Documentos de Trabajo

FDI Flows into MERCOSUR Countries:
Winners and Losers in the FTAA and
the EU-MERCOSUR Agreement.

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January 2006

ABSTRACT

The aim of this paper is to analyze certain aspects of foreign direct investment (FDI) and of the development of regional integration agreements (RIA). Firstly, we include variables that are additional to those generally considered in the gravity models of FDI determinants (variables related to the external sector and to the relative size of economies that are involved in each bilateral relationship). Secondly, the analysis of "winners" and "losers" is disaggregated at country level, so as to consider the possible effects of agreements on each MERCOSUR country in the framework of the FTAA and the MERCOSUR-EU agreement. The form that FDI among countries takes allows us to profile winners and losers as regards FDI flows in the framework of regional integration agreements. FDI increase could be associated with the external creation of FDI, and we find bilateral FDI flows are more elastic as regards foreign trade. If the FTAA and MERCOSUR-EU agreements increased trade flows –which is a distinct possibility- those flows would have a positive impact on FDI flows, and predominant forms of expansion would be the open/resource seeking form. In this framework, Brazil would be the only "winner" inside the bloc and Argentina would probably be the "loser". In small economies, Uruguay would tend to be a "winner" as regards potential to capture FDI, and Paraguay a "loser".

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CONTENTS

1. INTRODUCTION

The aim of this paper is to analyze some additional aspects of foreign direct investment (FDI) and the development of regional integration agreements (RIA)[2].

Firstly, we include some variables that are additional to those traditionally considered in the gravity model of FDI determinants. These variables are related to the external sector and to the relative size of the economies involved in each bilateral relationship. They enable us to draw some conclusions about the forms of FDI expansion in the MERCOSUR countries, and to analyze the strategies transnational corporations (TNCs) would be most likely to adopt in the framework of new integration agreements, particularly if some of these enterprises opt for complex integration strategies. In recent years, these new forms of expansion have become more important in the world economy, and they go beyond the "horizontal" and "vertical" strategies that TNCs have traditionally employed in the MERCOSUR countries.

Secondly, as estimations with the general model only capture the average impact of integration agreements, the analysis of "winners" and "losers" is disaggregated at country level so the possible effects of agreements on each MERCOSUR country in the framework of the FTAA and the MERCOSUR-EU agreements can be considered.

The paper is organized as follows: first, we present an analysis of the evolution of bilateral FDI flows and the relationship between external openness and investment. Second, we discuss different theoretical and methodological aspects of gravity models that affect the objectives of this research, and we also tackle theoretical questions about the strategies of transnational corporations (TNCs) and the analysis of winners and losers. Third, we present the econometric model. Fourth, we give the empirical results as regards FDI expansion forms and winners and losers in integration processes, with particular emphasis on possible winners and losers among the MERCOSUR countries in an agreement with the FTAA or the EU. In the last part, we present the main conclusions of our research.

1.1 Bilateral FDI flows

World bilateral flows of FDI increased between 1983 and 2003. Flows from the European Union (EU) were clearly predominant and determined the global trend. EU flows also led to the considerable fluctuations in the global trend in world FDI that took place in 1998-2002. Between 1997 and 2000 world bilateral FDI increased threefold, FDI outflows from Europe to countries not belonging to the EU decreased, while bilateral flows among the countries of the European Union increased fivefold. At the end of the period under analysis (2003) FDI was around the 1997 level (figure 1).

Figure 1
Bilateral FDI, 1983-2003
(USD millions)
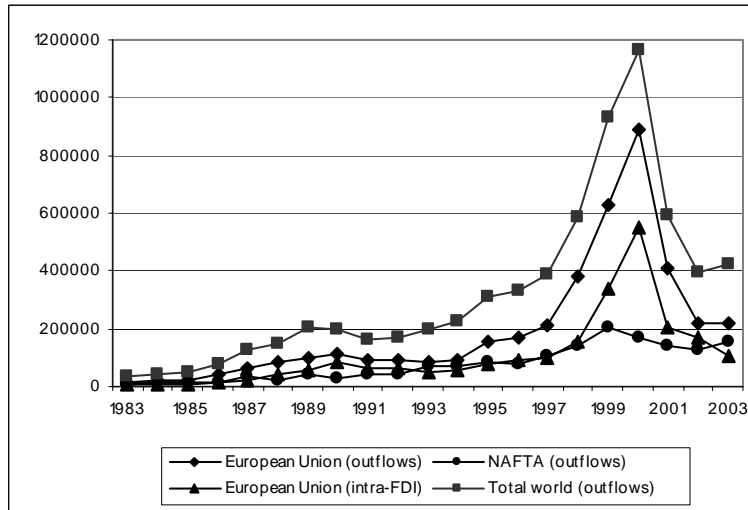
Source: Own elaboration based on OECD (2004).

The increase in bilateral FDI flows at the end of the 1990s was closely connected to the wave of cross-border mergers and acquisitions (M&A) that have been taking place mainly among enterprises in developed countries. This mostly involved European transnational corporations (TNCs), which accounted for nearly 70% of the purchases between 1998 and 2000 (figure 2).

Figure 2
Cross-border Mergers & Acquisitions, by Region of Buyer,
1987-2002
(USD millions)
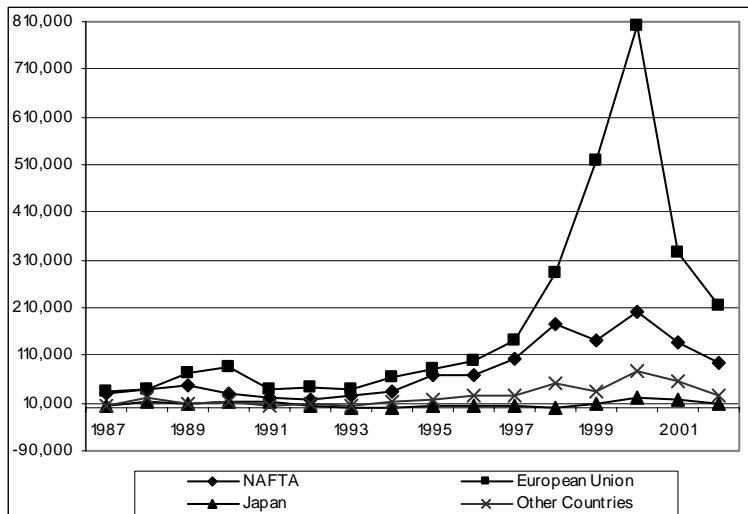
Source: Own elaboration based on UNCTAD (2003 and 2004).

These cross-border mergers and acquisitions were concentrated in the EU and the NAFTA, the biggest sellers. The fact that the EU was the principal buyer and seller confirms the notion that the increase in bilateral FDI flows among European countries was closely connected to M&A (figure 3).

Figure 3
Cross-border Mergers & Acquisitions, by Region of Seller,
1987-2002
(<u>USD</u> millions)
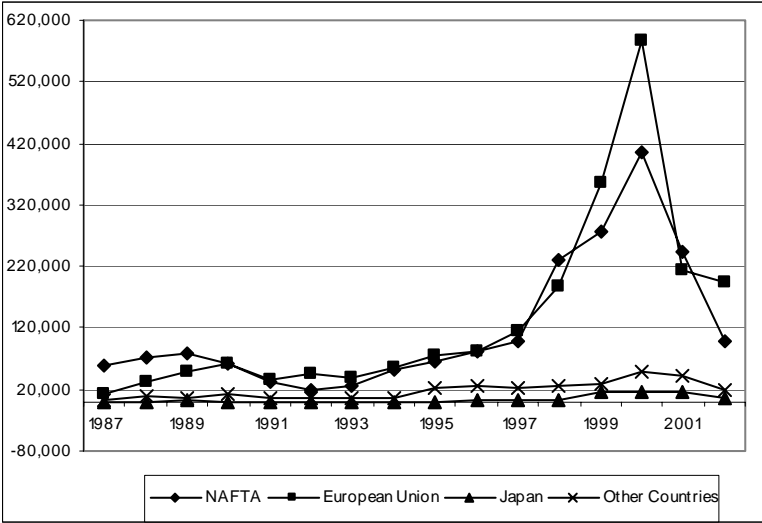
Source: Own elaboration based on UNCTAD (2003 and 2004).

