	0.309193 (0.2522)	0.184140 (0.1877)
DUMPRALP (Dummy Privatizations)	0.143249 (0.0141)	0.211117 * (0.1224)	0.471309 *** (0.1180)
ICRGPRS (Country Risk Guide)	0.305710 ** (0.1316)	0.271156 *** (0.0915)	0.224491 *** (0.0726)
Constant	-27.527810 *** (6.9356)	-25.402670 ** (6.3803)	-21.961620 ** (9.1877)
N	220	220	220
R ²	0.2003	0.1986	0.1636
F Test	5.22	43.83	9.37
Prob F Test	0.003 ***	0.000 ***	0.002 ***
* p < 0.10, ** p < 0.05, *** p < 0.01			

When the analysis was performed using the “push factors” with the US alone, the results indicate that there were no “push factors” significant (just in the Pooled model the global liquidity was significant). For the “pull factors” the privatization and the country riskiness were again significant but only in the random-effect and pooled models. So, the results obtained using the US alone, are almost not significant at all. For that reason, it is not possible to compare against the results obtained using the compound of AC. This can be seen on the next table.

Table 6.8 (2000 - 2010)			
All Kinds of Capital Flows Considering only The United States			
Dependant Variable: All Kinds of Capital as Percentage of GDP			
Explanatory Variables	Fixed-Effects Model	Random-Effects Model	Pooled Model
UST10Y (Interest Rate US Treasury)	1.719196 (1.0164)	1.667729 (0.9890)	1.463529 (1.1758)
RAVIX (Risk Aversion)	-0.066077 (0.0665)	-0.067443 (0.0608)	-0.071027 (0.0659)
GLMSGRUS (Glob Liq Mon Stock US)	1.177083 (1.0471)	1.227530 (0.9490)	1.384306 * (0.8074)
RGGDUS (GDP diff against US)	0.367133 (0.2705)	0.329846 (0.2650)	0.198240 (0.1898)
DUMPRALP (Dummy Privatizations)	0.137189 (0.1414)	0.208121 * (0.1224)	0.471511 *** (0.1177)
ICRGPRSDUS (Country Risk Guide)	-0.237204 (0.1433)	-0.230750 ** (0.1012)	-0.213703 *** (0.0759)
Constant	-6.314352 (11.3408)	-6.468049 (10.2643)	-6.768737 (10.3957)
N	220	220	220
R ²	0.1959	0.1944	0.1610
F Test	4.53	42.71	9.71
Prob F Test	0.005 ***	0.000 ***	0.000 ***
* p < 0.10, ** p < 0.05, *** p < 0.01			

When the results of the whole period are compared with those for the 2000-2010 period, it is difficult to compare because the lack of significance of the results using the US data alone (but also using the other types of capital flows) and for the reduction in the explanatory power of the model. However, it appears that the global liquidity calculated using the compound of AC has greater impact during the 2000's than the whole period. Also, it appears that the risk aversion had the potential of explanatory power, so it would be important for future researches to go more deeply into this subject 2000-2010 period, using more time disaggregation in order to increase the number of observations and also trying other proxy variables.

iii. Findings

The analysis indicates that there is a difference in the main factors that have explanatory power for the different types of capital flows. It appears that “pull factors” were more important than “push factors” for almost each type of capital flows.

The most important “push factor” was the global liquidity. This result applies to the “All kinds” and “Debt” type of capital flows. Another main characteristic of these results is that the impact on the capital flows was bigger when the measurement considering the US alone was used (this was as consequence of the proxy used for global liquidity, because the growth of the monetary stock of the US alone had slightly bigger impact for the LAC than the registered growth for the compound of AC). That could be related to economic, financial, and political linkages of most of the LAC with the US. The other “push factor” related to the monetary policy in the AC, the proxy for international interest rate, was only significant for the “Firm related” type of capital flows and when the compound of AC were used. So, the US Treasury 10 years bond interest rate has impact on the capital flows to the LAC only indirectly when it was used with the similar other interest rates of the AC. The risk aversion proxy had some explanatory power on the “Debt” type of capital flows. When the 2000-2010 period and “All kinds” of capital flows were considered, both, global liquidity and risk aversion had explanatory power for the capital flows to the LAC, but only when the AC compound was considered.

For the “pull factors,” the most important variable was privatization; next country riskiness which was significant most of the time. Finally, the return variable was only sometimes significant. This may be because only one simple proxy, which was measured by the GDP relationship, was significant. Thus it would be useful to consider other proxies in future research.

The model of “push and pull factors” was able to give us an idea of the main factors that drove capital flows to the LAC for the period 1987-2010. In addition, even the statistical limitations presented when the 2000-2010 period was used, it was also able to indicate some of the main factors that affect the flow of capital to the LAC.

iv. Robustness Check

Considering that many results can be misleading due to statistical characterizations of each model, so all the analyses performed were elaborated considering robust standard errors correction for heteroskedasticity. Tests were also performed to validate the fixed or random effects, to validate the time-fixed effects, and to see if pooled is preferred. Additionally, the unit-root tests were performed in order to check if the variables were stationary using the Levin-Lin-Chu and the Harris-Tzavalis unit root tests.

Additionally, a set of alternative variables was created, not only to perform a comparative analysis between the US and the AC on the “push factors,” but also to provide more robustness to the model having alternative variables. I only reported, measures that can give us a helpful insight directly about the US Monetary Policy. However, there was also another measure used for risk aversion, the volatility index calculated by STOXX limited for the European market⁵⁸. Including it didn’t change the results significantly (because there is no information available for the whole period for time the results are limited to the 2000-2010 period).

“Pull factors” alternative variable were generated as well. I included an alternative variable for country riskiness, a numeric grade of the credit sovereign rating⁵⁹, even when it didn’t work as the original in all the analysis performed (it worked well with “Debt” and with

⁵⁸ The indicator was described on the data description and sources of the information section.

⁵⁹This indicator was also described on the data description and sources of information section.

half of the “All kinds” of capital flows types). In all cases, it registered a considerable reduction on the R-squared because of the lack of a long time data, because it registered consistent data for all the countries since 2002 only.

In general terms, the “push and pull factors” model captured the capital flows to the LAC rather well, but it will be important for future researches to focus on shorter time relationship to improve the analysis.

Conclusions

This study indicates that expansionary US Monetary Policy has had a general tendency to reduce US long term interest rates. Given the increasing linkages among countries through the interconnections through trade, financial and labor markets, such policy has not only had effects in the US economy, but also on the rest of the world. In response to those effects, many emerging and developing countries have been pursuing counter policies.

The data on capital flows to the emerging and developing countries indicates that the LAC have been receiving capital flows as well as the others and the main source of those capital flows continues to be the advanced economies. Analyzing the types of capital that are flowing to the LAC, the main type is “Firm related” because it has been the only one that was constantly positive during the time period considered. This type of capital flow has been driven for different events such as the change of most of the LAC towards more market oriented policies and the internationalization of firms in order to compete globally. There is an important correlation among the capital flows to the LAC, especially on the “Firm related” type, meaning that they have had followed the same path of market liberalization throughout this time.

The other important capital flow is the “Debt” type because it has been an additional source of financing for the private and public sectors; it has been a supplemental source of funds, especially in crisis’ times.

The econometric results indicate that the US Federal Reserve Funds rate has been influencing the long term interest rate, indicating that, holding other thing constant for the whole time period considered (2007-2011), for any 100 basis points change in the Fed funds interest rate implied a change in the same direction in the long term interest rate between 59 and 62 basis

points. However, the changing economic conditions and the persistence on the fiscal deficit on the US have been reducing the influence as time passes. The econometric test results for the 2006-2011 period indicate that the effect was reduced to almost half of the whole period effect. A change of 100 basis points in the Fed funds rate produced only a change between 30 and 34 basis points in the long term interest rate. The econometric results support the “conundrum on the interest rate” claimed by Greenspan and Bernanke, given the fact that, the incidence for each 100 basis points of change in the Fed Funds rates was only between 9 and 16 basis points on the long term interest rate for the period April, 2003 to June, 2006.

In general, the econometric results of the “push and pull factors” model for capital flows indicate that there exists a slightly preeminence of the “pull” over the “push” factors. This means that the LAC are doing something (through sound and consistent economic policies, political stability, and more market oriented policies) to attract capital flows. But the US and the other advanced countries (through the reduction of the interest rate and expanded global liquidity) are helping those capital flows go to the LAC, as well.

Concerning the major object of this study, the effects of US Monetary Policy on the capital flows to the LAC, two main indicators of the monetary policy were included as “push factors.” The first one, the Fed funds interest rate, was measured indirectly through its influence on the long term US interest rate. In that sense and as mentioned earlier, the influence of the Fed funds interest rate over the US Treasury 10 years interest rate has been decreasing along the time. But the specific econometric results of the “push and pull factors” model indicate that the long term US interest rate has had influence only over the “Firm related” type of capital flows. Analyzing the calculated estimator for the compound of AC, it indicates that a decrease of 100

basis points in the international interest rate, holding other things constant, can generate an increase on the capital flows to the LAC by an amount between 0.18 to 0.33 percentages of GDP.

The second indicator of the US Monetary policy included on the “push factors,” the global liquidity indicator, (because of the use as a proxy of the growth of the monetary stock in the AC) was statistical and economically significant for the “All kinds” and “Debt” types of capital flows. The econometric results for the “All kinds” of capital flows indicate that an increase of 1% of the global liquidity (measured by the growth of the monetary stock in the US), holding all other things constant, can generate capital flows to the LAC for an amount between 0.47 to 1.71 percentages of GDP. This effect is higher than when the indicator is constructed with the compound of AC because the effect on capital flows was between 0.45 to 1.22 percentages of GDP.

For the “Debt” type of capital flows, the econometric results indicate that an increase of 1% of the global liquidity, holding all other things constant, can generate capital flows to the LAC for an amount between 0.23 to 0.80 percentages of GDP. It registering slightly more effect than when it is considered with the compound of AC because the effects on capital flows could be between 0.19 to 0.72 percentages of GDP.

In the “Debt” type of capital, the other “push factor” (risk aversion) was also statistically and economically significant. For each reduction of one percentage points in the risk aversion was estimated to generate an increase on the “Debt” type of capital flows to the LAC of between 0.04 and 0.09 percentages of GDP (holding all other things constant).

Related to the “pull factors,” the econometric results indicate that capital flows not only rely on the economic returns, because the results weren’t always statistically and economically

significant. On the contrary, most of the results show that the reduction on the perception of risk in the LAC has been of great importance on the attraction of capital flows, given that those were statistically and economically significant for almost all of the three types of capital flows. The privatization of previously state-owned firms had a major role on the attraction of capital flows especially during the first time period.

