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The FTAA and the Location of FDI

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The FTAA and the Location of FDI

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Abstract[*]

The role of regional integration agreements as a determinant of the location of FDI has become an increasingly relevant issue for emerging economies. In Latin America, the largest effects are likely to be associated with the Free Trade Area of the Americas (FTAA). In this regard, there are a number of highly relevant questions: For instance, what effect will the FTAA have on FDI from the US and Canada to Latin American countries? How will it affect FDI from the rest of the world? What are the implications for a country such as Mexico, whose preferential access to the US may be diluted? Should we expect to see winners and losers, and if so, what determines whether a particular country wins or loses? To address these questions, in this paper we look at the impact of regional integration on FDI, and attempt to derive conclusions regarding the likely impact of the FTAA on countries in Latin America.

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Introduction

Over the last couple of decades, we have seen an increase in the number and depth of regional integration agreements (RIAs) around the world. The proliferation of trade agreements has been quite widespread. The former European Economic Community has evolved into a single market, the European Union (EU), and most of its members have recently adopted a common currency. Other European countries have formed free trade areas with the EU or are presently in line for EU accession. Likewise, several countries in Southeast Asia have agreed to form the ASEAN Free Trade Area.

The Americas have been no exception to this trend. While a number of regional integration agreements have been either created (e.g., Mercosur, NAFTA) or strengthened (Comunidad Andina) in the 1990s, some countries such as Mexico and Chile have been actively forming bilateral trade agreements with countries both in the continent and in other regions. Most importantly, the Free Trade Area of the Americas, currently under negotiation, is supposed to create a free trade area from Alaska to Tierra del Fuego by the year 2005.

At the same time, the world has been experiencing a dramatic surge in flows of Foreign Direct Investment (FDI). During the last two decades, while world trade has increased by a factor of 2, flows of FDI have increased by a factor of 10! The surge in FDI involves flows toward both developed and developing countries. In fact, foreign direct investment has recently become, by a large margin, the main source of foreign financing for emerging markets, and for Latin America in particular.

In light of these developments, the role of regional integration agreements as a determinant of the location of FDI has become an increasingly relevant issue for emerging economies. While the concerns regarding the impact of RIAs on FDI for countries in Latin America may be related to a number of RIA initiatives of different types (sub-regional South-South agreements, agreements with the EU, etc.), the largest effects are likely to be associated with the FTAA. In this regard, there are a number of highly relevant questions: For instance, what effect will the FTAA have on FDI from the US and Canada to Latin American countries? How will it affect FDI from the rest of the world? What are the implications for a country such as Mexico, whose preferential access to the US may be diluted? Should we expect to see winners and losers, and if so, what determines whether a particular country wins or loses? To address these questions, in this paper we look at the impact of regional integration on FDI and

attempt to derive conclusions regarding the likely impact of the FTAA on countries in Latin America.

A difficulty in assessing the role of regional integration agreements on FDI is that there are many channels through which RIAs could potentially have an impact on the location of FDI. The impact of regional integration, for example, depends on whether or not the source country is a member of the RIA. Thus NAFTA has affected flows of FDI to Mexico from U.S. sources differently than it has affected flows to Mexico from German sources. The same is true of whether or not the host country is a member of the RIA. NAFTA has affected FDI flows from the U.S. to Mexican hosts differently than it has affected flows from the U.S. to countries in Central America, which may compete with Mexico as potential FDI sites. In addition, the impact of RIAs will likely be a function of specific characteristics of the host countries that make them relatively more or less attractive than their RIA partners as a potential location of foreign investment.

Another important consideration that will affect the impact of RIAs on the location of foreign investment is the predominant driver of FDI. For instance, a firm may invest abroad in order to serve, through sales of a foreign affiliate, a protected market that it could otherwise serve only at a high cost through trade. In this case, integration could make the market less protected and thus weaken the firm's motive for this type of FDI, which is known in the literature as "horizontal." Alternatively, the firm may invest abroad in order to exploit different countries' comparative advantages for the various stages of production of a good. After some stages the good will cross national boundaries and incur tariff costs; integration reduces such costs and so strengthens the firm's motive for "vertical" FDI.[1] Depending on the motive for foreign investment, therefore, the relaxation of trade barriers implicit in an RIA may have completely different implications for the location of FDI. For this reason, it is worthwhile to discuss in some more detail the nature of horizontal and vertical FDI.

Vertical and Horizontal FDI

Models of vertical FDI typically feature a firm with a corporate facility (which may produce management services and R&D) and a production facility; the two are presumed to be

[1] For a good discussion of the horizontal and vertical models, see Markusen and Maskus (2001).

geographically separable.[2] As the corporate facility and the production facility require a different mix of factors of production, firms localize each "stage" of production to take advantage of international differences in factor prices. The production facility produces for the markets in both the host country and the source country. An implication of the model is that no FDI would be observed between countries with similar factor endowments: such countries would have similar factor prices, eliminating the advantage of geographically separating firms' corporate and production stages.

Models of horizontal FDI typically feature firms with multiple production facilities producing a homogeneous good. One of these facilities is located together with the company's headquarters.[3] Each production facility supplies its domestic market. A key assumption in the horizontal model is the presence of firm-level fixed costs, arising from the necessity of one, and only one, corporate facility per firm. Firm-level fixed costs imply economies of scale that give multinational firms an advantage over domestic firms.

The volume of horizontal FDI depends on the interplay between firm-level fixed costs, plant-level fixed costs, and trade costs.[4] In the absence of trade costs there would be no reason for multinational production: firms would concentrate their production in a single facility at a single location, incurring plant-level fixed costs only there and serving other markets through trade. As trade costs increase, so does multinational production. The presence of firm-level fixed costs, coupled with high trade costs, implies that the least costly way to serve local markets is to operate local facilities as branches of a multinational firm. In this sense one can think of horizontal multinational activity as a "tariff-jumping" strategy.