The trend in bilateral FDI flows to the MERCOSUR countries is similar to that of global flows. During the 1980s inflows to the region were very low, although they tended to grow slightly. Since the beginning of the 1990s these inflows increased sharply. At the end of that decade the inflow of FDI to the MERCOSUR countries doubled, which was in line with the evolution of FDI in the world as a whole.

The principal source of this FDI was the EU countries, and their investments were mostly connected to the privatization of public enterprises at the beginning of the decade and to the wave of cross-border mergers and acquisitions that took place in the world in the late 1990s. Even though the information on mergers and acquisitions does not exactly fit the FDI data registered in balance of payments statistics, it is clear that a considerable percentage of the investment in the MERCOSUR countries in the 1990s was due to M&A (figure 4). Although the evolution of bilateral investment flows among MERCOSUR countries and the principal investors in the region coincides in time with the expansion of the market, these flows followed the trend in the world economy, and were not necessarily determined by the integration agreement.

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Figure 4
FDI Inflows by Source and Cross-border Mergers & Acquisitions
in the MERCOSUR Countries
(USD millions)
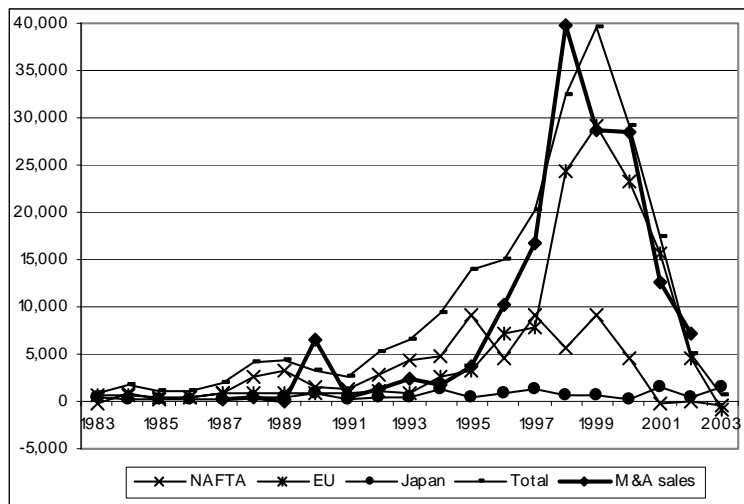
Source: Own elaboration based on OCDE (2004) and UNCTAD (2003 and 2004).

The importance of this trend makes it necessary to distinguish a more "normal" period of FDI inflows to the region (1984-1997). This will enable us to evaluate our conclusions when we incorporate into the model a phenomenon that is unlikely to recur to the same extent in the near future.

1.2 FDI and trade openness

The external openness of economies, measured as the sum of trade flows (exports and imports) as a proportion of gross domestic product (GDP), is an important variable in the analysis of winners and losers as regards FDI in the framework of an integration process. According to various theoretical approaches, the most open economies are those that have the best chances of capturing FDI. Traditional forms of TNC expansion (horizontal or market seeking) could be yielding space to vertical or complex forms which involve more intensive external trade. It might be possible to associate a high level of external openness with more open transnational expansion forms which could attract FDI, particularly FDI from developed to developing countries. This is the basis of the hypothesis we advance in the next section of this study.

This relationship between FDI and external openness would appear to be confirmed by the situation in some countries. In the members of the Agreement of South Eastern Asian Nations (ASEAN) and also China, Hong Kong and Korea, there is a correlation between degree of openness and the share of FDI in GDP. This can be seen in figure 5.

In the regional integration agreements (RIAs) involving Latin America countries, this relationship only appears in the Central America Common Market (CACM) and in Mexico, and it does not hold in the MERCOSUR or the Andean Community (CAN) (figure 6).

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Figure 5
Asia: Openness and FDI/GDP, 1983-2002
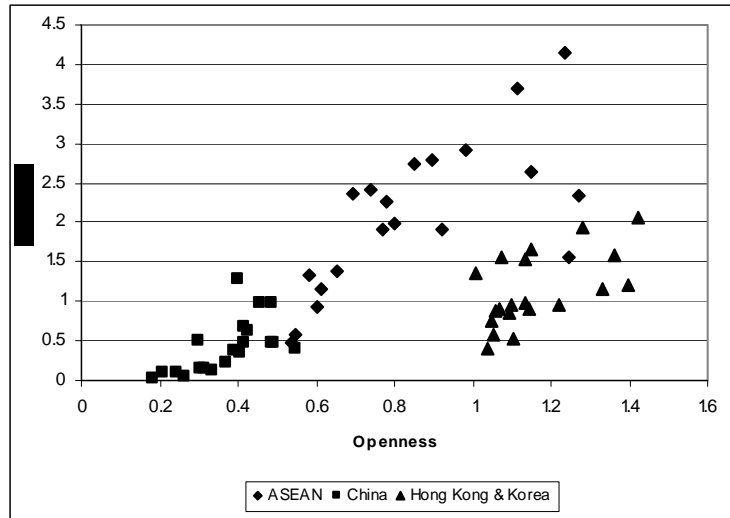
Source: Own elaboration based on OCDE (2004) and World Bank (2004).

Figure 6
Latin America: Openness and FDI/GDP, 1983-2002
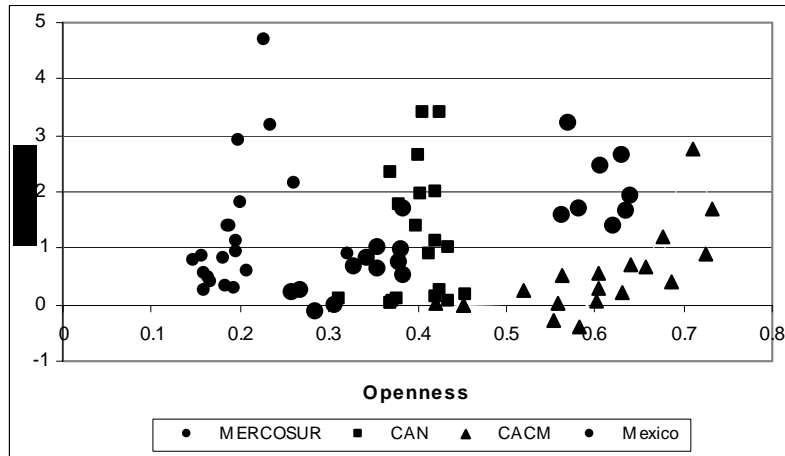
Source: Own elaboration based on OCDE (2004) and World Bank (2004).

2. THEORETICAL QUESTIONS

In this section of the paper we will discuss some aspects of FDI determinants, and the channels through which regional integration can affect FDI. First we present some elements that contribute to enriching the theoretical base of gravity models and to the selection of variables incorporated into the descriptive model. We focus in particular on elements that allow us to consider different strategies that TNC could adopt in the framework of the new integration agreements that the MERCOSUR countries are exploring. Secondly, after presenting the mechanism through which integration agreements could impact on FDI flows, we analyze some different approaches to the matter of winners and losers. The way in which "current" winners (losers) can become losers (winners) in the context of an integration agreement with developed countries depends on a country's ability to generate a transition towards strategies that are currently coming to the fore in global TNC behavior.