In summary the study shows that US Monetary Policy has been having an important role on the determination of the capital flows to the Latin America Countries especially in recent times.

Finally, this study opens the door to many future and more advanced researchers, not only on the utilization of new or improved variable proxies, but also on the analysis of the assets of the Latin America region, the study of the short term relationship of the capital flows model, and the study of the linkages among the countries in the region.

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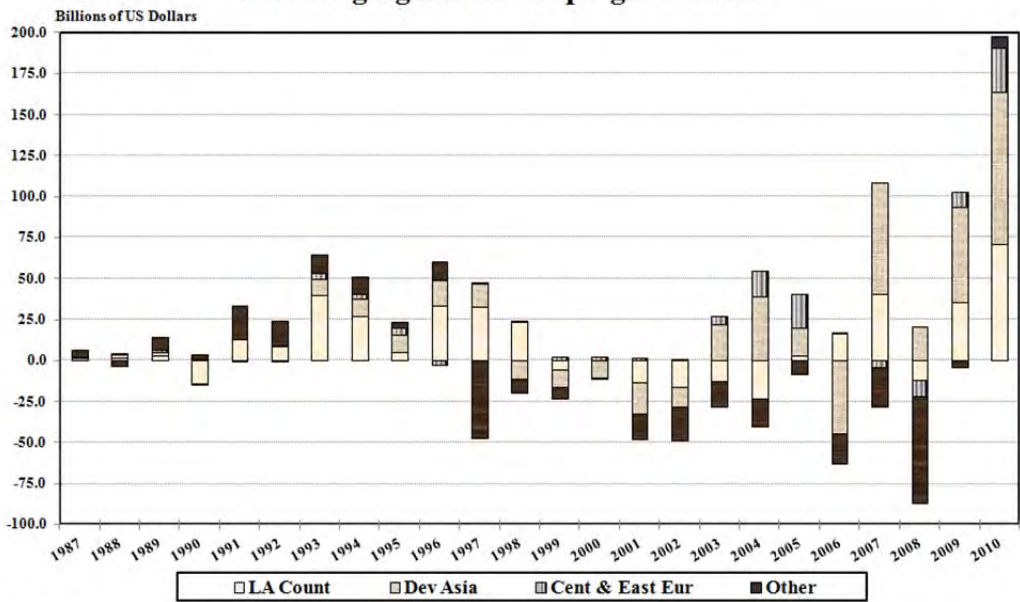
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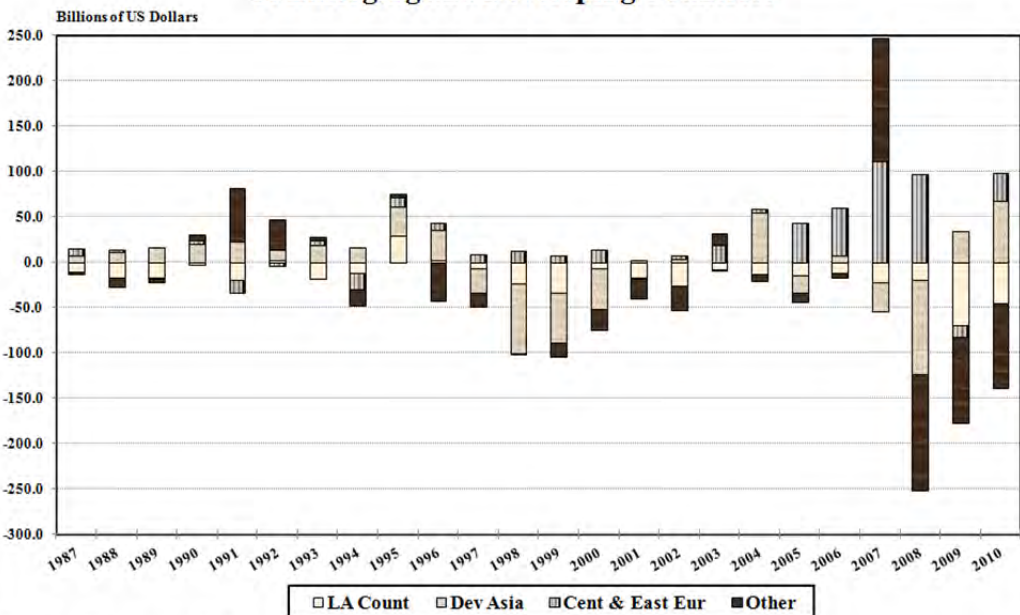
Annexes

Annexed Graph 3.1 A
Net Foreign Portfolio Investment Capital Flows
To Emerging and Developing Countries



Source: Own Elaboration using data from the International Monetary Fund (IMF).

Annexed Graph 3.2 A
Other Net Investment Flows
To Emerging and Developing Countries



Source: Own Elaboration using data from the International Monetary Fund (IMF).

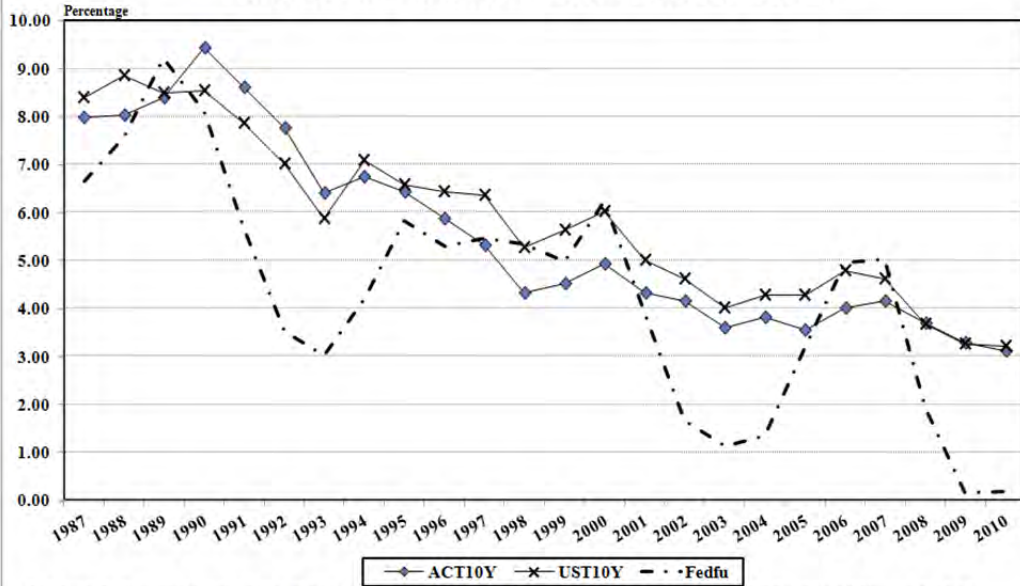
Annexed Table 3.1 A
Latin American Countries Distribution
Current GDP (1987-2010)
Percentage of Participation

Three Main Countries 3MLAC					Caribbean Countries CARC				
	Country		Percentage	Accumulated Percentage		Country		Percentage	Accumulated Percentage
1	Brazil	BRA	50.16	50.2	1	Dominican Republic	DOM	53.98	54.0
2	Mexico	MEX	34.22	84.4	2	Trinidad and Tobago	TTO	25.37	79.4
3	Argentina	ARG	15.62	100.0	3	Jamaica	JAM	20.65	100.0

Big South American Countries BSAC					Central American Countries CAC				
	Country		Percentage	Accumulated Percentage		Country		Percentage	Accumulated Percentage
1	Colombia	COL	31.34	31.3	1	Guatemala	GUA	27.1	27.1
2	Venezuela	VEN	31.12	62.5	2	Costa Rica	CRI	21.3	48.4
3	Chile	CHI	20.33	82.8	3	El Salvador	PAN	17.5	65.9
4	Peru	PER	17.21	100.0	4	Panama	ESV	16.0	81.9
					5	Honduras	HON	11.8	93.7
					6	Nicaragua	NIC	6.3	100.0

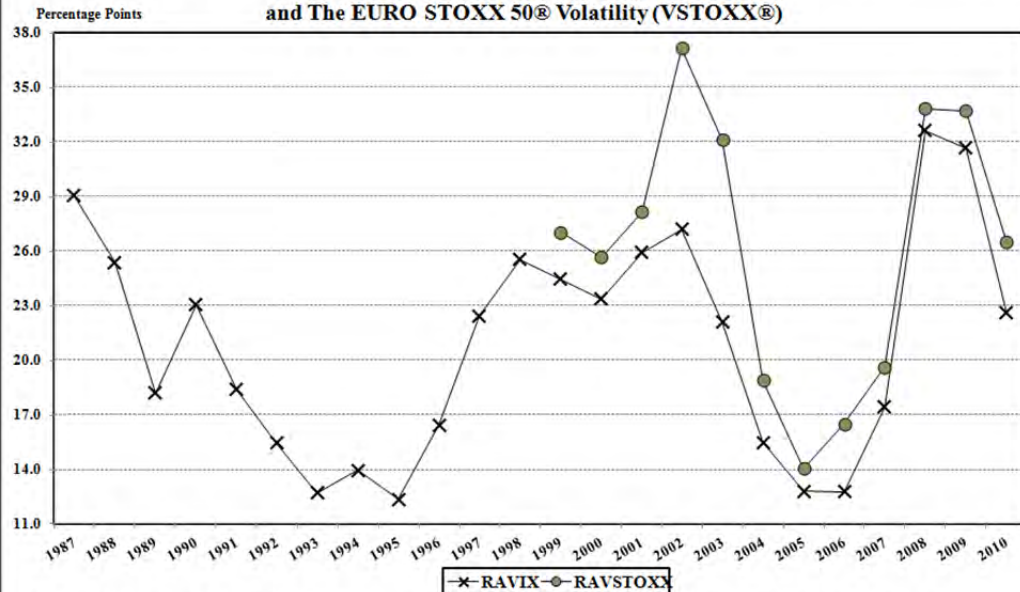
Small South American Countries SSAC				
	Country		Percentage	Accumulated Percentage
1	Ecuador	ECU	41.02	41.0
2	Uruguay	URU	30.95	72.0
3	Bolivia	BOL	14.26	86.2
4	Paraguay	PAR	13.77	100.0

Annexed Graph 6.1 A
International Interest Rate ^{*/}
Advanced Countries and United States