As expected, the empirical implications of the horizontal model of multinational activity differ from those of the vertical model. Unlike vertical FDI, horizontal FDI is less likely to be found among countries with very different factor proportions. Dissimilar factor proportions imply dissimilar factor prices, which induce firms to produce only in the location where the factor used intensively has the lowest price, and serve the other market through trade. In addition, horizontal FDI is discouraged by differences in country size. With a large country and a small country as potential plant locations, a firm is likely to produce only in the country with the

[2] Helpman (1984) and Helpman and Krugman (1985) are early seminal models of vertical FDI.
[3] For models of the horizontal variety, see Markusen (1984), and Markusen and Venables (1998), among others.
[4] Trade costs include both trade barriers and other transaction costs associated with trade, such as transportation costs.

large home market and serve the other country through trade, incurring trade costs on a small trade volume, but foregoing the cost of establishing a second plant.

The implications of the horizontal and vertical FDI models seem to suggest that direct investment flows from North to South—that is, between countries whose sizes and factor proportions differ substantially—are more likely of the vertical kind, while North-North and South-South flows are more likely to be of the horizontal kind. But the matter is not so clear-cut. First, countries in the North tend to have much lower trade barriers, at least in the manufacturing sector. As discussed above, trade barriers, both natural and policy-related, are a key ingredient of horizontal FDI. The general absence of high trade barriers among developed countries weakens the likelihood that North-North FDI is horizontal. If the tariffs to be jumped are small, there is little point in tariff jumping.[5]

Second, horizontal FDI can arise between Northern and Southern countries, even when their factor endowments are very different, as long as trade barriers are high enough. The automobile industry in Latin American countries during the period of import substitution (or even today, within the protected environment of Mercosur) is an example of horizontal FDI. Finally, a large portion of FDI among countries in the North may not be placed squarely within either of the two categories discussed by Markusen and Maskus (2001), but instead belong to a different class, one in which firms have multiple plants, as in the horizontal model, but produce different varieties of a final good, both for export and for domestic consumption, rather than a homogeneous good.[6] Thus, unlike the homogeneous good horizontal variety, this type of FDI does not substitute trade.

Integration and FDI: What Does the Empirical Literature Say?

Existing data on FDI does not classify it according to its vertical or horizontal nature. It is not straightforward to identify the motives for investment with any precision. To a certain extent, however, the nature of FDI flows between a pair of countries may be inferred from some characteristics of the source and host countries involved: whether the host country's economy is

[5] The importance of tariff jumping as a motive for FDI is contested. Caves (1996, p. 55) writes that "historical evidence strongly confirms the effect of a tariff to lure the MNE's production behind the barrier"; yet Markusen (1997, p. 2) argues that "stylized facts suggest that … direct investment is not caused primarily by trade-barrier-avoidance."

[6] Helpman (1985) has modeled multinationals that produce different varieties of a final good in different locations. Helpman called this FDI horizontal, a label criticized by Markusen and Maskus (2001).

open or closed, whether the source and host countries are rich or poor, or similar or dissimilar in resources. Most existing studies of the impact of RIAs on FDI focus on the latter two variables: the countries' levels of development and the similarity of their resource endowments. The relation of regional integration to FDI is thus examined most often by segregating the data into cases of North-North integration (between highly developed countries with resource endowments abundant in capital and skills), South-South integration (between less developed countries with endowments abundant in labor), and North-South integration (between countries of dissimilar levels of development and dissimilar endowments). In each of these cases, studies typically stress the difference between the impact on FDI between RIA partners, and that on FDI inflows from outside sources.

Among recent studies of North-North agreements, Dunning (2000) finds that since Europe's 1985 launch of its Internal Market Program, both intra-EC and extra-EC FDI have been stimulated, particularly the latter; FDI has grown the most in knowledge-intensive activities; and the growth of FDI has been complementary to the growth of trade. Of South-South agreements, Chudnovsky and López (2001) find that FDI in Mercosur has been largely from extra-regional sources; it has taken the form primarily of mergers and acquisitions; it has displaced domestic investment; and has been directed towards supplying the internal market. Of North-South agreements, Waldkirch (2001) finds that NAFTA has substantially increased FDI in Mexico, mostly from intra-regional partners Canada and the United States, and infers that the agreement's impetus to vertical integration is the likely explanation.

Blomström and Kokko (1997) take a similar approach, although they group three case studies together to work towards a more comprehensive analysis. The Canada-U.S. Free Trade Agreement, their example of a North-North RIA, reduced the relative importance of intra-regional FDI for both countries but increased extra-regional FDI to Canada. In neither case was the effect dramatic, though, a fact attributed to the lack of major changes in economic policy resulting from the agreement.[7] The South-South RIA, Mercosur, witnessed a substantial expansion of extra-regional FDI, though macroeconomic stability is found to be a more important determinant of the inflows than the RIA. The North-South RIA, NAFTA, is found to have witnessed a dramatic increase in FDI inflows, particularly extra-regional FDI to Mexico,

[7] Tariffs between US and Canada were already low at the time the agreement was signed.

due to a combination of broader policy reforms undertaken contemporaneously in Mexico as well as Mexico's proximity to the U.S. market and its abundance of labor.[8]

The case studies methodology has the advantage that one can take into account the institutional detail of the countries under study when reaching conclusions about the impact of integration on FDI. At the same time, however, it illustrates the difficulty of drawing strong conclusions when so many other variables complicate the particular cases. In Mercosur, for example, it is hard to disentangle the effect of the RIA from that of macroeconomic stabilization, which occurred at approximately the same time. In Mexico, the effect of NAFTA is hard to distinguish from that of other changes in FDI-related policies that took place contemporaneously. Moreover, the particular circumstances of each of the cases studied make it difficult to extrapolate the findings to other potential RIAs, particularly when these do not share the same context. To what degree was FDI influenced by the unique circumstances of each set of countries and to what degree was it driven by their RIA? Case studies, however well informed, cannot provide definitive answers.[9]

Another way to proceed, which provides a nice complement to the case studies, is to control for some of those circumstances within a large sample of countries, all of which are sources or hosts of FDI, and most of which are parties to RIAs. There are enough RIAs in existence, and enough bilateral FDI data, to try to sort out quantitatively the effects of an RIA from the effects of other circumstances. In a companion paper, Levy Yeyati, Stein and Daude (2002) have studied the relationship between integration and FDI using bilateral data on FDI stocks for a large sample of countries. In the rest of the paper, we will discuss their results, and use them to draw conclusions regarding the potential impact of the FTAA on the location of foreign direct investment. Before presenting the evidence, however, it is useful to discuss briefly the different channels through which RIAs may affect FDI.