2.1 Theoretical aspects of gravity models and forms of transnational expansion

Gravity models include a set of descriptive variables such as the GDP of the host and the source country, the distance between the two countries, the GDP of the integration agreement to which both countries belong, and other variables that define particular characteristics of the countries (for example, degree of trade openness, privatizations, political risk). The combination of different theoretical aspects used in some analytical frameworks, particularly Markusen's "knowledge-capital" model and a set of typology of TNC strategies (for example Dunning, 1993; Trajtenberg and Vigorito, 1982; and UNCTAD, 1993), can contribute to defining the set of variables to be included in the descriptive model and to identifying predominant forms of transnational expansion. This will enrich the theoretical base of gravity models.

Markusen and Maskus (2001) say there are two basic models to include transnational firms in the traditional theoretical approaches to international trade: the "horizontal" and the "vertical" model. In the horizontal model, the firm produces similar types of goods and services in different countries, and its main strategy is "market-seeking" rather than taking advantage of differences in factor prices. The key assumption in this form of expansion is the presence of economies of scale at the firm level, which is one advantage that TNCs have over domestic firms. This advantage interplays with trade costs to determine whether the firm will supply the foreign market through exports or FDI. If trade costs are high, the TNC will become increasingly involved in FDI.

In the vertical model, the firm separates different steps in its value chain in order to take advantage of factor price differentials across countries (the "resource-seeking" strategy). Dunning (1993) identifies three types of TNC resource seeking. First, TNCs that are seeking natural resources and that engage in FDI to reduce costs and to secure supply sources, second, those seeking supplies of cheap unskilled or semi-skilled labor, and third, those that want to acquire technological capability, management or marketing expertise, or organizational skills.

The first model is characteristic of most FDI flows among developed countries, where TNCs obtain advantages over domestic firms thanks to economies of scale at the firm level. The second model would typify north-south FDI flows. However north-south and south-south flows may also be horizontal if there are high trade barriers against imports.

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While the "horizontal model" supposes that firms produce a homogeneous good, the usual situation is that TNC affiliates produce different varieties of a final good and these are consumed in the local market and also exported. This would be a particular form of FDI which Levy *et al.* (2003) call "horizontal FDI in differentiated goods", and it is similar to what Dunning (1993) defines as "efficiency seeking" FDI. The motivation behind this kind of FDI is to rationalize the structure of established horizontal or vertical investments in such a way that the TNC can obtain higher profits from the common governance of geographically dispersed activities. These benefits have to do with economies of scale and scope, and with risk diversification.

Markusen and Maskus (2001) locate the horizontal and vertical models in a new theoretical framework (the "knowledge-capital" model) which allows analysis of the determinants of three strategies or forms of expansion, domestic, horizontal and vertical, and generates predictions about the relationship between TNC affiliates and trade. They maintain that affiliate's production and trade in some specific good could be substitutes for each other in the "horizontal" model while they could be complementary in the "vertical" model. These authors, using the "knowledge-capital" model, suggest that an affiliate's production and trade tend to be substitutes between similar countries, and to be complementary when countries are very different as regards their relative factor endowment.

Starting from a division between "open" and "closed" forms of transnational expansion, which is usual in the literature about TNC, especially in interpretations that attempt to link TNC strategies to their foreign trade, Bittencourt (2003) associates these forms with the categories defined in the analytic framework proposed by Dunning (1993), differentiating different kinds of FDI: market seeking, resource seeking, efficiency seeking and assets seeking.

This author does a classification crossing "basic" expansion forms (closed or oriented to the internal market, and open or oriented to foreign markets) and entry forms of FDI. Basic expansion forms include semi-open forms, which can mean a market-seeking logic in regional markets and also the development of international trade, which give them some particularities. The key aspect in the differentiation between open and closed forms is the propensity of FDI to foreign trade, especially to export, if FDI goes to developing countries[3].

Therefore it is important to consider transnational expansion forms and FDI determinants at the same time. In the baseline model we include two additional variables: *Simisize*, an indicator of similar countries' size which could enable us to capture horizontal transnational expansion forms; and *XMH*, which represents the external openness of the host economy. In other model specifications we include variables that represent export projection so as to capture some elements that allow us to identify predominant expansion forms in bilateral relationships between countries' blocs.

Most of the empirical studies about FDI and regional integration only explore two motives for firms to expand abroad (horizontal and vertical FDI). But apart from these two TNC strategies it is important to consider two other new trends in FDI (just as UNCTAD does in its World Investment Reports 2004), the role that cross-border mergers and acquisitions

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[3] See the description of these categories in Bittencourt (2003).

(M&A) have played in the increase in FDI, and the "complex integration strategies" increasingly employed by TNCs that are both horizontally and vertically integrated. Yeaple (2003) has defined this type of TNC as one which establishes affiliates in some foreign countries to avoid transport costs, and in others to take advantage of factor price differentials. This strategy creates complementarities between the two types of affiliates.

TNCs employ complex integration strategies when "north-north and north-south FDI reduce the cost of serving international markets in complementary ways, creating complementarities between the two forms of FDI. Firms that undertake vertical (horizontal) foreign investments lower their unit costs and thereby expand their sales. Having expanded the number of units sold, these firms stand to gain proportionately more by further reducing their unit cost by undertaking horizontal (vertical) foreign investment" (Yeaple, 2003).

This strategy creates dependence between the level of FDI in one country and the characteristics and policies of its neighbors. Two locations may be either complements or substitutes, and this relation will depend on the characteristics of the industry in question such as the level of transport cost, the factor intensity of production, and the cost of investing abroad. When transport costs fall, as occurs in regional integration agreements, locations that were once substitutes may become complements.

In other words, when some industries have specific characteristics that allow complex integration strategies, and when transport costs fall due to a regional integration agreement, it is possible that horizontal affiliates may be transformed into vertical affiliates in the framework of an international complex integration strategy employed by the firm. This could be an important factor in explaining FDI in Mexico or in some Central America countries, and also in understanding FDI from developed countries to China and other Asian countries, and intra-Asian FDI. It should also be considered when analyzing in perspective the FDI in MERCOSUR in the framework of regional integration agreements with developed countries.

The incorporation of these concepts into econometric models is complex. The variables used in the modelization to consider the effects of "FDI creation", "FDI diversion", and "FDI dilution" are closely associated with horizontal and vertical FDI, but they are not associated with possible transitions between the two forms of FDI. So as to include some dimension of this strategy, we discriminate in the general model between countries' blocs.

In the literature we have not found theoretical studies that include M&A in general equilibrium models. It is not clear whether or not M&A are connected to the most conventional determinants of FDI: the size and dynamics of the host market (horizontal FDI), or the factorial endowment or trade openness of the host economy (vertical FDI). Our hypothesis is that M&A are related to disturbances in global oligopolies linked to regulatory or technological changes.

2.3 Winners and Losers

Regional integration agreements (RIA) could have different impacts on FDI flows. The impact would depend, among other things, on the characteristics of the countries that belong to the bloc, the specific nature of the integration agreement, the type of FDI that

there is in these countries (horizontal-vertical, export oriented or import substituting), the economic policies implemented in each country before and after the agreement.

Also, the impact of a RIA on intra-regional and extra-regional FDI flows could be different. In the former, as an RIA means a lowering of intra-regional trade barriers when the agreement is signed, firms that before the agreement supplied a market through FDI could begin to supply it by exports from the source country. In this case, intra-regional FDI flows would probably decrease if they respond to horizontal forms of FDI (De Souza & Lochard, 2004). On the other hand, RIAs can stimulate vertical FDI among member countries when firms distribute their production geographically in search of lower total costs (Blomström and Kokko, 1997), thus increasing trade flows. In this case FDI and trade flows are complementary.

As RIAs facilitate trade among member countries, horizontal FDI in differentiated goods could increase since it would be easer for TNCs to specialize each affiliate in the region and to exchange different goods among their affiliates through intra-firm trade.