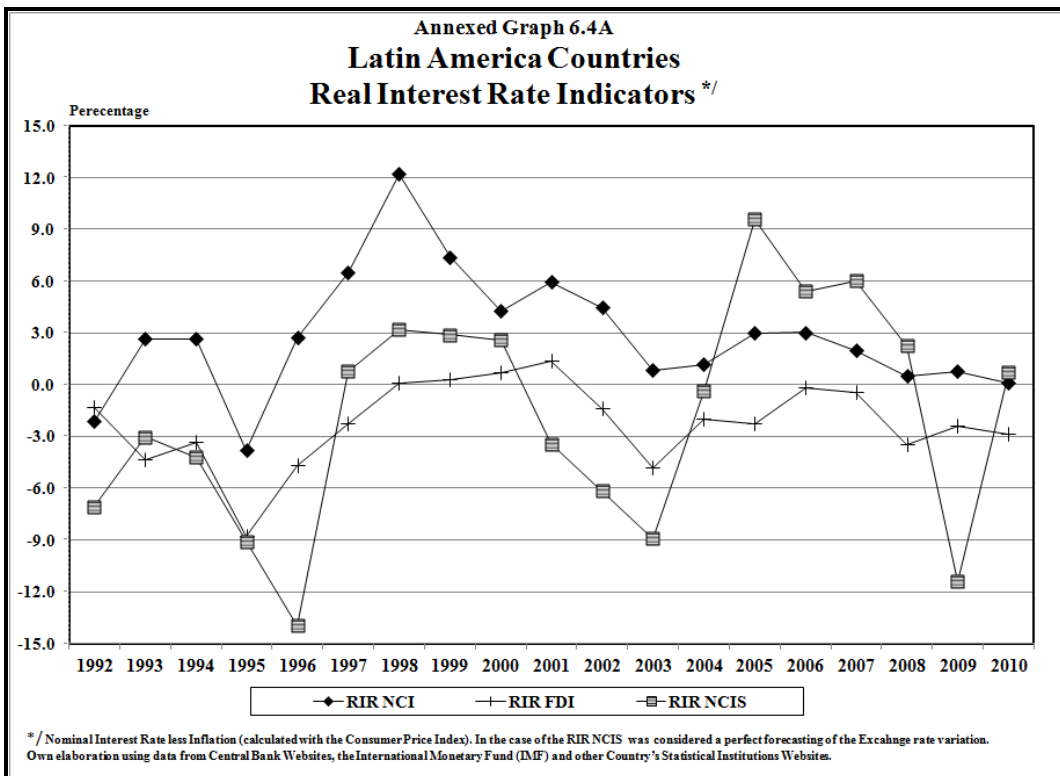
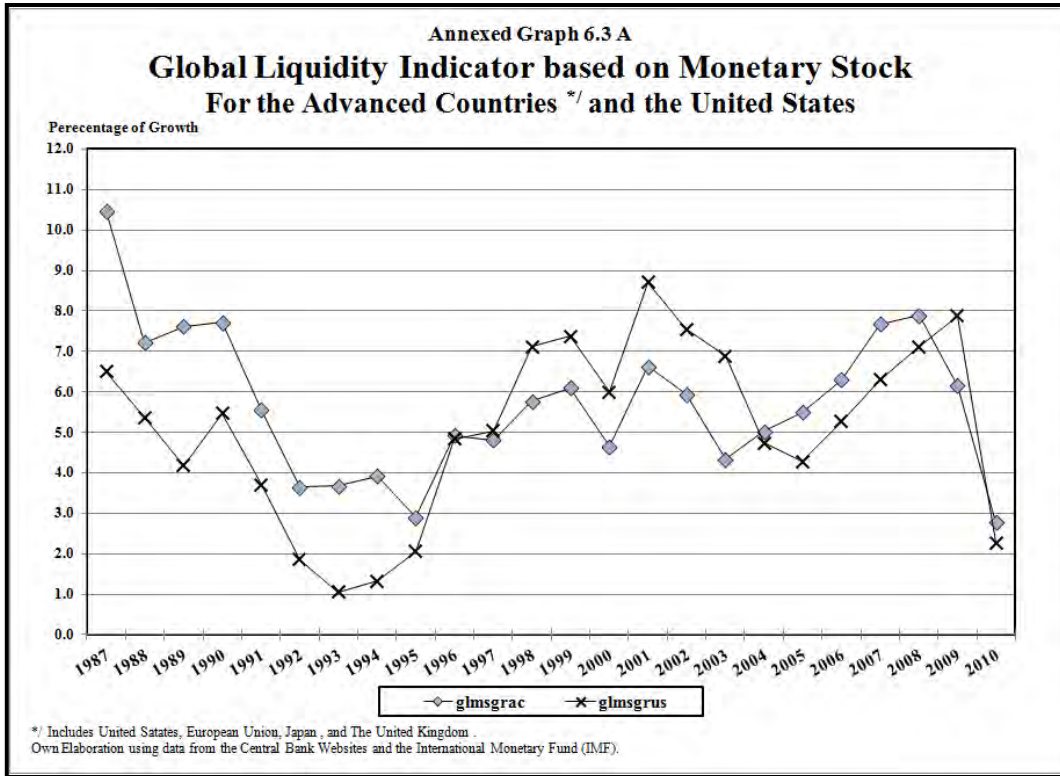


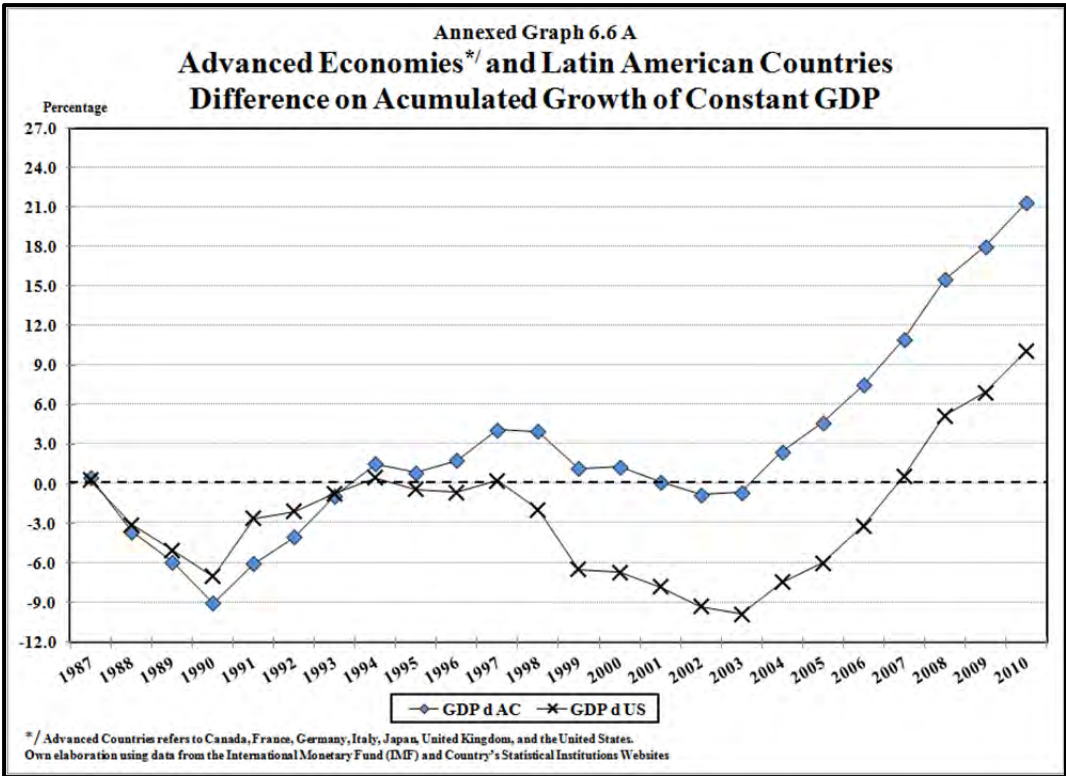
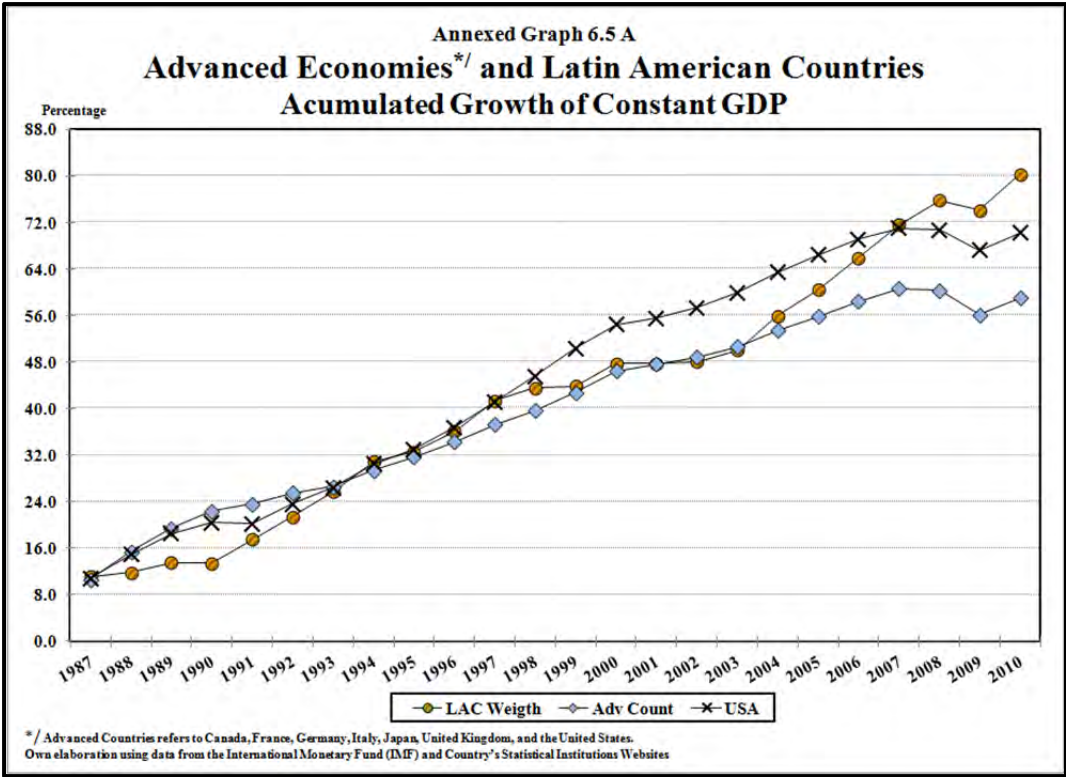
^{*/} Refers to the Government Bonds and Notes 10 Years Constant Maturity, for the Advanced Countries (US, EU, Japan and United Kingdom), US Treasury Bonds 10 Years Constant Maturity and the Effective Federal Funds Interest Rate.
 source: Own Elaboration using data from the Central Bank Websites and the International Monetary Fund (IMF).