Effects on FDI from insiders. If the source and host countries become members of the same RIA, the impact on bilateral FDI is theoretically ambiguous and depends on the kind of FDI that predominates. If FDI is horizontal, with tariff jumping as its motive, the reduction in trade

[8] Blomström and Kokko's study emphasizes the increase of extra-regional FDI flows to Mexico, while Waldkirch's emphasizes intra-regional flows to Mexico, because of changes in the data found in the time between their studies (1997 and 2001, respectively).

[9] The problem is one of too many variables that may matter, but too few observations from which to make inferences.

barriers implicit in the RIA will probably lead to a reduction in FDI, as trade and foreign investment are alternative ways to serve the domestic market. If FDI is vertical, with integration of stages of production as its motive, the RIA should increase FDI, as transactions costs to engage in vertical integration across international borders are reduced. The net effect may depend, among other things, on the size of trade barriers, as well as the similarities in factor proportions, since these two factors affect the vertical vs. horizontal composition of FDI. Note that, regardless of its impact on total FDI, an RIA will likely change the composition of FDI from horizontal to vertical.[10]

Extended market effect. The entrance of a country into an RIA may make it a more enticing host of FDI in activities subject to economies of scale through an extended market effect, particularly if the FDI is horizontal. Mercosur, for example, may have become a more attractive market for outside sources after the formation of the Customs Union, making it more worthwhile for foreign firms to "jump" the common external tariff instead of supplying each individual country through trade. The extension of the market due to a RIA may encourage vertical FDI as well, since it reduces the costs of locating different stages of production in different countries within the region. In fact, this effect can also be present for the case of FDI from source countries within the same RIA. Thus, whatever the motive for FDI, the extended market effect of a host country's entry into an RIA should result in more FDI for the RIA as a whole.

Yet within the RIA there may be winners and losers. Notwithstanding the increased FDI brought to the region as a whole, there may be a redistributive effect of FDI within the region. Before the RIA is launched, for instance, a multinational corporation might have horizontal FDI in each of the countries in the region. When barriers to trade within the region are eliminated, the firm may choose to concentrate production in a single country (perhaps the one that offers a more attractive overall package) and supply the rest of the countries through trade.[11]

[10] An RIA can also increase bilateral FDI, regardless of its motives, if it includes investment provisions to liberalize capital flows, homogenize legal norms, and set up institutions to handle cross-border disputes.

[11] One of the factors that may explain who loses and who wins in this game is country size. If there is some uncertainty regarding the future of the RIA, firms may not want to be trapped in a small country. The biggest losers could be medium-sized countries, since small countries are more likely to be supplied by trade rather than FDI with or without the RIA. If the RIA is credible, central location may be a more important factor. Beyond market size and location, countries that offer a more attractive overall package for foreign investors due to the quality of their institutions, the quality of their labor force, the development of their infrastructure, or their tax treatment of multinationals, will be more likely to be winners in this redistributive game.

Diversion/dilution effect. When a source country enters into or expands a RIA, host countries may experience investment diversion or dilution. If membership in a regional integration agreement makes each member a more attractive host of FDI—as it does in the vertical model—then the RIA will make non-members appear relatively less attractive. We call this effect *FDI diversion*, in analogy to Viner's (1950) classic trade diversion concept: FDI from a source to non-partners may decline as the source enters a RIA.[12]

A similar effect may be experienced by members of an RIA when the agreement is enlarged. Take, for instance, the potential effects of the FTAA on FDI flows from the U.S. to Mexico. To the extent that U.S. investment in Mexico is intended to exploit some locational advantages of Mexico, then as the preferential access of Mexico to the U.S. is *diluted* by the FTAA, part of the FDI may be relocated to members of the larger agreement that have similar advantages.[13]

Empirical Results

In order to look at the impact of RIAs on FDI, we used data on bilateral FDI stocks from the OECD *International Direct Investment Statistics*. The dataset covers FDI from 20 source countries, all of them from the OECD, to 60 host countries, from 1982 through 1999. One shortcoming of this data is that it does not cover FDI between developing countries. Yet, it is the most complete source available for bilateral FDI, which is a key ingredient for studying the effects of integration on foreign investment.

The methodology used in Levy Yeyati, Stein and Daude (2002) is loosely based on the gravity model, which has been employed widely in the literature on the determinants of bilateral trade, and has more recently been used to study the determinants of FDI.[14] The traditional gravity

[12] As in Viner's trade diversion, the formation of a RIA may divert FDI from the most efficient location to a partner. For example, a US firm may locate in Mexico, following NAFTA, the production of an intermediate input it may have otherwise located in Costa Rica, in the absence of the preferential access enjoyed by Mexico. What we call investment diversion in this paper is the loss suffered by Costa Rica, as well as other countries, as a result of the creation of NAFTA.

[13] Dilution is conceptually different from diversion: going back to the example of NAFTA and US FDI to Mexico and Costa Rica, dilution in a way is the result of leveling the playing field, at least for a certain group of countries. In this case, with the FTAA, Costa Rica and Mexico will now be playing under the same rules, and FDI will go to the most efficient location within the region.

[14] See Eaton and Tamura (1994), Frankel and Wei (1997), Wei (1997, 2000), Blonigen and Davis (2000), Stein and Daude (2001) and Levy Yeyati, Panizza and Stein (2001). In its simplest formulation it the gravity model presumes that bilateral trade flows (or bilateral FDI stocks) are related positively to the product of the GDPs of both

model is modified in a number of ways, by including: i) country pair fixed effects, to control for all the characteristics of country pairs that are invariant over time, such as distance, common border, similarity of factor proportions, as well as other variables which may be relevant for FDI location but which may be difficult to observe (including these pair fixed effects allows us to focus on the effects of changes in RIAs on the bilateral FDI within country pairs, leaving out the cross-sectional dimension); ii) year dummies to control for the spectacular increase in FDI over time; and iii) a number of variables associated with the effects of regional integration.