When it comes to extra-regional FDI flows, RIAs could also have different impacts. When FDI is market-seeking (horizontal FDI) the increase in market size that comes about through the RIA generates greater investment opportunities for extra-regional TNCs depending on regional trade barriers with the rest of the world. When vertical FDI does not lead to production fragmentation among member countries, it is possible that the RIA will not have any impact on extra-regional FDI flows, or will make a negative impact if trade barriers with the rest of the world are raised as a consequence of the formation of the bloc. If vertical FDI involves production fragmentation among member countries, or if FDI is horizontal in differentiated goods, FDI from outsiders will probably increase since the RIA leads to a reduction in the costs of un-integrated production in different locations within the region.

Markusen (2003) has applied his theoretical framework to analyzing the effects of RIAs on extra-regional FDI flows. When developing countries form an RIA, the increase in market size could open up investment opportunities for third country TNCs with horizontal strategies. Also FDI flows could increase when the RIA is made up of developed and developing countries if TNCs try to exploit localization advantage in developing members to export to the developed countries that are members of the RIA ("exportation platform" FDI). This strategy could also be used by TNCs in developed members, thus increasing intra-regional FDI flows and generating a competitive effect in third country TNCs that could reduce their potential benefits (Markusen, 2003).

Finally, the RIA can lead to more extra-regional investment for the region as a whole, but this does not mean more FDI in every member of the RIA. FDI may be unequally distributed across the countries that are in the regional agreement. As De Sousa & Lochard (2004) said "additional FDI flows generated by new memberships do not necessarily locate in the new members". In an RIA there may be winners and losers, in terms of the amount of FDI received by each country.

There may be also a redistribute effect on FDI within the region (FDI dilution). This occurs when horizontal TNCs concentrate their production in a single country and supply other countries through trade when barriers to trade inside the region have been removed, or when FDI is relocated in new members that have lower production costs.

What determines whether a particular country wins or loses? In most of the literature on RIA and FDI the conclusion is that one of the factors that may explain who loses and who wins is country size. Firms may not want to invest in a small country when there is uncertainty about the future of the RIA. Levy, Stein and Daude (2003) considered that the biggest losers could be medium-size countries, since small countries are more likely to be supplied by trade than by FDI, irrespective of whether they belong to the RIA. However, in a previous study of determinants of FDI flows to the MERCOSUR (Bittencourt and Domingo, 2002), we found that the RIA might have played a negative role as regards FDI flows to smaller member countries (especially Uruguay).

On the other hand, countries that offer a more attractive package for foreign investors because they have better-quality institutions, a better labor force, more attractive tax treatment for TNCs and better-developed infrastructure could be winners.

Te Velde and Bezemer (2004) explored different reasons why the formation of an RIA does not necessarily lead to an equal distribution of FDI across countries. They found that the larger a country is relative to others in the region, the more FDI it will attract, and that poorer countries in a region do not necessarily attract less FDI. They also confirmed the hypothesis that regionalization meant that core countries would attract more FDI than peripheral countries.

Te Velde and Fahnbulleh (2003) considered other factors that have a bearing on the extent to which uneven distribution takes place: the level of external most-favored-nation tariffs, the strictness of rules of origin, and agglomeration effects in individual member countries. They suggested that if integration leads to more FDI with equal benefits for the members of the RIA it could start a virtuous circle, and cooperation on joint investment promotion could bring benefits across the whole region.

The analysis of winners and losers involved increases or decreases in FDI inflows, but other factors to do with the welfare effects of FDI in host countries have been debated. The discussion of the potential benefits and costs of FDI suggests that not all FDI results in similar benefits. To derive more benefit from FDI a country has to have foreign affiliates located in more advanced industries where potential technological spillovers are greater. This will induce these firms to export part of their production, which will in turn tend to reduce restrictions on the balance of payments, and this will also induce domestic firms to follow suit and help to strengthen forward and backward links between TNCs and domestic firms which have the capacity to absorb those spillovers[4].

Here we are faced with two types of questions. First, what kind of policies can countries adopt to ensure beneficial results from FDI inflows, and how may an RIA affect the desirability and effectiveness of those policies? This question, which is the most important aspect of the contribution of FDI to development, is not within the scope of our study. The second question is: what can countries do to become FDI winners or to improve their

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[4] For a discussion of FDI spillovers see Blömstrom and Kokko (1996), who identify two types of spillovers: "productivity spillovers" and "market access spillovers". The former occur when local firms improve their productivity as a result of links to TNC affiliates that are technologically more advanced, and when foreign firms train workers who are then engaged by domestic firms. The latter occur when TNC export operations pave the way for local firms to enter the same export markets. FDI may also generate negative spillovers, when domestic firms may be displaced from the market, and may find that the cost of production factors increase as a result of foreign investment. An analysis of the first type of spillover in MERCOSUR countries can be found in Laplane, M. (ed.) (2005).

capacity to attract FDI, in the context of regional integration? In this paper we formulate some hypotheses about how an RIA can affect FDI determinants.

The evidence discussed in Levy, Stein and Daude (2003) suggests that an improvement in attraction capacity may be less in countries that have factor endowments that are similar to those of the source countries, and in countries that are relatively closed to international trade. These authors consider that openness amplifies the impact of the RIA on FDI, and also changes the composition of FDI from horizontal to vertical, a shift that could increase the benefits a country derives from TNC activities.

Levy, Stein and Daude (2002b) demonstrate that countries that present a more attractive overall package to foreign investors are also likely to gain more FDI from the formation of an RIA. The question is how a country's attractiveness can be improved.

The above-mentioned studies do not specify which countries in different integration agreements would be winners or losers. They only suggest a set of general characteristics that would cause a country to be a winner or a loser. This analysis involves a static approach to the FDI-integration process relationship. The integration process can exert an influence on the set of characteristics of its members and cause them to change from being a loser (winner) to a winner (loser).

3. ECONOMETRIC ANALYSIS

3.1 Basic Gravity Model

The basic gravity model to explain FDI flows is as follows[5]:

$$FDI_{ij,t} = \beta_j \text{ GDP Host}_{j,t} + \beta_i \text{ GDP Source}_{i,t} + \gamma \text{ RIA}_{ij,t} + \eta \text{ } EXPMARS_{i,t} + \phi \text{ PRRH}_{j,t}$$

$$+ \lambda \text{ Priv}_{j,t} + + \delta \text{ Inflation}_{j,t} + \nu \text{ Simisize}_{ij,t} + \sigma \text{ BIT}_{ij,t} + \rho \text{ XMH}_{j,t} + \varphi_t + \alpha_{ij} + u_{jt}$$

Where:

FDI$_{ij,t}$ stands for bilateral FDI flows (from country *i* to country *j*) at time t[6]. As is standard practice in the gravity model, we will take the logs, rather than the level, of FDI flows as the dependent variable[7].

GDP Host$_{j,t}$ is the logarithm of the real GDP of the host country.

GDP Source$_{i,t}$ is the logarithm of the real GDP of the source country.

EXPMARS$_{i,t}$ is the *GDP Extended RIA Source* variable used by Levy *et al.* (2003). This variable is measured as the log of the joint GDP of the source country plus all the countries that are RIA partners of the source country. If the coefficient is negative, this variable captures FDI diversion/dilution.

RIA$_{ij,t}$ is a set of different country dummy variables as follows.

In a first specification, we construct a dummy that takes the value one at time t if the host country is a member of one of the following regional integration agreements: MERCOSUR, North American Free Trade Agreement (NAFTA), Andean Community (CAN), Central American Common Market (CACM), Caribbean Community (CARICOM), Australia-New Zealand Free Trade Area, Central European Free Trade Agreement (CEFTA), European Union, European Free Trade Association (EFTA). Gulf Cooperation Council (GCC) and Association of Southeast Asian Nations (ASEAN)[8], and zero otherwise.