Annexed Graph 6.2 A
Risk Aversion calculated by Volatility Index
The CBOE Volatility Index® (VIX®)
and The EURO STOXX 50® Volatility (VSTOXX®)

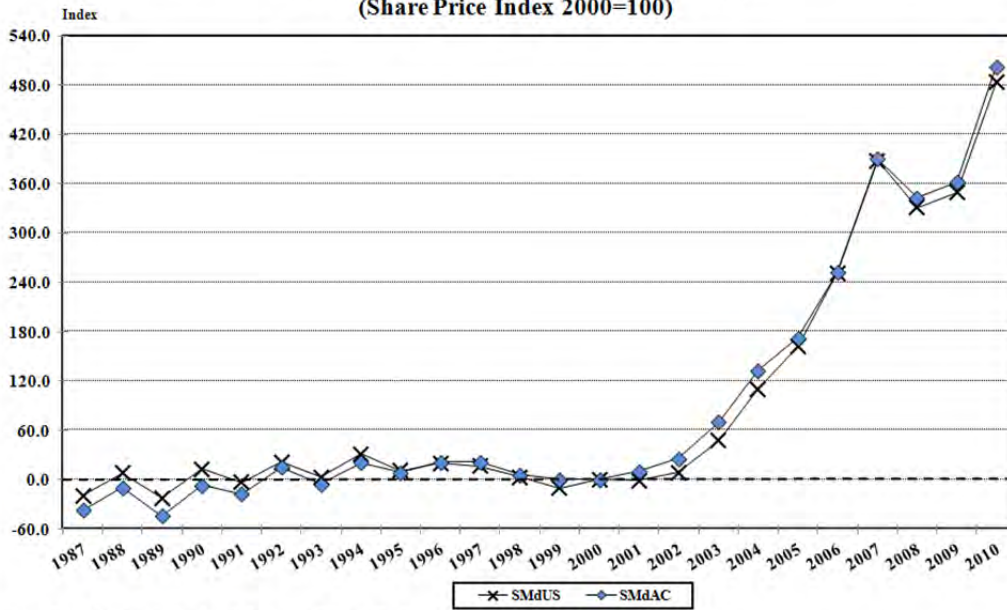


^{*/} The VIX is a weighted blend of prices for a range of options on the S&P 500 index, it represents one measure of the market's expectation of stock market volatility over the next 30 day period. While the VSTOXX Index is based on EURO STOXX 50 realtime options prices and is designed to reflect the market expectations of near-term up to long-term volatility by measuring the square root of the implied variance across all options of a given time to expiration. Own elaboration using data from the CBOE and the STOXX Limited.



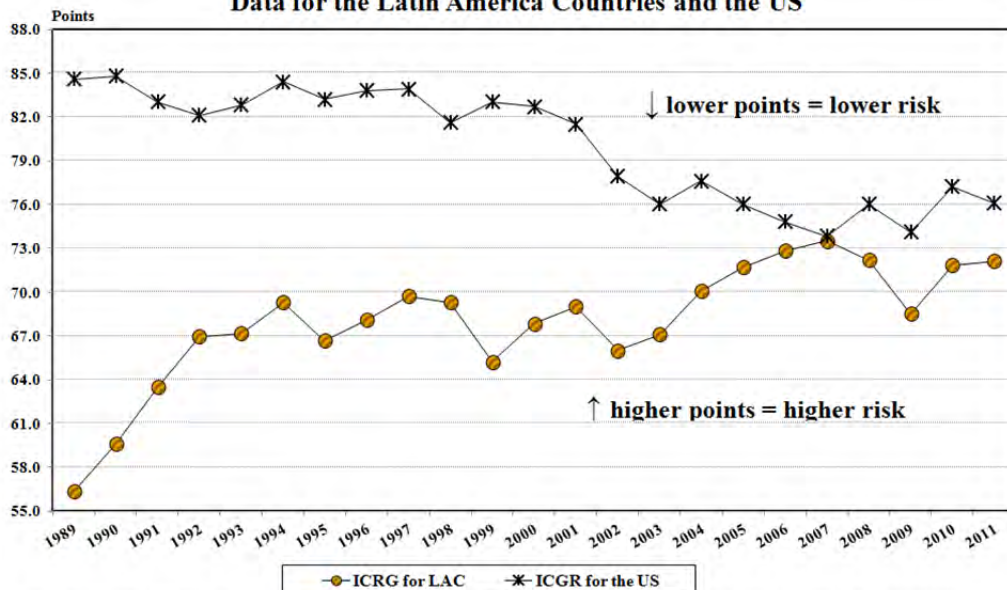


Annexed Graph 6.7 A
Latin America Countries, Advanced Economies and USA
Difference on the Stock Market Indexes
 (Share Price Index 2000=100)



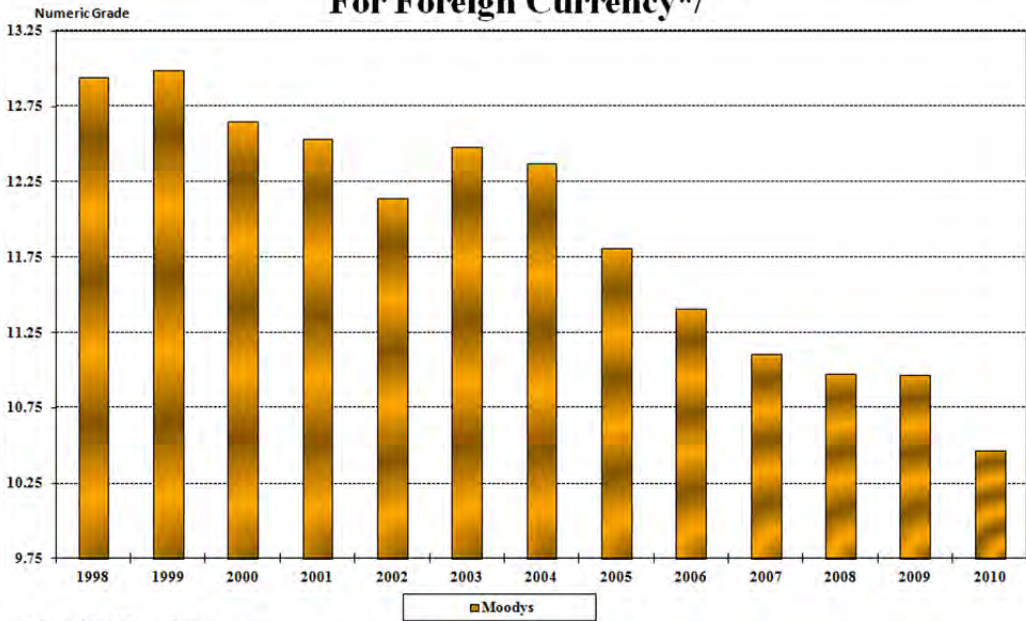
Source: Own elaboration using data from the International Monetary Fund (IMF) and Country's Stock Exchange Institutions Websites

Annexed Graph 6.8 A
The PRS Group International Country Risk Guide
Composite Risk Rating
 Data for the Latin America Countries and the US



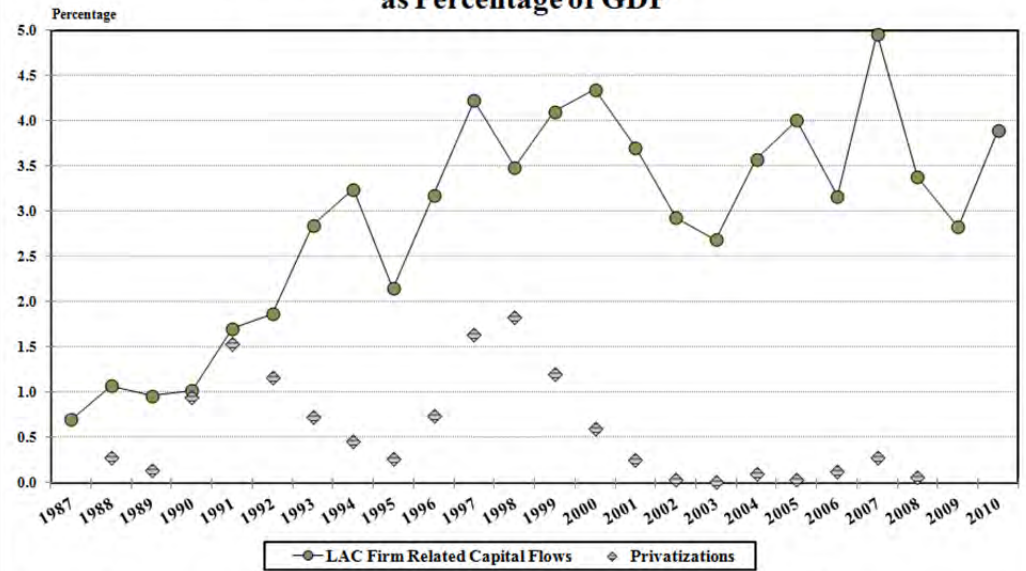
Source: Own elaboration with data of The International Country Risk Guide (ICRG) calculated by The PRS Group, Inc. Obtained through the Nexis-Lexis Academic; weighted with the GDP of each country.

Annexed Graph 6.9 A
Latin America Countries' Sovereign Ratings
For Foreign Currency*/



*/ Source: Moody's Investor Services.
 Conversions from letter to numeric scale. Rating 1 the highest credit quality and 21 very high default risk

Annexed Graph 6.10 A
Latin America Countries
Firm Related Capital Flows and Privatization
as Percentage of GDP



Source: Own Elaboration using data from the Countries Central Banks, Countries Statistical Institutions, and The International Monetary Fund (IMF), and The Privatization Database of the World Bank (WB).