The first regional integration variable is *Same RIA*, a dummy variable that indicates whether the source and the host countries belong to the same regional integration agreement.[15] This variable captures a combination of channels: tariff-jumping, international vertical integration, and the potential effect of investment provisions on FDI, and the expected impact is ambiguous. A second integration variable is *Extended Market Host*, which captures the size of the extended market of the host country.[16] For example, for the case of Brazil in the years before Mercosur, *Extended Market Host* is the log of Brazil's GDP at the time; for the years after Mercosur, it takes the value of the log of the combined GDP of the four Mercosur countries. Following the previous discussion, we expect an increase in the size of the extended market to have positive effects on FDI for the RIA as a whole. Finally, a third integration variable is *Extended Market Source,* which captures FDI diversion/dilution effects. We expect its coefficient to have a negative sign, suggesting that FDI to a host country diminishes when firms in the source country have other FTA partners in which to locate their investments.

The results of the regressions are presented in Tables 1 and 2. Column 1 in Table 1 presents the basic results, where the dependent variable is log (1+FDI).[17] The coefficient for *Same RIA* is positive and highly significant, suggesting that on average, any potential loss of FDI due to the tariff-jumping argument associated with horizontal FDI is more than offset by other

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economies and negatively to the distance between them. Other variables typically added are whether the countries have a common border, common language, colonial links, etc.

[15] The dummy takes a value of 1 for the case of free trade areas, customs unions or single markets, but not when countries share membership in preferential trade agreements, in which trade barriers among members are reduced but not eliminated. The source for this variable is Frankel, Stein and Wei (1997). See Appendix for list of RIAs considered in the paper.

[16] It is defined as the log of the joint GDP of all the countries to which the host has tariff-free access due to common membership in a FTA (we include the host's own GDP as well).

[17] The reason to add 1 to FDI before taking logs is to avoid losing the observations with zero FDI, which represent nearly 40 percent of the sample, and provide useful information. For a discussion of the methodological issues associated to the treatment of the observations with zero FDI, see Levy Yeyati, Stein and Daude (2002).

effects (vertical integration, investment provisions) that operate in the opposite direction. The size of the coefficient suggests that a source country will increase FDI to a host country by around 27 percent once they become partners in a trade agreement.[18] The host and source extended market variables are also significant, and have the expected signs, positive for host and negative for source. The coefficient for extended market host, which can be interpreted as an elasticity, suggests that a one percent increase in the size of the extended market (after controlling for the host country's GDP) increases FDI from all sources by 0.10 percent.[19] Similarly, a one percent increase in the size of the extended market of the source country, after controlling for the source country GDP, reduces FDI to all hosts by 0.05 percent. Columns 2 through 4 show that the results are robust to the inclusion of other variables which may explain FDI location, such as the stock of privatization to date (to control for the fact that most FDI linked to privatization is in non-tradables), the rate of inflation (to control for macroeconomic conditions), and an index of institutional quality.[20]

An interesting exercise that provides a notion of the magnitude of these effects is to compare the impact that the creation of the FTAA would have for FDI from the United States to Mexico and Argentina, according to the basic model of column 1. Consider first the case of Argentina. Since it does not have an FTA with the United States, it would benefit from the direct effect of sharing an FTA with the source, increasing the US-originated FDI stock by 27 percent. In addition, the Argentinean economy would become more attractive to FDI because of the extension of its market from Mercosur to the FTAA (which using GDP data for 1999, implies that the extended market increases by a factor of 10). This increase in the size of the extended market would lead to an increase of 26.8 percent in the stock of FDI originating in the US (as well as other source countries).[21] On the other hand, the source extended market effect would partially offset these increases. The FTAA, however, would only represent an increase of around 16 percent in the extended market of the United States, with an associated decline in US FDI of 0.71 percent due to the diversion/dilution effect.[22] Altogether, the overall effect of the creation of

[18] The coefficient for *Same RIA* in the Table is 0.24. Since FDI is in logs, it is necessary to transform this coefficient, by computing exp(0.24)-1=0.27

[19] While this effect appears at first sight to be small, it can actually make a big difference, as will become clear below. As an example, the formation of NAFTA increased the extended market of Mexico by a factor of 18!

[20] The only exception is the extended market source, which loses significance in one of the regressions. See Appendix for variable definitions and sources

[21] exp(0.1022*ln(10.21))-1 = 0.268

[22] exp(-0.0481*ln(1.16))-1 = -0.0071

the FTAA would be a substantial increase of around 60 percent in the United States' direct investment position in Argentina.[23]

The result for Mexico would be quite different. Since Mexico and the U.S. are already members of the same FTA, the FTAA would have no direct effect. The increase of the extended market of Mexico would be lower than that of the U.S., as Mexico already had FTAs with Colombia, Venezuela, and Bolivia at the end of the sample period, yielding an extension of the host market of only 13 percent, and a corresponding increase in bilateral stocks of 1.25 percent. Netting the source extended market effect, calculated in the previous paragraph as –0.71 percent, we arrive at a net increase of US FDI stocks in Mexico of around 0.5 percent.[24]

The numbers in this simple exercise can illustrate potential asymmetries in the impact of the FTAA for different countries—but they must be taken with a great deal of caution. The estimates that we use represent the average impact of our regional integration variables over the whole sample. However, the impact may differ according to the characteristics of the countries in question. For example, the impact of *Same RIA* may depend on the horizontal or vertical nature of the investments, which in turn may depend on the degree of protection in the host country, or the similarity in factor proportions vis-à-vis the source. Other things equal, closed economies are expected to have a larger share of horizontal FDI, which according to the theory should decrease with regional integration. Economies that are similar in their factor endowments are not expected to have a substantial volume of vertical FDI, suggesting that FDI between similar countries should not react much to integration.