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[5] The model is the same as that used by López and Orlicke (2005) with two additional variables (*Simisize* and *XMH*).

[6] According to UNCTAD, in the case of TNC associates and subsidiaries, FDI flows include the net sales of shares and loans (including non-cash acquisitions made against equipment, manufacturing rights, etc.) to the parent company, plus the parent firm's share of the affiliate's reinvested earnings, plus total net intra-company loans (short- and long-term) provided by the parent company. For TNC branches, FDI flows consist of the increase in reinvested earnings plus the net increase in funds received from the foreign direct investor. FDI flows with a negative sign (reverse flows) indicate that at least one of the components in the above definition is negative and not offset by positive amounts in the remaining components.

[7] Levy *et al.* (2002a) give several reasons for doing this. Firstly, the log specification provides a useful normalization that reduces the weight of pairs with very large FDI flows. Secondly, it allows interpretation of the coefficients of the continuous variables as elasticities. Lastly, it has typically provided the best fit in gravity equations.

[8] As to the date to be considered as marking the beginning of integration processes, we will follow Montenegro and Soloaga (2004) and Levy *et al.* (2003), who use the year of their creation (or re-launching, when an existing RIA is re-formed in the expectation of a significant change in trade and investment patterns). The years considered for each agreement are as follows: MERCOSUR (1991), NAFTA (1994), CAN (1991), CACM

Next, we divide the RIA variable into intra- and extra-regional FDI, which gives us two dummy variables. The *Intra-RIA*$_{ij,t}$ variable takes the value of 1 if the host and the source country are part of the same agreement at time t, and zero otherwise. The *Extra-RIA*$_{ij,t}$ takes the value of 1 if the host country is a member of one of the RIAs and the source country is not a member of it at time t, and zero otherwise. If the coefficient of *Intra-RIA* (*Extra-RIA*) is positive, it therefore captures intra-regional (extra-regional) "investment creation".

In the third specification, we divide the host countries belonging to an RIA into three groups depending on which RIA they belong to:

1) RIA1: CACM, CAN, CARICOM, MERCOSUR and NAFTA (in this case, the host countries are candidates to enter the FTAA)

2) European Union (EU)

3) Others: ASEAN, EFTA, Gulf Cooperation Council, Australia-New Zealand Free Trade Area and CEFTA[9].

Next, the *Intra-RIA* and *Extra-RIA* dummy variables used in the second specification were interacted with three dummy variables associated with the above-mentioned groups of RIAs. Thus we will have the following dummy variables: *Intra-RIA1*$_{ij,t}$, *Intra-EU*$_{ij,t}$ and *Intra-other*$_{ij,t}$, *Extra-RIA1*$_{ij,t}$, *Extra-EU*$_{ij,t}$ and *Extra-other*$_{ij,t}$[10]. The group of host countries with no RIAs will be our benchmark.

PRRH$_{j,t}$ is a variable that aims to capture the political and institutional environment in host countries, on the assumption that a good environment has a positive influence on FDI attraction. It is based on the Political Risk Index drawn up by the International Country Risk Guide (ICRG). The Index ranges from 0 to 100 points and is built with 12 weighted variables: Government Stability, Socioeconomic Conditions, Investment Profile, Internal Conflict, External Conflict, Corruption, Military in Politics, Religion in Politics, Law and Order, Ethnic Tensions, Democratic Accountability and Bureaucracy Quality. The higher the Index, the lower the host country risk.

Priv$_{j,t}$ is the amount involved in privatizations in the host country at period t. Privatizations could be associated with significant FDI inflows and with structural reforms in host countries that could also favor FDI.

Inflation$_{j,t}$ is the annual inflation rate in the host country at period t, to control for macroeconomic instability. We should expect a negative relation between inflation rates and FDI flows.

Simisize$_{ij,t}$ is an index of size similarity between countries. It takes values from -∞ (the log of the number near zero) in cases of perfect dissimilarity, and -0.69 [ln (0.5)] when

(1991), CARICOM (1973), ASEAN (1992), Australia-New Zealand Free Trade Area (1983), Gulf Cooperation Council (1982), CEFTA, EFTA and EU (various years depending on the country involved). For Canada and the United States, we have also considered the CUFTA (1989). Naturally, we have taken into account the effective date of entrance of each country into the RIA in question.
[9] Since our focus is on the impact of the FTAA and EU-MERCOSUR agreements, the inclusion of other regional integration agreements in our analysis is mainly to control for their effects on FDI as regards FTAA and EU countries.
[10] In *RIA1* we differentiate the NAFTA effect from the South-South RIAs (*Intra-RIA1N and Intra-RIA1S*)

countries are the same size. We should expect that countries of similar size have higher (horizontal) bilateral FDI flows. It is computed like in Di Mauro (2000):

$$Simisize_{ijt} = \ln\left[1 - \left(\frac{PBI_{it}}{PBI_{it} + PBI_{jt}}\right)^2 - \left(\frac{PBI_{jt}}{PBI_{it} + PBI_{jt}}\right)^2\right]$$

XMH$_{j,t}$ is the logarithm of the sum of the host country's exports and imports. It is a proxy of the openness of the host economy. We should expect a positive relation between this variable and FDI inflows. A positive relationship between FDI and external openness could mean that the predominant transnational strategy would be the vertical form.

BIT$_{ij,t}$ Bilateral Investment Treaties: this is a variable that takes a value of one if both countries (host and source) have a bilateral investment treaty signed and in force at time t, and zero otherwise[11]. This variable captures the average impact of these treaties on the FDI flows. We should expect a positive relation to FDI inflows[12].

φ_t are year dummy variables for the 1984-2002 period. These variables pick up the effects of any factors affecting bilateral investments that vary over time, are constant across pairs, and have not been included in the list of explanatory variables. In our case, they help to control for a spectacular increase in FDI over time[13].

α_{ij} are the country pair fixed effects. Our specification relies on panel data and includes country pair fixed effects in order to isolate the time series dimension of the integration process on FDI, and leave out the cross-sectional variation. Hence, these country pair fixed effects will subsume time-invariant pair-specific variables such as distance, borders, common language, or colonial links[14]. To some extent, these effects could also pick up differences in factor endowments not varying in time that could induce bilateral "vertical" FDI flows.

3.2 Model Specification for the Analysis of FDI Expansion Forms

Two additional specifications of the baseline model were used to identify probable links or associations between FDI flows in host countries and their commercial or export tendencies and patterns. This could enrich the identification and analysis of the predominant forms that FDI took in host countries during the period of study.

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[11] This variable only captures investment treaties independently of regional integration agreements. Some RIAS contain investment provisions, but they are not considered in this variable.

[12] Dee and Gali (2003), in contrast, found a lack of response of FDI to bilateral investment treaties.

[13] In general, the estimations of these dummy variable coefficients are not reported. The tables below that report our econometric estimations show F test results for time dummies as a whole.

[14] According to de Sousa and Lochard (2004), this methodology has several advantages. First, it reduces the risk of co-linearity between explanatory variables. Second, it allows control of the correlation between some explanatory variables and the error term. It also prevents estimation biases in the specification of FDI invariant determinants (like the distance variable, a common border or a common language dummy) since these determinants are accounted for in the bilateral specific effect (Pakko and Wall, 2001). Finally, since it focuses on the time series dimension, it makes it possible to capture the dynamic relation between integration and FDI. Thus, it answers the "good" economic policy questions (Glick and Rose, 2002; Micco *et al.*, 2003): Do countries that decide to form or join an integration process invest more in other member countries? Do countries that decide to form or join an integration process receive more FDI flows from non-partner countries?