Annexed Table 6.1 A i

All Kinds of Capital Flows: General Econometric Output ^{*/}

Fixed-Effects Model

Period: 1987 - 2010

Proxy / Group of Countries	As Percentage of GDP							Total Percentage of GDP and Levels
	LAC	M3LAC	BSAC	CAC	SSAC	CARC	Subtotal	
AC10y	0 of 5	0 of 5	5 of 5	0 of 4	0 of 4	0 of 4	5 of 27	16 of 54
UST10y	0 of 5	0 of 5	5 of 5	0 of 4	0 of 4	0 of 4	5 of 27	14 of 54
Fed Fun	0 of 5	0 of 5	0 of 5	0 of 4	0 of 4	0 of 4	0 of 27	3 of 54
RA vix	0 of 15	0 of 15	0 of 15	8 of 12	0 of 12	0 of 12	8 of 81	8 of 162
GL MON AC	4 of 5	0 of 5	0 of 5	4 of 4	0 of 4	0 of 4	8 of 27	16 of 54
GL MON US	0 of 10	0 of 10	0 of 10	0 of 8	0 of 8	0 of 8	0 of 54	0 of 108
Push	4 of 45	0 of 45	10 of 45	12 of 36	0 of 36	0 of 36	26 of 243	57 of 486
RIR NCI	0 of 3	0 of 3	0 of 3	0 of 3	0 of 3	0 of 3	0 of 27	0 of 54
RIR NCIS	0 of 3	0 of 3	0 of 3	0 of 3	3 of 3	1 of 3	4 of 27	8 of 54
RIR FDI	0 of 3	0 of 3	0 of 3	0 of 3	0 of 3	0 of 3	0 of 27	11 of 54
GDP d AC	1 of 1	0 of 1	0 of 1	0 of 1	0 of 1	0 of 1	1 of 6	2 of 12
GDP d US	2 of 2	0 of 2	0 of 2	0 of 2	0 of 2	0 of 2	2 of 12	3 of 24
SM d AC	0 of 1	1 of 1	1 of 1				2 of 3	3 of 6
SM d US	0 of 2	2 of 2	0 of 2				2 of 6	4 of 12
PR Dumm	15 of 15	15 of 15	15 of 15	0 of 12	12 of 12	0 of 12	57 of 81	110 of 162
ICRG	4 of 5	5 of 5	4 of 5	1 of 4	0 of 4	0 of 4	14 of 27	19 of 54
ICRG dUS	10 of 10	0 of 10	9 of 10	7 of 8	0 of 8	4 of 8	30 of 54	50 of 108
Pull	32 of 45	23 of 45	29 of 45	8 of 36	15 of 36	5 of 36	112 of 243	210 of 486
Proxy / Group of Countries	Levels							Subtotal
	LAC	M3LAC	BSAC	CAC	SSAC	CARC		
AC10y	2 of 5	0 of 5	4 of 5	4 of 4	0 of 4	1 of 4	11 of 27	
UST10y	1 of 5	0 of 5	5 of 5	3 of 4	0 of 4	0 of 4	9 of 27	
Fed Fun	0 of 5	1 of 5	2 of 5	0 of 4	0 of 4	0 of 4	3 of 27	
RA vix	0 of 15	0 of 15	0 of 15	0 of 12	0 of 12	0 of 12	0 of 81	
GL MON AC	0 of 5	0 of 5	0 of 5	4 of 4	0 of 4	4 of 4	8 of 27	
GL MON US	0 of 10	0 of 10	0 of 10	0 of 8	0 of 8	0 of 8	0 of 54	
Push	3 of 45	1 of 45	11 of 45	11 of 36	0 of 36	5 of 36	31 of 243	
RIR NCI	0 of 3	0 of 3	0 of 3	0 of 3	0 of 3	0 of 3	0 of 27	
RIR NCIS	1 of 3	0 of 3	0 of 3	0 of 3	3 of 3	0 of 3	4 of 27	
RIR FDI	3 of 3	2 of 3	3 of 3	0 of 3	3 of 3	0 of 3	11 of 27	
GDP d AC	1 of 1	0 of 1	0 of 1	0 of 1	0 of 1	0 of 1	1 of 6	
GDP d US	1 of 2	0 of 2	0 of 2	0 of 2	0 of 2	0 of 2	1 of 12	
SM d AC	0 of 1	0 of 1	1 of 1				1 of 3	
SM d US	0 of 2	0 of 2	2 of 2				2 of 6	
PR Dumm	15 of 15	15 of 15	9 of 15	12 of 12	12 of 12	0 of 12	63 of 81	
ICRG	0 of 5	1 of 5	3 of 5	1 of 4	0 of 4	0 of 4	5 of 27	
ICRG dUS	4 of 10	2 of 10	7 of 10	7 of 8	0 of 8	0 of 8	20 of 54	
Pull	25 of 45	20 of 45	25 of 45	20 of 36	18 of 36	0 of 36	108 of 243	

* Refers to number of times that the variable was significant and with the economic expected sign on the econometric test.

Annexed Table 6.1 A ii

All Kinds of Capital Flows: General Econometric Output ^{*/}

Fixed-Effects Model

Period: 1991 - 2000

Proxy / Group of Countries	As Percentage of GDP						Subtotal	Total Percentage of GDP and Levels
	LAC	M3LAC	BSAC	CAC	SSAC	CARC		
AC10y	0 of 5		0 of 5	0 of 4	0 of 4	0 of 4	1 of 22	2 of 44
UST10y	0 of 5		0 of 5	0 of 4	0 of 4	0 of 4	0 of 22	0 of 44
Fed Fun	0 of 5		0 of 5	0 of 4	0 of 4	0 of 4	0 of 22	0 of 44
RA vix	0 of 15		0 of 15	0 of 12	0 of 12	0 of 12	0 of 66	0 of 132
GL MON AC	0 of 5		0 of 5	0 of 4	0 of 4	0 of 4	0 of 22	0 of 44
GL MON US	0 of 10		0 of 10	0 of 8	0 of 8	0 of 8	0 of 44	0 of 88
Push	0 of 45		0 of 45	0 of 36	0 of 36	0 of 36	1 of 198	2 of 396
RIR NCI	0 of 3		0 of 3	0 of 3	3 of 3	0 of 3	3 of 24	6 of 44
RIR NCIS	0 of 3		0 of 3	0 of 3	3 of 3	0 of 3	3 of 24	7 of 44
RIR FDI	0 of 3		0 of 3	0 of 3	3 of 3	0 of 3	3 of 24	6 of 44
GDP d AC	1 of 1		1 of 1	0 of 1	0 of 1	1 of 1	3 of 5	4 of 10
GDP d US	0 of 2		0 of 2	0 of 2	0 of 2	0 of 2	0 of 10	2 of 20
SM d AC	1 of 1		0 of 1				1 of 2	2 of 4
SM d US	0 of 2		0 of 2				0 of 4	0 of 8
PR Dumm	15 of 15		15 of 15	0 of 12	12 of 12	12 of 12	54 of 66	120 of 132
ICRG	0 of 5		0 of 5	0 of 4	0 of 4	0 of 4	0 of 22	3 of 44
ICRG dUS	0 of 10		1 of 10	0 of 8	0 of 8	0 of 8	1 of 44	1 of 88
Pull	17 of 45		17 of 45	0 of 36	21 of 36	13 of 36	68 of 198	151 of 396
Proxy / Group of Countries	Levels						Subtotal	
	LAC	M3LAC	BSAC	CAC	SSAC	CARC		
AC10y	0 of 5		0 of 5	1 of 4	0 of 4	0 of 4	1 of 22	
UST10y	0 of 5		0 of 5	0 of 4	0 of 4	0 of 4	0 of 22	
Fed Fun	0 of 5		0 of 5	0 of 4	0 of 4	0 of 4	0 of 22	
RA vix	0 of 15		0 of 15	0 of 12	0 of 12	0 of 12	0 of 66	
GL MON AC	0 of 5		0 of 5	0 of 4	0 of 4	0 of 4	0 of 22	
GL MON US	0 of 10		0 of 10	0 of 8	0 of 8	0 of 8	0 of 44	
Push	0 of 45		0 of 45	1 of 36	0 of 36	0 of 36	1 of 198	
RIR NCI	0 of 3		0 of 3	0 of 3	3 of 3	0 of 3	3 of 24	
RIR NCIS	1 of 3		0 of 3	0 of 3	3 of 3	0 of 3	4 of 24	
RIR FDI	0 of 3		0 of 3	0 of 3	3 of 3	0 of 3	3 of 24	
GDP d AC	1 of 1		0 of 1	0 of 1	0 of 1	0 of 1	1 of 5	
GDP d US	2 of 2		0 of 2	0 of 2	0 of 2	0 of 2	2 of 10	
SM d AC	0 of 1		1 of 1				1 of 2	
SM d US	0 of 2		0 of 2				0 of 4	
PR Dumm	15 of 15		15 of 15	12 of 12	12 of 12	12 of 12	66 of 66	
ICRG	0 of 5		0 of 5	0 of 4	0 of 4	3 of 4	3 of 22	
ICRG dUS	0 of 10		0 of 10	0 of 8	0 of 8	0 of 8	0 of 44	
Pull	19 of 45		16 of 45	12 of 36	21 of 36	15 of 36	83 of 198	

* Refers to number of times that the variable was significant and with the economic expected sign on the econometric test.

Annexed Table 6.1 A *iii***All Kinds of Capital Flows: General Econometric Output ^{*/}****Fixed-Effects Model****Period: 2000 - 2010**