The difference in the impact of same RIA for countries of different characteristics is examined in Table 2. In column 2, we include an interaction term in which *Same RIA* is multiplied by the average openness in the host country throughout the sample period. The interaction term is positive and significant, suggesting that the impact of common membership in an RIA will increase with the openness of the host country. Column 3 presents the results when *Same RIA* is interacted with the absolute difference in the percentage of the labor force with secondary education between the source and host countries, averaged over the period.[25] In column 4, we include both interaction terms together. The coefficients for the interaction terms

[23] 1.27*1.268*(1 – 0.0071) –1=0.60
[24] 1.2569*(1-0.0071)-1=0.005

are very similar to those of the previous columns, and so is the Same RIA impact evaluated at the mean of openness and factor proportions. The effect of Same RIA on FDI as a function of different levels of openness and difference in factor proportions is presented in Figures 1 and 2. Interestingly, Figure 1 suggests that common membership in RIAs may lower FDI for host countries that are below a critical level of openness (imports plus exports over GDP below 50 percent). Within Latin America, countries such as Argentina, Brazil and Colombia are well below this critical level.

Simulating the Impact of the FTAA on FDI to its Member Countries

We have in our sample 10 countries that are scheduled to launch the FTAA in 2005. These are Argentina, Brazil, Canada, Chile, Colombia, Costa Rica, Mexico, Panama, the US and Venezuela. In what follows, we simulate the potential impact of the FTAA in each of these countries, using the regressions presented above. In each case, we look at the effects from inside sources (the US and Canada) as well as from the rest of the world. To do this, we first use the coefficients of our baseline regression (column 1 in Tables 1 and 2) and estimate the FDI stocks that each country would have from each source country if the FTAA were implemented. That is, we compute the fitted value of the FDI stock using the coefficients estimated in the baseline regression but replacing the variables *Same FTA*, *Extended Market Source* and *Extended Market Host* for the values they would have assumed had the FTAA entered into force in 1999. Then, we aggregate this value by host country according to whether the FDI stocks come from USA and Canada or from the rest of the world and calculate the percentage change in the stocks relative to their fitted values in the absence of FTAA.

Table 3 shows the results for the ten future FTAA members represented in our sample. The first thing to be noticed is that the impact on FDI stocks are exactly the same for countries that belong to the same trading bloc, like Argentina and Brazil. This is an expected result since the changes in the explanatory variables we are taking into account, extended market host, extended market source and same FTA, are equal for these both countries. Accordingly, each of the countries in Mercosur would increase its stocks from USA and Canada by approximately 60 percent and from the rest of the world by almost 26 percent. The figures for the countries of the

[25] One shortcoming of this variable is that it is only available for about three quarters of the observations. Note that we do not include this variable by itself in the regressions, since it is already captured by the country-pair fixed

Comunidad Andina are larger (82 percent from insiders, and 44 percent from the rest of the world). The countries in which the estimated impact is largest are Panama, Costa Rica and Chile, which have the greatest increase in their extended market size. At the other end of the spectrum are Mexico, Canada and the US, all cases in which the effects would be minimal.

The fact that the results are similar for countries within each bloc does not mean, however, that the distribution of the FDI gains will be equally distributed among the bloc members. It simply shows that we cannot uncover the asymmetric effects within each bloc with this model. In the second panel of the table we repeat the exercise including the interaction between *Same RIA* and *Openness*. As we expected, more open economies would benefit more from the FTAA. Notice in particular the reduction in the impact from the US and Canada in the case of Argentina and Brazil, which are the least open economies in the group. Remember that the extended market effect (from all sources) in the case of Argentina in the example discussed before was around 26.8 percent. The total impact from insiders in this model is around 2 percent, which suggests that the direct same RIA effect is in these cases negative. In the third panel, we add the interaction of same FTA with the difference in factor proportions (corresponding to equation 4 in Table 2).

Naturally, the figures for the impact of the FTAA on FDI obtained in these simulations should only be taken as indicative. As is obvious from Table 3, they change considerably depending on the specification used for the simulations. In spite of this, we believe that they provide a very useful first look at the potential impact of the FTAA on FDI. The paper suggests that this impact is statistically significant, economically important, and very unevenly distributed.

FDI Policy in Integrating Countries

The discussion throughout this paper has implicitly equated gains in FDI with gains in general welfare. The national "winners" from RIAs are associated with those whose FDI inflows increase, and the national "losers" are those whose FDI inflows decline. However, the question of whether FDI generates positive welfare effects for the host countries has been a subject of great debate. While most authors believe that FDI tends to be beneficial, there are some who

effects.

believe that foreign investment is at best a mixed blessing, bringing with it a measure of harm that may outweigh the good.

The presumption that FDI is good is based on the idea that FDI may generate positive spillovers for the rest of the economy. These spillovers may flow through a variety of channels. If the foreign firm is technologically more advanced than most domestic companies, the interaction of its technicians, engineers and managers with domestic firms may result in knowledge spillovers. Positive spillovers may also arise if the foreign firm trains workers who are eventually hired by domestic firms. Other possible sources of spillovers identified in the literature are related to the development of new inputs spurred by the demand from multinationals, which then become available to domestic producers (Rodríguez-Clare, 1996), or to the example set by exporting multinationals, which may induce domestic producers to become exporters as well (see Aitken, Hanson and Harrison, 1997). Borensztein, De Gregorio and Lee (1998) find evidence that FDI has a positive effect on growth, provided the level of human capital in the host country is sufficiently high. Thus, in order to benefit from the advanced technology introduced by foreign firms, the host country has to have capacity to absorb it.[26]

However, FDI may also generate negative spillovers. Domestic firms may be displaced by the foreign firm, or may find that the cost of factors of production increases as a result of the foreign investment. At the same time, foreign firms tend to import a larger share of their inputs. This may generate balance of payments concerns, and at the same time affect domestic suppliers of intermediate inputs, whose demand may decline when a domestic firm is sold to foreign nationals. While most of the earlier empirical literature on the subject supports the presence of positive externalities, recent work based on firm-level data has found some evidence of negative externalities instead. An example is the work of Aitken and Harrison (1999) who find, for the case of Venezuela, that growth of total factor productivity was lower for domestic firms in sectors in which FDI was greater. These authors focus on within-industry spillovers, however. Kugler (2000) and IDB (2002) find evidence of important positive inter-industry spillovers for the cases of Colombia and Mexico, respectively.[27]

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[26] For a more complete discussion of spillovers from FDI, see Blomström and Kokko (1998) and Hanson (2001).