First we substituted the openness variable (*XMH*) by external trade flows, specifically exports from host countries. This model specification was estimated for total bilateral flows, and then flows between developed countries and flows between developed and developing countries were separated for a new estimation. The objective is to test the hypothesis about the predominance of horizontal FDI in the relationship among developed countries, and vertical or another type of investment in FDI from developed to developing countries, and to analyze the principal differences that one form or another could have on the impacts of an integration process on FDI flows.

The variables included in the model were the following; all refer to the host country (sub index j):

$XH_{j,t}$ = total exports
$X\text{-developed}_{j,t}$ = exports to developed countries
$X\text{-developing}_{j,t}$ = exports to developing countries

Secondly, host country exports were differentiated by type of good, so as to obtain new elements that allow us to reinforce the results obtained in the previous specification. Variable XH was replaced by the following variables, all of which refer to the host country (sub index j):

$X\text{-food}_{j,t}$ = food exports
$X\text{-mining}_{j,t}$ = mining exports
$X\text{-manuftotal}_{j,t}$ = total manufacturing exports, which are divided into:
$\quad$ $X\text{-textil}_{j,t}$ = textile exports
$\quad$ $X\text{-chemical}_{j,t}$ = chemical exports
$\quad$ $X\text{-machequip}_{j,t}$ = machinery and equipment exports

3.3 Model Specification for the Winners and Losers Analysis

As was mentioned in 2.2, previous studies on this question do not identify which specific countries in regional integration agreements are winners or losers with respect to FDI. They only indicate general characteristics that could place a country in one or other category. In this paper, a first methodological approach to identifying and analyzing winners and losers in MERCOSUR in the framework of an amplified integration agreement was developed. This approach includes specific attraction variables in the model. This methodology allows us to capture the differentiated effect of internal and external FDI creation in each MERCOSUR country[15], although it is quite simple and not very sophisticated from an econometric point of view.

The first group of attraction variables is made up of dummies that aim to capture each country's specificities. They are the product of one dummy per country and FDI internal creation variables (*IntraRIA1*) and FDI external creation variables (*ExtraRIA1*) in the MERCOSUR integration agreement. As a result four variables for internal creation, one for each country (**Dargintra, Dbraintra, Dparintra** and **Duruintra**) were generated in the following way: *IntraRIA1 * country dummy* (1 for the country considered and 0 for others).

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[15] It was not possible in all cases to identify internal creation of FDI because of lack of information (we do not have information about intra MERCOSUR flows for Argentina and Uruguay).

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Also, four variables for external creation, one for each country (**Dargextra, Dbraextra, Dparextra** and **Duruextra**) were constructed in the following way: *ExtraRIA1 * country dummy* (1 for the country considered and 0 for others).

The second group of variables measures the relative size of each of the four countries, and it was constructed like the former group using the relative participation of each country in the RIA (evaluated by GDP) instead of a dummy per country[16]. Four variables were generated to measure internal creation (**Argintra, Braintra, Parintra** and **Uruintra**) with the following format: *IntraRIA1** (GDP of the country considered / MERCOSUR GDP); and four to measure external creation (***Argextra, Braextra, Parextra*** and ***Uruextra***) with the following format: *ExtraRIA1** (GDP of the country considered / MERCOSUR GDP).

With the first group of variables we tried to determine whether there was internal and external FDI creation in each MERCOSUR country, and also the differences that these countries present as FDI receivers. With the second group we aimed to measure if countries with different relative sizes attract different amounts of FDI and how they differ from each other[17].

The model was estimated in two ways. First we used fixed effects by bilateral relationship and second dummies per country excluding bilateral fixed effects, that is to say fixed effects per source and host country with other variables usually used in gravity models:

Distance: kilometers between capitals of each country in the bilateral relationship
Language: dummy that takes value 1 if the two countries have a common language and 0 otherwise
Contiguity: dummy that takes value 1 if the two countries have a common border and 0 otherwise

The data is the same as those described in López and Orlicki. Trade data is based on World Bank sources (World Investment Indicators), and the information on BITs is from UNCTAD.

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[16] A similar approach can be found in Dee and Gali (2003), and Velde and Bezemer (2004).
[17] In the same way, for exploratory purposes, we constructed variables of FDI attraction for each country taking into account a set of country-specific characteristics. The results were similar to those obtained with the other two groups of variables, although of lesser magnitude. They are presented in annex 2.

4. ECONOMETRIC RESULTS

4.1 FDI Expansion Forms

In table 1, the results of López and Orlicki (2005) (column 1) and the results of the baseline model (columns 2 to 5) are presented[18].

Table 1
Results of the Baseline with Simisize and XMH

	(1) Res. CENIT	(2) 1984-02	(3) 1984-02	(4) 1984-02	(5) 1984-1997
GDP Host	-0.62	-1.46	-1.47	-1.46	-1.79
GDP Source	5.60 ***	5.41 ***	5.61 ***	5.41 ***	8.15 ***
Simisize	---	1.61	1.61	1.62	2.64
Prrh	5.10 ***	5.11 ***	4.77 ***	5.16 ***	4.96 ***
Inflation	-0.98 ***	-0.99 ***	-0.96 ***	-0.99 ***	-0.61 **
Priv	0.04 **	0.04 **	0.03 **	0.04 **	0.03 *
BIT	1.30 **	1.26 **	1.15 **	1.28 **	1.32 *
XMh	---	0.28	0.34 (*)	0.28	0.53 **
IntraRIA1	2.94 **	2.91 **	---	0.10 **	2.43 (*)
IntraRIA1N	---	---	-0.10	---	---
IntraRIA1S	---	---	4.09 **	---	---
IntraEU	2.22 ***	1.74 (*)	1.75 (*)	0.06 (*)	1.49
Intraothers	3.18 **	2.88 *	2.90 *	0.10 *	0.96
ExtraRIA1	1.86 ***	1.78 ***	---	0.06 ***	1.31 **
ExtraRIA1N	---	---	0.87	---	---
ExtraRIA1S	---	---	2.39 ***	---	---
ExtraEU	3.73 ***	3.36 ***	3.35 ***	0.11 ***	3.84 ***
Extraothers	1.12 *	0.71	0.74	0.02	1.09
Expmars	-0.45 *	-0.43 *	-0.45 *	-0.43 *	-0.38 (*)
Obs.	14291	14024	14024	14024	10209
Groups	1495	1464	1464	1464	1233

*** significant at 1%, ** at 5%, * at 10%, (*) near 10%
Notes: i) all variables in log; ii) with year dummies 1985-2002; and iii) in column (3) the interaction between the RIA dummy variable and the log of the respective extended market of the RIA to which host country belongs; iv) Res. CENIT from López and Orlicki (2005).

Columns (2) to (4) show similar results to those given by López and Orlicki (column 1) for the estimation of coefficients of the control variables that are normally included in gravity models, GDP of source countries (*GDP Source*) and of host countries (*GDP Host*), notwithstanding the inclusion of two new variables: *Simisize* and *XMH*. *GDP Host* does not show a significant coefficient, even though internal market size and dynamic are the principal variables to which most empirical studies about determinants of FDI refer. This would be indicating that the horizontal FDI assumed to prevail in the world since the end of

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[18] We made estimations including proxies for human capital endowments like an approximation to include differences in factorial endowments as determinants of bilateral FDI. From 1990, information about the labor force in tertiary education for countries in the sample is only partially available, so the number of observations is considerably reduced. This variable was not significant, and it modifies the significance of other parameters that in most estimations were robust.

World War Two could have become less predominant in the closing decades of the twentieth century[19].

Some of the other variables included in general model yielded results that sustain the conclusion above. While *Simisize,* an index of similarity in size between source and host countries, has a non significant coefficient, *XMH*, which is designed to capture the effect of openness, has the expected sign although with a low level of significance. These results could be understood as weak evidence of greater influence of vertical FDI in the world average.