Proxy / Group of Countries	As Percentage of GDP							Total Percentage of GDP and Levels
	LAC	M3LAC	BSAC	CAC	SSAC	CARC	Subtotal	
AC10y	1 of 5	0 of 5	4 of 5	0 of 4	0 of 4	0 of 4	5 of 27	14 of 54
UST10y	0 of 5	0 of 5	0 of 5	0 of 4	0 of 4	0 of 4	0 of 27	1 of 54
Fed Fun	0 of 5	0 of 5	0 of 5	0 of 4	0 of 4	0 of 4	0 of 27	0 of 54
RA vix	3 of 15	0 of 15	0 of 15	8 of 12	0 of 12	0 of 12	11 of 81	11 of 162
GL MON AC	4 of 5	0 of 5	0 of 5	1 of 4	0 of 4	0 of 4	5 of 27	8 of 54
GL MON US	0 of 10	0 of 10	0 of 10	0 of 8	0 of 8	0 of 8	0 of 54	0 of 108
Push	8 of 45	0 of 45	4 of 45	9 of 36	0 of 36	0 of 36	21 of 243	34 of 486
RIR NCI	0 of 3	0 of 3	1 of 3	0 of 3	0 of 3	0 of 3	1 of 27	3 of 54
RIR NCIS	0 of 3	0 of 3	0 of 3	0 of 3	0 of 3	0 of 3	0 of 27	0 of 54
RIR FDI	0 of 3	0 of 3	0 of 3	0 of 3	0 of 3	0 of 3	0 of 27	0 of 54
GDP d AC	0 of 1	0 of 1	0 of 1	0 of 1	0 of 1	0 of 1	0 of 6	1 of 12
GDP d US	0 of 2	0 of 2	0 of 2	0 of 2	0 of 2	0 of 2	0 of 12	4 of 24
SM d AC	1 of 1	0 of 1	1 of 1				2 of 3	4 of 6
SM d US	0 of 2	1 of 2	2 of 2				3 of 6	5 of 12
PR Dumm	0 of 15	0 of 15	0 of 15	0 of 12	8 of 12	0 of 12	8 of 81	32 of 162
ICRG	5 of 5	5 of 5	3 of 5	0 of 4	2 of 4	0 of 4	15 of 27	22 of 54
ICRG dUS	10 of 10	0 of 10	6 of 10	0 of 8	1 of 8	0 of 8	17 of 54	36 of 108
Pull	16 of 45	6 of 45	13 of 45	0 of 36	11 of 36	0 of 36	46 of 243	107 of 486
Proxy / Group of Countries	Levels							Subtotal
	LAC	M3LAC	BSAC	CAC	SSAC	CARC		
AC10y	4 of 5	1 of 5	4 of 5	0 of 4	0 of 4	0 of 4	9 of 27	
UST10y	0 of 5	0 of 5	1 of 5	0 of 4	0 of 4	0 of 4	1 of 27	
Fed Fun	0 of 5	0 of 5	0 of 5	0 of 4	0 of 4	0 of 4	0 of 27	
RA vix	0 of 15	0 of 15	0 of 15	0 of 12	0 of 12	0 of 12	0 of 81	
GL MON AC	0 of 5	0 of 5	0 of 5	1 of 4	0 of 4	2 of 4	3 of 27	
GL MON US	0 of 10	0 of 10	0 of 10	0 of 8	0 of 8	0 of 8	0 of 54	
Push	4 of 45	1 of 45	5 of 45	1 of 36	0 of 36	2 of 36	13 of 243	
RIR NCI	0 of 3	0 of 3	2 of 3	0 of 3	0 of 3	0 of 3	2 of 27	
RIR NCIS	0 of 3	0 of 3	0 of 3	0 of 3	0 of 3	0 of 3	0 of 27	
RIR FDI	0 of 3	0 of 3	0 of 3	0 of 3	0 of 3	0 of 3	0 of 27	
GDP d AC	0 of 1	0 of 1	0 of 1	1 of 1	0 of 1	0 of 1	1 of 6	
GDP d US	0 of 2	0 of 2	0 of 2	2 of 2	0 of 2	2 of 2	4 of 12	
SM d AC	1 of 1	0 of 1	1 of 1				2 of 3	
SM d US	0 of 2	0 of 2	2 of 2				2 of 6	
PR Dumm	15 of 15	1 of 15	0 of 15	7 of 12	1 of 12	0 of 12	24 of 81	
ICRG	2 of 5	0 of 5	3 of 5	0 of 4	2 of 4	0 of 4	7 of 27	
ICRG dUS	9 of 10	0 of 10	9 of 10	0 of 8	1 of 8	0 of 8	19 of 54	
Pull	27 of 45	1 of 45	17 of 45	10 of 36	4 of 36	2 of 36	61 of 243	

* Refers to number of times that the variable was significant and with the economic expected sign on the econometric test.

Annexed Table 6.2 A i

Debt type of Capital Flows: General Econometric Output ^{*/}

Fixed-Effects Model

Period: 1987 - 2010

Proxy / Group of Countries	As Percentage of GDP							Total Percentage of GDP and Levels
	LAC	M3LAC	BSAC	CAC	SSAC	CARC	Subtotal	
AC10y	0 of 5	0 of 5	4 of 5	0 of 4	0 of 4	0 of 4	4 of 27	9 of 54
UST10y	0 of 5	0 of 5	5 of 5	0 of 4	0 of 4	0 of 4	5 of 27	10 of 54
Fed Fun	0 of 5	0 of 5	0 of 5	0 of 4	0 of 4	0 of 4	0 of 27	0 of 54
RA vix	4 of 15	0 of 15	0 of 15	3 of 12	0 of 12	0 of 12	7 of 81	11 of 162
GL MON AC	1 of 5	0 of 5	0 of 5	0 of 4	1 of 4	1 of 4	3 of 27	7 of 54
GL MON US	0 of 10	0 of 10	0 of 10	4 of 8	0 of 8	0 of 8	4 of 54	4 of 108
Push	5 of 45	0 of 45	9 of 45	7 of 36	1 of 36	1 of 36	23 of 243	41 of 486
RIR NCI	0 of 3	0 of 3	0 of 3	0 of 3	0 of 3	0 of 3	0 of 27	0 of 54
RIR NCIS	0 of 3	0 of 3	0 of 3	0 of 3	3 of 3	3 of 3	4 of 27	12 of 54
RIR FDI	0 of 3	0 of 3	0 of 3	0 of 3	0 of 3	0 of 3	0 of 27	3 of 54
GDP d AC	0 of 1	0 of 1	0 of 1	0 of 1	1 of 1	1 of 1	1 of 6	1 of 12
GDP d US	0 of 2	0 of 2	0 of 2	0 of 2	0 of 2	0 of 2	2 of 12	2 of 24
SM d AC	1 of 1	0 of 1	1 of 1				2 of 3	5 of 6
SM d US	2 of 2	2 of 2	2 of 2				2 of 6	8 of 12
PR Dumm	15 of 15	15 of 15	15 of 15	0 of 12	12 of 12	12 of 12	57 of 81	138 of 162
ICRG	4 of 5	0 of 5	5 of 5	0 of 4	0 of 4	0 of 4	14 of 27	19 of 54
ICRG dUS	9 of 10	0 of 10	10 of 10	3 of 8	0 of 8	0 of 8	30 of 54	51 of 108
Pull	31 of 45	17 of 45	33 of 45	3 of 36	16 of 36	16 of 36	112 of 243	239 of 486
Proxy / Group of Countries	Levels							Subtotal
	LAC	M3LAC	BSAC	CAC	SSAC	CARC		
AC10y	0 of 5	0 of 5	5 of 5	0 of 4	0 of 4	0 of 4	5 of 27	
UST10y	0 of 5	0 of 5	5 of 5	0 of 4	0 of 4	0 of 4	5 of 27	
Fed Fun	0 of 5	0 of 5	0 of 5	0 of 4	0 of 4	0 of 4	0 of 27	
RA vix	0 of 15	0 of 15	0 of 15	4 of 12	0 of 12	0 of 12	4 of 81	
GL MON AC	0 of 5	0 of 5	0 of 5	0 of 4	2 of 4	2 of 4	4 of 27	
GL MON US	0 of 10	0 of 10	0 of 10	0 of 8	0 of 8	0 of 8	0 of 54	
Push	0 of 45	0 of 45	10 of 45	4 of 36	2 of 36	2 of 36	18 of 243	
RIR NCI	0 of 3	0 of 3	0 of 3	0 of 3	0 of 3	0 of 3	0 of 27	
RIR NCIS	2 of 3	0 of 3	0 of 3	0 of 3	3 of 3	3 of 3	8 of 27	
RIR FDI	1 of 3	0 of 3	0 of 3	0 of 3	1 of 3	1 of 3	3 of 27	
GDP d AC	0 of 1	0 of 1	0 of 1	0 of 1	0 of 1	0 of 1	0 of 6	
GDP d US	0 of 2	0 of 2	0 of 2	0 of 2	0 of 2	0 of 2	0 of 12	
SM d AC	1 of 1	1 of 1	1 of 1				3 of 3	
SM d US	2 of 2	2 of 2	2 of 2				6 of 6	
PR Dumm	15 of 15	15 of 15	15 of 15	12 of 12	12 of 12	12 of 12	81 of 81	
ICRG	0 of 5	1 of 5	0 of 5	4 of 4	0 of 4	0 of 4	5 of 27	
ICRG dUS	5 of 10	4 of 10	6 of 10	6 of 8	0 of 8	0 of 8	21 of 54	
Pull	26 of 45	23 of 45	24 of 45	22 of 36	16 of 36	16 of 36	127 of 243	

* Refers to number of times that the variable was significant and with the economic expected sign on the econometric test.

Annexed Table 6.2 A ii

Debt type of Capital Flows: General Econometric Output ^{*/}

Fixed-Effects Model

Period: 1991 - 2000

Proxy / Group of Countries	As Percentage of GDP						Subtotal	Total Percentage of GDP and Levels
	LAC	M3LAC	BSAC	CAC	SSAC	CARC		
AC10y	0 of 5		0 of 5	0 of 4	0 of 4	0 of 4	0 of 22	0 of 44
UST10y	0 of 5		0 of 5	0 of 4	0 of 4	0 of 4	0 of 22	0 of 44
Fed Fun	0 of 5		0 of 5	0 of 4	0 of 4	0 of 4	0 of 22	0 of 44
RA vix	0 of 15		0 of 15	0 of 12	0 of 12	0 of 12	0 of 66	0 of 132
GL MON AC	0 of 5		0 of 5	0 of 4	0 of 4	0 of 4	0 of 22	0 of 44
GL MON US	0 of 10		0 of 10	0 of 8	0 of 8	0 of 8	0 of 44	0 of 88
Push	0 of 45		0 of 45	0 of 36	0 of 36	0 of 36	0 of 198	0 of 396
RIR NCI	0 of 3		0 of 3	0 of 3	3 of 3	3 of 3	6 of 24	14 of 44
RIR NCIS	0 of 3		0 of 3	0 of 3	3 of 3	3 of 3	6 of 24	13 of 44
RIR FDI	0 of 3		0 of 3	0 of 3	3 of 3	3 of 3	6 of 24	12 of 44
GDP d AC	0 of 1		0 of 1	0 of 1	0 of 1	0 of 1	0 of 5	0 of 10
GDP d US	0 of 2		0 of 2	0 of 2	0 of 2	0 of 2	0 of 10	0 of 20
SM d AC	0 of 1		0 of 1				0 of 2	1 of 4
SM d US	0 of 2		0 of 2				0 of 4	1 of 8
PR Dumm	15 of 15		15 of 15	0 of 12	12 of 12	12 of 12	54 of 66	120 of 132
ICRG	2 of 5		1 of 5	0 of 4	0 of 4	0 of 4	3 of 22	7 of 44
ICRG dUS	5 of 10		2 of 10	0 of 8	0 of 8	0 of 8	7 of 44	15 of 88
Pull	22 of 45		18 of 45	0 of 36	21 of 36	21 of 36	82 of 198	183 of 396
Proxy / Group of Countries	Levels						Subtotal	
	LAC	M3LAC	BSAC	CAC	SSAC	CARC		
AC10y	0 of 5		0 of 5	0 of 4	0 of 4	0 of 4	0 of 22	
UST10y	0 of 5		0 of 5	0 of 4	0 of 4	0 of 4	0 of 22	
Fed Fun	0 of 5		0 of 5	0 of 4	0 of 4	0 of 4	0 of 22	
RA vix	0 of 15		0 of 15	0 of 12	0 of 12	0 of 12	0 of 66	
GL MON AC	0 of 5		0 of 5	0 of 4	0 of 4	0 of 4	0 of 22	
GL MON US	0 of 10		0 of 10	0 of 8	0 of 8	0 of 8	0 of 44	
Push	0 of 45		0 of 45	0 of 36	0 of 36	0 of 36	0 of 198	
RIR NCI	0 of 3		0 of 3	2 of 3	3 of 3	3 of 3	8 of 24	
RIR NCIS	0 of 3		0 of 3	1 of 3	3 of 3	3 of 3	7 of 24	
RIR FDI	0 of 3		0 of 3	0 of 3	3 of 3	3 of 3	6 of 24	
GDP d AC	0 of 1		0 of 1	0 of 1	0 of 1	0 of 1	0 of 5	
GDP d US	0 of 2		0 of 2	0 of 2	0 of 2	0 of 2	0 of 10	
SM d AC	0 of 1		1 of 1				1 of 2	
SM d US	0 of 2		1 of 2				1 of 4	
PR Dumm	15 of 15		15 of 15	12 of 12	12 of 12	12 of 12	66 of 66	
ICRG	4 of 5		0 of 5	0 of 4	0 of 4	0 of 4	4 of 22	
ICRG dUS	8 of 10		0 of 10	0 of 8	0 of 8	0 of 8	8 of 44	
Pull	27 of 45		17 of 45	15 of 36	21 of 36	21 of 36	101 of 198	