[27] Kugler (2000) argues that the lack of intra-industry spillovers may be due to the fact that foreign affiliates will appropriate as many of the benefits as possible of their imported technology, and thus they try to prevent spillovers

This discussion of the potential benefits and costs of FDI suggests that not all FDI carries similar benefits. In particular, FDI may be more beneficial if it targets more advanced industries (so that potential technological spillovers are larger); if it establishes strong forward and backward linkages with domestic firms (which may thereby absorb the spillovers); if it exports part of the production (relaxing balance of payments concerns, and inducing domestic firms to follow suit); and if domestic firms have capacity to absorb those spillovers. The key question is, what kind of policies can countries adopt in order to ensure that the resulting FDI inflows are of the beneficial kind? In addition, how does regional integration affect the desirability and effectiveness of those policies? And how can countries maximize the FDI benefits associated with agreements such as the FTAA?

Some of the policies that countries have traditionally used to try to get the most out of FDI are technology transfer and performance requirements. Domestic affiliates of foreign owned firms may be required to train domestic workers to certain standards, to locate R&D activities in the country, to use a minimum content of local inputs, to export a certain proportion of their output, or to employ certain technologies. Yet the evidence suggests that performance requirements have been ineffective. Blomström, Kokko and Zejan (2000, Chapter 13) offer strong evidence that the requirements actually reduce multinationals' employment of technology, and weaker evidence that they increase capital imports as well. In addition, some of these requirements, such as local content or trade balancing requirements, are either prohibited or being phased out under current WTO rules.

Whether or not performance requirements are beneficial under some circumstances, they are *least likely* to be so in circumstances of regional integration. RIAs tend to promote vertical FDI over horizontal; they also tend to extend the market for horizontal FDI from individual countries to that of the RIA, thus making FDI more footloose within the region. While a horizontal multinational firm may accept performance requirements if it is necessary to serve a particular country's protected market, enlargement of the market with an RIA allows the firm to choose as its host whichever member country has the fewest requirements. A vertical multinational, even more, may simply choose another country for a particular stage of

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from leaking to their competitors. On the other hand, they may want to upgrade the technological capabilities of a supplier, which explains the existence of inter-industry spillovers.

production.[28] Performance requirements, in other words, may be best suited for a state of the world that RIAs are designed deliberately to dismantle. The implication for regional integration policy is that, where it comes to an RIA's investment chapter, national treatment may work better than any alternative to help a country avoid becoming an FDI loser.[29]

If performance requirements are not helpful in attracting FDI to integrating countries, which policies would be? And, more specifically, what can countries do to become FDI winners in the regional integration game? With regards to this last question, the evidence discussed in this paper suggests that the FDI gains of RIAs are unlikely to be distributed evenly, and that the gains may be smaller for countries that have factor endowments similar to those of the source countries, and are relatively closed to international trade.

While not much can be done to change a country's factor endowments in the short run, openness is certainly amenable to policy action. Not only would openness amplify the impact of the RIA on FDI. It will also change the composition of FDI, from horizontal to vertical. Since horizontal FDI sometimes occurs due to the existence to distortions (high protection), while vertical FDI tends to follow comparative advantages, this shift may strengthen the benefits a country derives from multinational activities. Beyond the impact of factor endowments and openness discussed above, Levy Yeyati, Stein and Daude (2002) show that countries that present a more attractive overall package to foreign investors are also likely to gain more FDI from the formation of RIAs. This begs the question of how to enhance a country's attractiveness.

In this regard, one can think of two polar strategies. The first one, which has been compared to a "beauty contest" by Oman (2000), involves improving the quality of institutions, educating the labor force and developing the country's infrastructure. The second one entails aggressive use of fiscal and financial incentives to attract foreign investors. This simplified division entails obviously a false dichotomy, as countries tend to do a little of both, but it still provides a useful way of organizing the discussion.

One important advantage of the "beauty contest" view is that improvements in infrastructure, education or the quality of the institutional environment will certainly benefit domestic citizens and firms, regardless of their impact on FDI. Beyond these general benefits,

[28] Coordinated adoption of performance requirements may solve the problem of location within the extended market, but it does not stop vertical FDI from seeking more convenient locations.

there is evidence suggesting that improving the quality of institutions can have a large impact on FDI (see, for example, Stein and Daude, 2001). In particular, these authors show that reducing excessive regulation, enforcing property rights, improving the quality of the bureaucracy and reducing corruption are some of the most promising policies in terms of attracting foreign investors.[30]

The evidence regarding the impact of education and infrastructure on the location of FDI is weaker.[31] However, this does not mean that countries should not pursue these policies. While education may not contribute to the total amount of FDI a country receives, it may affect the benefits host countries derive from FDI through a variety of channels. First, an educated labor force may affect the type of FDI a country receives, shifting it toward more advanced industries, which may generate larger spillovers. Second, for a given type investment, education increases the capacity of the labor force and of domestic firms to absorb spillovers. In addition, foreign firms that are attracted by an educated labor force become a strong constituency in favor of further improvements in education.[32] In contrast, foreign firms that are attracted by cheap labor will probably lobby for the government to ensure the continuous availability of cheap labor, which not sound that appealing as a development strategy.

The case for aggressive competition in incentives is not as clear. To the extent that FDI produces positive spillovers, it makes sense for governments to offer incentives to potential investors in order to lure them into their territory.[33] Provided there are economies of scale, eliminating trade barriers will induce firms to produce in just one location within a bloc and serve the extended market from this location. Competition among countries for FDI may become too intense however. The problem is distributional in nature: if social rates of return on an investment are similar across countries, foreign firms will be able to extract most of the benefits associated with the investment. Improving the distribution of the benefits of FDI in favor of host

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[29] The FTAA draft, as of spring 2002, includes in its investment chapter an article on performance requirements that would proscribe them. But the text is thoroughly bracketed – and includes several bracketed exceptions. The question is under negotiation. (See http://www.ftaa-alca.org/ftaadraft/eng/draft_e.asp. Last consulted 5-2-02).

[30] These authors show that a one standard deviation improvement in an index of institutional quality developed by Kaufmann, Kraay and Zoido-Lobatón (1999) results in an increase in bilateral FDI of 130 percent!