Bilateral investment treaties (BITs) have a positive and statistically significant effect on bilateral FDI flows. This is a robust result that appears consistently in different specifications of the model[20].

The other model variables retain their significance and show small changes in magnitude, with the exception of *IntraEU,* the variable designed to measure the effect of internal creation of FDI in EU countries, which is less significant than in the López and Orlicki results. This is explained by the inclusion of the openness variable (*XMH*). If *XMH* is eliminated from the estimation, the *IntraEU* coefficient is significant and high[21].

This result is interesting when it comes to prospective reflection about the potential impacts of integration agreements that the MERCOSUR could make with northern countries. It is well known that intra-European trade accounts for the biggest average share of total European trade, therefore intra-European trade should be one of the main factors in the *XMH* of those countries. It does not seem that the existence of the European Community / European Union in itself is what fosters FDI flows between these countries. It seems that what determines bilateral FDI flows is an increase in commercial flows as a product of the agreement or of other factors.

In column (5) the same specification is considered for 1984-1997. The aim here is to isolate the results obtained from the extraordinary FDI growth that took place at the end of the 1990s, which was linked to M&A and took place mostly in developed countries. We consider that this model specification cannot explain the reasons for this process[22].

The results for the model variables in this "normal" sub period are generally similar to those obtained for the complete period, although there are some variations in levels. In particular, the elasticity of bilateral FDI flows as regards host country external trade is

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[19] The results obtained have extremely small R^2 coefficients. F proofs support a significance level upper of 99%. These results rely on the inclusion of negative bilateral FDI flows. In order to try to explain why host country GDP is not significant, estimations were made using only positive bilateral FDI flows. In this case, the significance level of the model increase and *GDP Host* is significant. Estimations and a more detailed interpretation of the results are given in Annex 1.

[20] In contrast to this result, the World Bank (2003) says that "countries that had concluded a BIT were no more likely to receive additional FDI than were countries without such a pact". UNCTAD (1998) specifies that "with respect to its impacts on FDI, results of an aggregate statistical analysis do not reveal an independent significant impact of BITs on FDI flow determination". It is important to notice that BITs are not made between developed countries, which are the main countries in bilateral FDI flows.

[21] This comparison is valid for the estimation with the *IntraEU* dummy variable and with variables that interact between the *IntraEU* dummy and EU GDP.

[22] Estimations geared to studying the impact of M&A on FDI bilateral flows were carried out. In these estimations variables to measure this phenomenon (amounts bought and amounts sold, and dummies to differentiate the principal buyer and seller countries) were included. The estimations were not able to capture this phenomenon very well since the new variables were not significant.

significant and has a higher value than in 1984-2002[23]. In this period, the *IntraEU* variable is not significant, and this could support the hypothesis that trade flows determine FDI flows among EU countries.

The results obtained when the openness variable (*XMH*) is replaced by total exports for total flows and for flows between developed countries and from developed to developing countries are shown in table 2.

Table 2
Results of the Baseline with *Simisize*, *XH* and *X* by group of countries, 1984-2002

	Total			Between Developed Countries			From Developed Countries in Developing Countries		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
GDP Host	-1.46	-0.98	-2.17	-4.89	-4.71	-4.15	-2.31	-1.38	-3.91
GDP Source	5.41 ***	5.70 ***	5.60 ***	20.7 ***	20.7 ***	20.7 ***	7.63 (*)	7.88 (*)	8.16 *
Simisize	1.61	1.31	1.60	4.35	4.45	4.66	1.12	0.26	1.88
Prrh	5.11 ***	5.04 ***	5.24 ***	3.07	2.98	3.02	3.11 *	3.11 *	3.12 *
Inflation	-0.99 ***	-0.99 ***	-0.98 ***	1.62	1.67	1.61	-0.81 **	-0.75 **	-0.82 **
Priv	0.04 **	0.04 **	0.04 **	0.02	0.01	0.01	0.05 *	0.06 *	0.05 (*)
BIT	1.26 **	1.31 **	1.27 **	4.46	4.59	4.54	1.31 *	1.54 *	1.52 **
XMH	0.28			-0.13	---	---	0.55 *	---	---
XH		-0.33	---	---	-0.15	---	---	0.01	---
X-developed		---	1.45 ***	---	---	-0.34	---	---	2.79 ***
X-developing		---	-0.24	---	---	-0.27	---	---	-0.43
IntraRIA1	2.91 **	2.94 **	3.07 **	0.75	0.75	0.75	1.32	1.91	-0.1
IntraEU	1.74 (*)	2.24 **	1.63 (*)	1.32	1.30	1.36	Drop	Drop	Drop
Intraothers	2.88 *	3.25 **	2.73 *	2.15	2.13	2.13	Drop	Drop	Drop
ExtraRIA1	1.78 ***	1.83 ***	1.82 ***	-0.58	-0.59	-0.58	0.45	0.68	0.80
ExtraEU	3.36 ***	3.77 ***	3.22 **	2.68	2.64	2.68	Drop	Drop	Drop
Extraothers	0.71	1.14 *	0.69	-0.31	-0.27	-0.34	0.27	0.72	-0.02
Expmars	-0.43 *	-0.43 *	-0.41 *	-0.27	-0.27	-0.27	-0.63 *	-0.63 (*)	-0.52 (*)
Obs.	14024	14274	14187	5556	5556	5556	5668	5888	5802
Groups	1464	1495	1495	411	411	411	617	639	639

*** significant at 1%, ** at 5%, * at 10%, (*) near 10%
Notes: i) all variables in log; ii) with year dummies 1985-2002; iii) all columns with RIA dummy; and iv) in columns (4 to 6), BIT is 1 only in Germany-Portugal <u>in</u> 1984-85 and France-Israel in 1985-02. BITs, in general, are not made between developed countries.

The increase in total exports from host countries (*XH*) is not significant as an explanatory variable for received FDI flows in the total sample. But when exports are divided by destination country, those to developed countries have a positive and significant effect while those to developing countries are not significant (columns 2 and 3).

When bilateral investment flows among developed countries are analyzed, elasticity as regards source country GDP is the only variable that is significant in the explanation of

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[23] A Chow test of structural change parameters was carried out. The results refute the null hypothesis that parameters are constant.

bilateral FDI (columns 4 to 6). This could indicate a certain predominance of horizontal FDI (internal market seeking)[24].

When we analyze FDI from developed to developing countries, the coefficient associated with policy risk, inflation, BITs, privatizations, openness and source country GDP are significant (with different levels of significance and different values in different model specifications) . These results could suggest the existence of vertical or some other type of FDI. Estimated parameters for economic integration variables, in general, are not significant; with the exception of deviation effect (the *Expmars* coefficient is significant and negative).

The *IntraRIA1* variable was unable to capture the effects on FDI connected to regional agreements between the Latin American countries. It was only able to capture the increase in FDI flows from the USA and Canada to Mexico. On average, the impact of the NAFTA would not be significant.

On average, agreements between developing countries do not appear to have a positive impact on investment from developed countries, as can be seen from the significance of the coefficients of *ExtraRIA1* and *Extraothers*. Only trade dynamics, independently of agreements, seems to have impacted on FDI.

When we differentiate by export destination (column 9), exports to developed countries are positive and significant. This could indicate the predominance of resource-seeking FDI or the presence of the logic of an "export platform" associated with non horizontal forms of FDI.

The estimations of the baseline considering exports from host countries differentiated by type of goods – commodities and manufactures - are presented in table 3, and they seem to reinforce the above result. Exports of commodities or of goods more intensive in natural resources (*X-food*) are positive and significant, while exports of manufactured goods or with higher technological content (*X-manuftotal*) are not significant (column 1).

This result is similar in the case of FDI from developed countries in developing countries (column 4), where exports of manufactures are significant and negative. None of these variables are significant in the case of FDI between developed countries (column 3).