* Refers to number of times that the variable was significant and with the economic expected sign on the econometric test.

Annexed Table 6.2 A *iii***Debt type of Capital Flows: General Econometric Output ^{*/}****Fixed-Effects Model****Period: 2000 - 2010**

Proxy / Group of Countries	As Percentage of GDP							Total Percentage of GDP and Levels
	LAC	M3LAC	BSAC	CAC	SSAC	CARC	Subtotal	
AC10y	0 of 5	0 of 5	4 of 5	0 of 4	0 of 4	0 of 4	4 of 27	14 of 54
UST10y	0 of 5	0 of 5	0 of 5	0 of 4	0 of 4	0 of 4	0 of 27	1 of 54
Fed Fun	0 of 5	0 of 5	0 of 5	0 of 4	0 of 4	0 of 4	0 of 27	0 of 54
RA vix	0 of 15	0 of 15	0 of 15	12 of 12	0 of 12	0 of 12	12 of 81	14 of 162
GL MON AC	0 of 5	0 of 5	0 of 5	1 of 4	0 of 4	0 of 4	1 of 27	1 of 54
GL MON US	0 of 10	0 of 10	0 of 10	0 of 8	0 of 8	0 of 8	0 of 54	0 of 108
Push	0 of 45	0 of 45	4 of 45	13 of 36	0 of 36	0 of 36	17 of 243	30 of 486
RIR NCI	0 of 3	0 of 3	0 of 3	0 of 3	0 of 3	0 of 3	0 of 27	1 of 54
RIR NCIS	0 of 3	0 of 3	0 of 3	0 of 3	1 of 3	1 of 3	2 of 27	2 of 54
RIR FDI	0 of 3	0 of 3	0 of 3	0 of 3	1 of 3	1 of 3	2 of 27	4 of 54
GDP d AC	0 of 1	0 of 1	0 of 1	0 of 1	0 of 1	0 of 1	0 of 6	0 of 12
GDP d US	0 of 2	0 of 2	0 of 2	0 of 2	0 of 2	0 of 2	0 of 12	0 of 24
SM d AC	1 of 1	0 of 1	1 of 1				2 of 3	5 of 6
SM d US	2 of 2	0 of 2	0 of 2				2 of 6	7 of 12
PR Dumm	15 of 15	4 of 15	11 of 15	2 of 12	12 of 12	12 of 12	56 of 81	117 of 162
ICRG	5 of 5	3 of 5	0 of 5	0 of 4	0 of 4	0 of 4	8 of 27	15 of 54
ICRG dUS	8 of 10	0 of 10	1 of 10	0 of 8	2 of 8	2 of 8	13 of 54	26 of 108
Pull	31 of 45	7 of 45	13 of 45	2 of 36	16 of 36	16 of 36	85 of 243	177 of 486
Proxy / Group of Countries	Levels							Subtotal
	LAC	M3LAC	BSAC	CAC	SSAC	CARC		
AC10y	4 of 5	2 of 5	4 of 5	0 of 4	0 of 4	0 of 4	10 of 27	
UST10y	0 of 5	0 of 5	1 of 5	0 of 4	0 of 4	0 of 4	1 of 27	
Fed Fun	0 of 5	0 of 5	0 of 5	0 of 4	0 of 4	0 of 4	0 of 27	
RA vix	0 of 15	0 of 15	0 of 15	2 of 12	0 of 12	0 of 12	2 of 81	
GL MON AC	0 of 5	0 of 5	0 of 5	0 of 4	0 of 4	0 of 4	0 of 27	
GL MON US	0 of 10	0 of 10	0 of 10	0 of 8	0 of 8	0 of 8	0 of 54	
Push	4 of 45	2 of 45	5 of 45	2 of 36	0 of 36	0 of 36	13 of 243	
RIR NCI	0 of 3	1 of 3	0 of 3	0 of 3	0 of 3	0 of 3	1 of 27	
RIR NCIS	0 of 3	0 of 3	0 of 3	0 of 3	0 of 3	0 of 3	0 of 27	
RIR FDI	0 of 3	0 of 3	0 of 3	0 of 3	1 of 3	1 of 3	2 of 27	
GDP d AC	0 of 1	0 of 1	0 of 1	0 of 1	0 of 1	0 of 1	0 of 6	
GDP d US	0 of 2	0 of 2	0 of 2	0 of 2	0 of 2	0 of 2	0 of 12	
SM d AC	1 of 1	1 of 1	1 of 1				3 of 3	
SM d US	2 of 2	2 of 2	1 of 2				5 of 6	
PR Dumm	15 of 15	13 of 15	1 of 15	8 of 12	12 of 12	12 of 12	61 of 81	
ICRG	4 of 5	3 of 5	0 of 5	0 of 4	0 of 4	0 of 4	7 of 27	
ICRG dUS	5 of 10	3 of 10	3 of 10	0 of 8	1 of 8	1 of 8	13 of 54	
Pull	27 of 45	23 of 45	6 of 45	8 of 36	14 of 36	14 of 36	92 of 243	

* Refers to number of times that the variable was significant and with the economic expected sign on the econometric test.

Annexed Table 6.3 A i

Firm Related type of Capital Flows: General Econometric Output ^{*/}
Fixed-Effects Model
Period: 1987 - 2010

Proxy / Group of Countries	As Percentage of GDP							Total Percentage of GDP and Levels
	LAC	M3LAC	BSAC	CAC	SSAC	CARC	Subtotal	
AC10y	4 of 5	0 of 5	0 of 5	4 of 4	0 of 4	0 of 4	8 of 27	21 of 54
UST10y	0 of 5	0 of 5	0 of 5	0 of 4	0 of 4	0 of 4	0 of 27	5 of 54
Fed Fun	0 of 5	0 of 5	0 of 5	0 of 4	0 of 4	0 of 4	0 of 27	0 of 54
RA vix	0 of 15	0 of 15	0 of 15	8 of 12	0 of 12	0 of 12	8 of 81	8 of 162
GL MON AC	4 of 5	0 of 5	0 of 5	4 of 4	0 of 4	0 of 4	8 of 27	12 of 54
GL MON US	1 of 10	0 of 10	0 of 10	4 of 8	0 of 8	0 of 8	5 of 54	5 of 108
Push	9 of 45	0 of 45	0 of 45	20 of 36	0 of 36	0 of 36	29 of 243	51 of 486
RIR NCI	0 of 3	0 of 3	0 of 3	0 of 3	0 of 3	0 of 3	0 of 27	0 of 54
RIR NCIS	0 of 3	0 of 3	0 of 3	1 of 3	0 of 3	0 of 3	1 of 27	1 of 54
RIR FDI	0 of 3	2 of 3	0 of 3	0 of 3	0 of 3	0 of 3	2 of 27	5 of 54
GDP d AC	1 of 1	1 of 1	0 of 1	1 of 1	0 of 1	0 of 1	3 of 6	4 of 12
GDP d US	2 of 2	2 of 2	0 of 2	0 of 2	0 of 2	0 of 2	4 of 12	6 of 24
SM d AC	0 of 1	0 of 1	0 of 1				0 of 3	1 of 6
SM d US	0 of 2	0 of 2	0 of 2				0 of 6	0 of 12
PR Dumm	15 of 15	12 of 15	15 of 15	0 of 12	12 of 12	12 of 12	66 of 81	125 of 162
ICRG	5 of 5	2 of 5	0 of 5	0 of 4	1 of 4	1 of 4	9 of 27	9 of 54
ICRG dUS	10 of 10	1 of 10	8 of 10	4 of 8	1 of 8	1 of 8	25 of 54	41 of 108
Pull	33 of 45	20 of 45	23 of 45	6 of 36	14 of 36	14 of 36	110 of 243	192 of 486
Proxy / Group of Countries	Levels							Subtotal
	LAC	M3LAC	BSAC	CAC	SSAC	CARC		
AC10y	5 of 5	4 of 5	0 of 5	4 of 4	0 of 4	0 of 4	13 of 27	
UST10y	1 of 5	0 of 5	0 of 5	4 of 4	0 of 4	0 of 4	5 of 27	
Fed Fun	0 of 5	0 of 5	0 of 5	0 of 4	0 of 4	0 of 4	0 of 27	
RA vix	0 of 15	0 of 15	0 of 15	0 of 12	0 of 12	0 of 12	0 of 81	
GL MON AC	0 of 5	0 of 5	0 of 5	4 of 4	0 of 4	0 of 4	4 of 27	
GL MON US	0 of 10	0 of 10	0 of 10	0 of 8	0 of 8	0 of 8	0 of 54	
Push	6 of 45	4 of 45	0 of 45	12 of 36	0 of 36	0 of 36	22 of 243	
RIR NCI	0 of 3	0 of 3	0 of 3	0 of 3	0 of 3	0 of 3	0 of 27	
RIR NCIS	0 of 3	0 of 3	0 of 3	0 of 3	0 of 3	0 of 3	0 of 27	
RIR FDI	0 of 3	3 of 3	0 of 3	0 of 3	0 of 3	0 of 3	3 of 27	
GDP d AC	0 of 1	0 of 1	0 of 1	1 of 1	0 of 1	0 of 1	1 of 6	
GDP d US	0 of 2	0 of 2	0 of 2	2 of 2	0 of 2	0 of 2	2 of 12	
SM d AC	0 of 1	0 of 1	1 of 1				1 of 3	
SM d US	0 of 2	0 of 2	0 of 2				0 of 6	
PR Dumm	15 of 15	2 of 15	6 of 15	12 of 12	12 of 12	12 of 12	59 of 81	
ICRG	0 of 5	0 of 5	0 of 5	0 of 4	0 of 4	0 of 4	0 of 27	
ICRG dUS	5 of 10	0 of 10	7 of 10	4 of 8	0 of 8	0 of 8	16 of 54	
Pull	20 of 45	5 of 45	14 of 45	19 of 36	12 of 36	12 of 36	82 of 243	

* Refers to number of times that the variable was significant and with the economic expected sign on the econometric test.