[31] See Stein and Daude (2001).

[32] This is clearly the case of Intel in Costa Rica, where the enrollment in engineering schools has doubled in a matter of only a couple of years.

[33] This argument goes through as long as the government is considered a social planner seeking to maximize the country's welfare. A potential problem with incentive-based competition, however, is that negotiations with potential entrants are rarely transparent and open to public scrutiny, so they could lead to arbitrariness and corruption.

countries may require some form of coordinated action among the region's hosts.[34] As difficult as this coordination may be for the case of South-South RIAs, it may be an even greater challenge for a North-South RIA such as the FTAA, where the interests of source and host countries are more likely to come into conflict.

[34] See Fernández-Arias, Hausmann and Stein (2001). These authors show that the complete elimination of incentive-based competition is not the optimal solution for host countries and, under some circumstances, may leave then worse off than under incentive-based competition.

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Table 1. The Impact of Regional Integration on FDI
OLS Estimation: Dependent Variable Ln(FDI Stock +1)

	(1)	(2)	(3)	(4)
GDP Host	0.1912	0.18	0.2326	0.2403
	(5.864)***	(5.540)***	(6.512)***	(5.567)***
GDP Source	0.518	0.518	0.5152	0.4435
	(7.259)***	(7.288)***	(6.961)***	(5.473)***
Extended Market Host	0.1022	0.1118	0.1062	0.0534
	(5.684)***	(6.234)***	(5.663)***	(1.926)*
Extended Market Source	-0.0481	-0.051	-0.031	-0.0183
	(2.730)***	(2.905)***	(1.699)*	(0.767)
Same RIA	**0.2393**	**0.2821**	**0.2768**	**0.2086**
	(3.983)* **	**(4.703)*** **	**(4.630)*** **	**(2.717)*** **
Privatizations		0.0411	0.0351	0.0462
		(9.609)***	(8.026)***	(8.229)***
Inflation			0.0471	0.0514
			(4.013)***	(3.272)***
Institutions				0.137
				(3.522)***
Constant	-6.9546	-6.9168	-7.614	-6.2566
	(7.260)***	(7.249)***	(7.510)***	(5.607)***
Observations	12483	12483	11421	7666
Number of paircode	1083	1083	1045	994
R-sq between	0.5126	0.5072	0.5056	0.5126
F pair dummies	[61.65]***	[61.54]***	[59.95]***	[48.15]***
F year dummies	[42.12]***	[40.45]***	[37.28]***	[23.45]***

Absolute value of t statistics in parentheses.
Absolute value of F statistics in square brackets.
* significant at 10%; ** significant at 5%; *** significant at 1%

Table 2: Openness, Factor Proportions, and the Impact of RIAs on FDI
Fixed Effects Estimation: Dependent Variable Ln(FDI Stock +1)

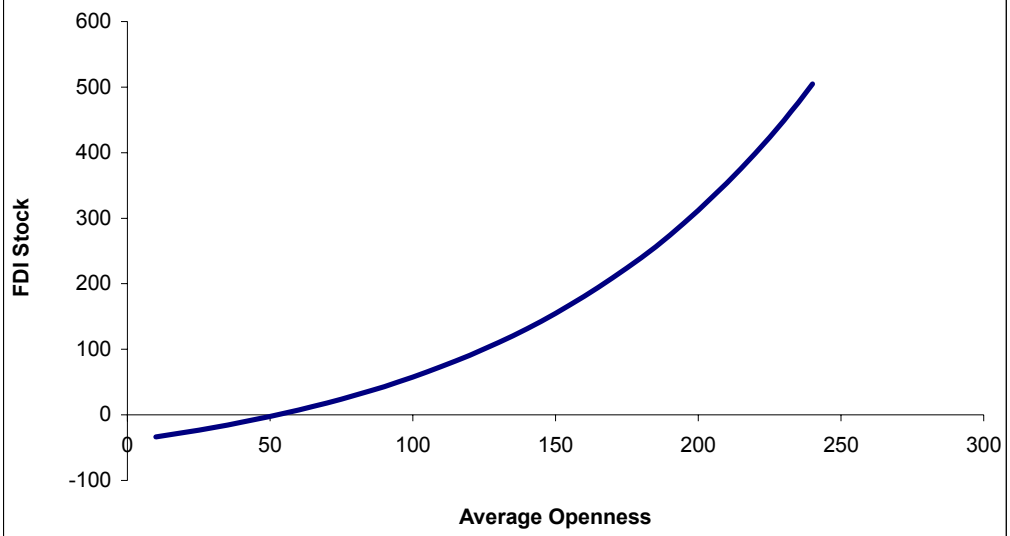
	(1)	(2)	(3)	(4)
GDP Host	0.2038	0.1992	0.1136	0.1075
	(6.342)***	(6.199)***	(3.049)***	(2.888)***
GDP Source	0.5175	0.514	0.4994	0.4939
	(7.250)***	(7.205)***	(6.192)***	(6.131)***
Extended Market Host	0.0884	0.0925	0.0918	0.0968
	(5.223)***	(5.465)***	(5.051)***	(5.321)***
Extended Market Source	-0.048	-0.0489	-0.0115	-0.0133
	(2.722)***	(2.772)***	(0.563)	(0.653)
Same RIA	**0.2395**	**-0.3692**	**-0.0482**	**-0.7146**
	(3.980)* **	**(2.370)** **	**(0.501)**	**(4.007)*** **
Same RIA * Average Openness		0.009		0.0096
		(4.235)***		(4.437)***
Same RIA * Abs.Diff. % Labor Force with Secondary Education			0.0113	0.0127
			(2.561)**	(2.871)***
Constant	-6.9217	-6.8741	-6.0459	-5.9588
	(7.225)***	(7.180)***	(5.533)***	(5.458)***
Observations	12483	12483	9758	9758
Number of pairs	1083	1083	828	828
R-sq between	0.5103	0.5147	0.4623	0.4623
F pair dummies	[61.69]***	[61.26]***	[57.00]***	[56.44]***
F year dummies	[42.13]***	[42.10]***	[35.88]***	[35.95]***
Total Effect of Same RIA (MIN)		*-0.197*	*-0.048*	*-0.551*
Total Effect of Same RIA (MEAN)		**0.283**	**0.181**	**0.245**
Total Effect of Same RIA (MAX)		*2.876*	*0.706*	*3.687*
MIN Average Openness		16.97		16.97
MEAN Average Openness		72.25		73.08
MAX Average Openness		370.25		370.25
MIN Abs.Diff. % Labor Force with Secondary Education			0.03	0.03
MEAN Abs.Diff. % Labor Force with Secondary Education			20.32	20.32
MAX Abs.Diff. % Labor Force with Secondary Education			66.72	66.72