Annexed Table 6.3 A ii

Firm Related type of Capital Flows: General Econometric Output ^{*/}
Fixed-Effects Model
Period: 1991 - 2000

Proxy / Group of Countries	As Percentage of GDP						Subtotal	Total Percentage of GDP and Levels
	LAC	M3LAC	BSAC	CAC	SSAC	CARC		
AC10y	1 of 5		0 of 5	2 of 4	0 of 4	0 of 4	3 of 22	10 of 44
UST10y	0 of 5		0 of 5	0 of 4	0 of 4	0 of 4	0 of 22	4 of 44
Fed Fun	0 of 5		0 of 5	0 of 4	0 of 4	0 of 4	0 of 22	0 of 44
RA vix	0 of 15		0 of 15	0 of 12	0 of 12	0 of 12	0 of 66	0 of 132
GL MON AC	0 of 5		0 of 5	0 of 4	1 of 4	1 of 4	2 of 22	2 of 44
GL MON US	0 of 10		0 of 10	0 of 8	2 of 8	2 of 8	4 of 44	12 of 88
Push	1 of 45		0 of 45	2 of 36	3 of 36	3 of 36	9 of 198	28 of 396
RIR NCI	0 of 3		0 of 3	3 of 3	0 of 3	0 of 3	3 of 24	3 of 44
RIR NCIS	0 of 3		0 of 3	2 of 3	0 of 3	0 of 3	2 of 24	2 of 44
RIR FDI	0 of 3		0 of 3	0 of 3	0 of 3	0 of 3	0 of 24	0 of 44
GDP d AC	1 of 1		1 of 1	0 of 1	0 of 1	0 of 1	2 of 5	2 of 10
GDP d US	2 of 2		0 of 2	0 of 2	0 of 2	0 of 2	2 of 10	2 of 20
SM d AC	1 of 1		0 of 1				1 of 2	1 of 4
SM d US	2 of 2		0 of 2				2 of 4	2 of 8
PR Dumm	15 of 15		15 of 15	11 of 12	12 of 12	12 of 12	65 of 66	120 of 132
ICRG	0 of 5		0 of 5	0 of 4	1 of 4	0 of 4	1 of 22	3 of 44
ICRG dUS	0 of 10		0 of 10	0 of 8	0 of 8	1 of 8	1 of 44	3 of 88
Pull	21 of 45		16 of 45	16 of 36	13 of 36	13 of 36	79 of 198	138 of 396
Proxy / Group of Countries	Levels						Subtotal	
	LAC	M3LAC	BSAC	CAC	SSAC	CARC		
AC10y	0 of 5		3 of 5	2 of 4	1 of 4	1 of 4	7 of 22	
UST10y	0 of 5		0 of 5	0 of 4	2 of 4	2 of 4	4 of 22	
Fed Fun	0 of 5		0 of 5	0 of 4	0 of 4	0 of 4	0 of 22	
RA vix	0 of 15		0 of 15	0 of 12	0 of 12	0 of 12	0 of 66	
GL MON AC	0 of 5		0 of 5	0 of 4	0 of 4	0 of 4	0 of 22	
GL MON US	0 of 10		0 of 10	0 of 8	4 of 8	4 of 8	8 of 44	
Push	0 of 45		3 of 45	2 of 36	7 of 36	7 of 36	19 of 198	
RIR NCI	0 of 3		0 of 3	0 of 3	0 of 3	0 of 3	0 of 24	
RIR NCIS	0 of 3		0 of 3	0 of 3	0 of 3	0 of 3	0 of 24	
RIR FDI	0 of 3		0 of 3	0 of 3	0 of 3	0 of 3	0 of 24	
GDP d AC	0 of 1		0 of 1	0 of 1	0 of 1	0 of 1	0 of 5	
GDP d US	0 of 2		0 of 2	0 of 2	0 of 2	0 of 2	0 of 10	
SM d AC	0 of 1		0 of 1				0 of 2	
SM d US	0 of 2		0 of 2				0 of 4	
PR Dumm	15 of 15		15 of 15	12 of 12	6 of 12	7 of 12	55 of 66	
ICRG	0 of 5		0 of 5	0 of 4	1 of 4	1 of 4	2 of 22	
ICRG dUS	0 of 10		0 of 10	0 of 8	1 of 8	1 of 8	2 of 44	
Pull	15 of 45		15 of 45	12 of 36	8 of 36	9 of 36	59 of 198	

* Refers to number of times that the variable was significant and with the economic expected sign on the econometric test.

Annexed Table 6.3 A *iii*

Firm Related type of Capital Flows: General Econometric Output ^{*/}
Fixed-Effects Model
Period: 2000 - 2010

Proxy / Group of Countries	As Percentage of GDP							Total Percentage of GDP and Levels
	LAC	M3LAC	BSAC	CAC	SSAC	CARC	Subtotal	
AC10y	0 of 5	0 of 5	0 of 5	0 of 4	0 of 4	0 of 4	0 of 27	9 of 54
UST10y	0 of 5	0 of 5	0 of 5	0 of 4	0 of 4	0 of 4	0 of 27	2 of 54
Fed Fun	0 of 5	0 of 5	0 of 5	0 of 4	0 of 4	0 of 4	0 of 27	0 of 54
RA vix	0 of 15	0 of 15	0 of 15	4 of 12	0 of 12	0 of 12	4 of 81	6 of 162
GL MON AC	3 of 5	0 of 5	0 of 5	4 of 4	0 of 4	0 of 4	7 of 27	9 of 54
GL MON US	0 of 10	0 of 10	0 of 10	0 of 8	0 of 8	0 of 8	0 of 54	0 of 108
Push	3 of 45	0 of 45	0 of 45	8 of 36	0 of 36	0 of 36	11 of 243	26 of 486
RIR NCI	0 of 3	0 of 3	2 of 3	0 of 3	0 of 3	0 of 3	2 of 27	5 of 54
RIR NCIS	0 of 3	0 of 3	0 of 3	0 of 3	0 of 3	0 of 3	0 of 27	0 of 54
RIR FDI	0 of 3	0 of 3	0 of 3	0 of 3	0 of 3	0 of 3	0 of 27	0 of 54
GDP d AC	1 of 1	1 of 1	0 of 1	0 of 1	1 of 1	1 of 1	4 of 6	5 of 12
GDP d US	2 of 2	2 of 2	0 of 2	0 of 2	1 of 2	1 of 2	6 of 12	8 of 24
SM d AC	0 of 1	0 of 1	0 of 1				0 of 3	1 of 6
SM d US	0 of 2	0 of 2	0 of 2				0 of 6	0 of 12
PR Dumm	10 of 15	0 of 15	0 of 15	1 of 12	12 of 12	11 of 12	34 of 81	48 of 162
ICRG	3 of 5	1 of 5	3 of 5	0 of 4	1 of 4	1 of 4	9 of 27	15 of 54
ICRG dUS	8 of 10	4 of 10	4 of 10	1 of 8	0 of 8	1 of 8	18 of 54	36 of 108
Pull	24 of 45	8 of 45	9 of 45	2 of 36	15 of 36	15 of 36	73 of 243	118 of 486
Proxy / Group of Countries	Levels							Subtotal
	LAC	M3LAC	BSAC	CAC	SSAC	CARC		
AC10y	4 of 5	0 of 5	2 of 5	3 of 4	0 of 4	0 of 4	9 of 27	
UST10y	0 of 5	0 of 5	0 of 5	2 of 4	0 of 4	0 of 4	2 of 27	
Fed Fun	0 of 5	0 of 5	0 of 5	0 of 4	0 of 4	0 of 4	0 of 27	
RA vix	0 of 15	0 of 15	0 of 15	2 of 12	0 of 12	0 of 12	2 of 81	
GL MON AC	0 of 5	0 of 5	0 of 5	2 of 4	0 of 4	0 of 4	2 of 27	
GL MON US	0 of 10	0 of 10	0 of 10	0 of 8	0 of 8	0 of 8	0 of 54	
Push	4 of 45	0 of 45	2 of 45	9 of 36	0 of 36	0 of 36	15 of 243	
RIR NCI	0 of 3	0 of 3	3 of 3	0 of 3	0 of 3	0 of 3	3 of 27	
RIR NCIS	0 of 3	0 of 3	0 of 3	0 of 3	0 of 3	0 of 3	0 of 27	
RIR FDI	0 of 3	0 of 3	0 of 3	0 of 3	0 of 3	0 of 3	0 of 27	
GDP d AC	0 of 1	0 of 1	0 of 1	1 of 1	0 of 1	0 of 1	1 of 6	
GDP d US	0 of 2	0 of 2	0 of 2	2 of 2	0 of 2	0 of 2	2 of 12	
SM d AC	0 of 1	0 of 1	1 of 1				1 of 3	
SM d US	0 of 2	0 of 2	0 of 2				0 of 6	
PR Dumm	0 of 15	0 of 15	0 of 15	6 of 12	4 of 12	4 of 12	14 of 81	
ICRG	0 of 5	0 of 5	4 of 5	0 of 4	1 of 4	1 of 4	6 of 27	
ICRG dUS	9 of 10	0 of 10	9 of 10	0 of 8	0 of 8	0 of 8	18 of 54	
Pull	9 of 45	0 of 45	17 of 45	9 of 36	5 of 36	5 of 36	45 of 243	

* Refers to number of times that the variable was significant and with the economic expected sign on the econometric test.