Absolute value of t statistics in parentheses.
Absolute value of F statistics in square brackets.
* significant at 10%; ** significant at 5%; *** significant at 1%

Table 3. Simulating the Impact of the FTAA

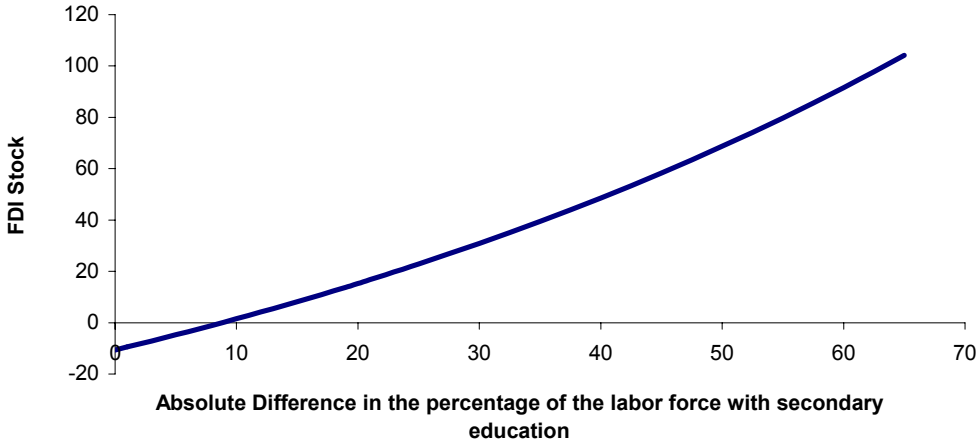
	Baseline Regression		Regression with Openness		Regression with Openness and Skill Difference	
	From USA and Canada	From ROW	From USA and Canada	From ROW	From USA and Canada	From ROW
Argentina	58.93	26.05	1.87	27.44	21.70	28.88
Brazil	58.93	26.05	2.71	27.44	22.62	28.88
Canada	0.65	1.43	0.70	1.50	1.35	1.57
Chile	98.13	57.15	82.44	60.54	56.97	64.10
Colombia	81.81	44.20	34.20	46.72	11.43	49.35
Costa Rica	124.92	78.40	153.06	83.35	155.83	88.57
Mexico	0.03	0.81	0.05	0.84	0.67	0.88
Panama	136.11	87.27	161.87	92.91	206.02	98.86
USA	0.65	1.43	0.70	1.50	1.35	1.57
Venezuela	81.81	44.20	55.44	46.72	53.58	49.35

Figure 1.
Difference in Openness and the Impact of Same RIA on FDI Stock



Note: The coefficients correspond to the Regression 4 of Table 3, and are evaluated at the mean of skill difference.

Figure 2.
Absolute Difference in Capital per Worker and the Impact of Same RIA on FDI Stock



Note: The coefficients correspond to the Regression 4 of Table 2, and evaluated at the mean of Openness.

Appendix

Table A.1. Free Trade Agreements

FTA	Creation	Members
European Union (EU)	1957	Austria (since 1995), Belgium, Denmark (since 1973), Finland (since 1995), France, Germany, Greece (since 1981), Ireland (since 1973), Italy, Luxembourg, Netherlands, Portugal (since 1986), Spain (since 1986), Sweden (since 1995), United Kingdom (since 1973)
European Free Trade Association (EFTA)	1960	Austria (until 1994), Denmark (until 1972), Finland (1986-1994), Iceland (since 1970), Liechtenstein (since 1991), Norway, Portugal (until 1985), Sweden (until 1994), Switzerland, United Kingdom (until 1972)
European Economic Area (EEA)	1994	All members of the European Union, Iceland, Liechtenstein, Norway
Central European Free Trade Area (CEFTA)	1992	Czech Republic, Hungary, Poland, Slovak Republic, Slovenia (since 1995)
North American Free Trade Agreement (NAFTA)	1989	Canada, USA, Mexico (since 1994)
Mercado Común del Sur (MERCOSUR)	1995	Argentina, Brazil, Paraguay, Uruguay
Andean Community (formerly Andean Pact)	1969	Bolivia, Colombia, Ecuador, Peru, Venezuela
Central American Common Market (CACM)	1959	Costa Rica, El Salvador, Guatemala, Honduras, Nicaragua
Group of Three	1994	Colombia, Mexico, Venezuela
Bolivia-Mexico FTA	1995	Bolivia, Mexico
Association of Southeast Asian Nations FTA (ASEAN)	1992	Brunei, Indonesia, Malaysia, Philippines, Singapore, Thailand, Vietnam (since 1995)
Australia-New Zealand Closer Economic Relations	1983	Australia, New Zealand
South African Custom Union	1910	Botswana, Lesotho, Namibia (since 1990), South Africa, Swaziland

Table A.2. Data Sources

Variable	Source
Privatizations	Chong, A., and F. López-de-Silanes. 2002. "Privatization and Labor Force Restructuring Around the World." Manuscript Yale University (forthcoming NBER)
Inflation	International Monetary Fund. *International Financial Statistics*.
FDI Stock	OECD. 2000. *International Direct Investment Statistics Yearbook*. Paris, France: Organisation for Economic Cooperation and Development.
Factor Endowments	Spilimbergo, A., J.L. Londoño, and M. Székely. 1999. "Income Distribution, Factor Endowments, and Trade Openness." *Journal of Development Economics* 59(1): 77-101.
Distance, Border, Common Language and Colonial Links	The World Economic Factbook, CIA website www.cia.gov/cia/publications/factbook/index.html
GDP	World Bank. *World Development Indicators*.

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