Finally, in estimations carried out with exports disaggregated by type of manufactured goods (*X-textil*, *X-chemical, X-machequip*) (column 2) included in the model, host country exports in goods intensive in labor (*X-textil*) are significant and positive in explaining total bilateral FDI flow increases. Exports of other goods with greater technological content or with greater added value (such as *X-chemical* and *X-machequip*) show a significant and negative relation[25]. This result is similar to the case of FDI from developed countries in developing countries (column 5)[26].

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[24] Neither total exports from developed countries nor exports by destination are significant in this model. The integration agreements have not significant effects on FDI. These results could mean that this model specification is not appropriate to explain bilateral FDI between developed countries.
[25] This model specification reduces the number of observation and some explanatory variables lose significance (*GDP*s, *BIT* and all integration variables).
[26] In the case of FDI between developed countries, not one of these variables was significant, confirming the result given above.

Table 3
Results of the Baseline with *Simisize* and *X* by group of countries
and type of goods, 1984-2002

	Total		Developed Countries	Developed in Developing Countries	
	(1)	(2)	(3)	(4)	(5)
GDP Host	-0.32	0.08	-4.89	0.44	1.53
GDP Source	5.66 ***	3.77 (*)	20.7 ***	6.98 (*)	1.2
Simisize	1.98	2.49	4.35	1.22	5.87 (*)
Prrh	5.17 ***	4.71 ***	3.07	3.82 **	4.67 **
Inflation	-1.01 ***	-1.62 ***	1.62	-0.77 **	-1.28 ***
Priv	0.04 **	0.03*	0.02	0.05 (*)	0.04
BIT	0.94 (*)	0.73	4.46	1.17 *	1.19 (*)
X-food	0.87 (*)	0.54	---	1.42 *	0.94
X-mining	-0.1	0.09	---	-0.48	-0.33
X-manuftotal	-0.42	---	---	-1.07 (*)	---
X-chemicals	---	-1.04 (*)	---	---	-1.04
X-machequip	---	-0.63 *	---	---	-0.99 **
X-textil	---	1.98 ***	---	---	2.33 ***
IntraRIA1	3.22 **	-0.52	0.75	2.37	-0.83
IntraEU	1.99 *	0.20	1.32	Drop	Drop
Intraothers	3.18 **	0.56	2.15	Drop	Drop
ExtraRIA1	2.02 ***	0.80	-0.58	1.51 *	1.67 (*)
ExtraEU	3.55 ***	0.53	2.68	Drop	Drop
Extraothers	1.01 (*)	-0.67	-0.31	0.97	-0.64
Expmars	-0.39 (*)	-0.17	-0.27	-0.51	-0.17
Obs.	13910	10742	5556	5559	4560
Groups	1486	1483	411	635	633

*** significant at 1%, ** at 5%, * at 10%, (*) near 10%
Notes: i) all variables in log; ii) with year dummies 1985-2002; iii) all columns with RIA dummy; and iv) *X-chemicals* and *X-machequip*: 1990-2002.

Previous results suggest that open expansion forms with resource seeking strategies (natural resources and cheap labor) account for most bilateral FDI from developed to developing countries. This FDI is related to TNC strategies involving greater integration, which have been significant since the last decade of twentieth century.

4.2 Winners and Losers

The results of the model for analyzing winners and losers are presented in table 4. The model was estimated with fixed effects by bilateral relationship (columns 1, 3 and 5) and with country dummies (columns 2, 4 and 6) including other variables usually used in gravity models. In the fixed effect columns, country effects were contrasted with two general variables, *IntraRia1* and *ExtraRia1*.

Taking into account the first group of variables (dummies) the MERCOSUR seems to have created significant intra-bloc FDI flows, even though the available information is poor and does not allow us to identify FDI flows to Argentina and Uruguay from other MERCOSUR countries. Brazil seems to have captured internal FDI flows.

Table 4
Results by MERCOSUR countries: Winners and Losers

	MERCOSUR countries with dummies		MERCOSUR countries with relative size			
	(1)	**(2)**	**(3)**	**(4)**	**(5)**	**(6)**
GDP Host	-1.23	-1.63	-1.21	-1.62	-1.20	-1.61
GDP Source	5.28 ***	6.04 ***	5.28 ***	6.04 ***	5.27 ***	6.05 ***
Simisize	1.18	0.63 ***	1.19	0.63 ***	1.19	0.63 ***
Prrh	5.35 ***	5.36 ***	5.35 ***	5.36 ***	5.40 ***	5.42 ***
Inflation	-1.05 ***	-0.98 ***	-1.05 ***	-0.98 ***	-1.05 ***	-0.98 ***
Priv	0.04 **	0.03 *	0.04 **	0.03 *	0.04 **	0.03 *
BIT	1.51 ***	0.82 **	1.50 ***	0.82 **	1.52 ***	0.82 **
XMh	0.42 *	0.38 *	0.42 *	0.38 *	0.42 *	0.38 *
IntraRIA1	1.97	1.63 *	1.96	1.62 *	0.07	0.06 *
IntraEU	1.72 (*)	0.99	1.72 (*)	0.99	0.05 (*)	0.03
Intraothers	2.72 *	1.98 *	2.72 *	1.98 *	0.10 (*)	0.07 *
ExtraRIA1	1.63 ***	1.80 ***	1.63 ***	1.79 ***	0.06 ***	0.06 ***
ExtraEU	3.25 **	1.25	3.25 **	1.25	0.11 **	0.04
Extraothers	0.64	0.42	0.64	0.42	0.02	0.01
Dargintra/Argintra	Drop	Drop	Drop	Drop	Drop	Drop
Dbraintra/Braintra	7.74 *	7.63 ***	1.82 *	1.79 ***	1.85 *	1.81 ***
Dparintra/Parintra	-0.15	-0.58	-0.09	-0.55	-0.07	-0.59
Duruintra/Uruintra	Drop	Drop	Drop	Drop	Drop	Drop
Dargextra/Argextra	-3.99 **	-3.80 **	-1.13 *	-1.07 **	-1.13 *	-1.07 **
Dbraextra/Braextra	3.34 **	1.88	0.79 **	0.45	0.80 **	0.47 (*)
Dparextra/Parextra	-3.92	-3.66 ***	-5.72	-5.38	-5.72	-5.37 **
Duruextra/Uruextra	3.59	4.15 (*)	3.14	3.66	3.14	3.67
Distance	---	-2.01 ***	---	-2.01 ***	---	-2.01 ***
Language	---	1.92 ***	---	1.92 ***	---	1.92 ***
Contiguity	---	0.81 *	---	0.81 *	---	0.81 *
Expmars	-0.47 *	-0.48 **	-0.47 *	-0.48 **	-0.47 *	-0.48 **
Obs.	14024	14024	14024	14024	14024	14024
Groups	1464	---	1464	---	1464	---

*** significant at 1%, ** at 5%, * at 10%, (*) near 10%
Note: i) With bilateral fixed effects: columns 1, 3 and 5; ii) without bilateral fixed effects and with dummies by country and other variables (language, distance and contiguity): columns 2, 4 and 6; iii) RIA-dummy: columns 1 to 4; iv) the interaction between the RIA dummy variables and the log of the respective extended market of the RIA to which the host <u>country belongs:</u> columns 5 and 6.

As regards external FDI creation, the MERCOSUR countries differ in their behavior as host countries. Brazil would be the "winner" inside the bloc and Argentina would clearly be the "loser". This differentiated behavior indicates that, during the period, while FDI flows in Brazil increased ahead of Brazilian economic and policy determinants and go beyond the general effect of *ExtraRIA1,* FDI flows to Argentina tended to decrease since the *Dargextra* coefficient is negative and greater than *ExtraRIA1*. In this period, investors reduced their FDI flows to Argentina, and these were below Argentina's growth potential. In the estimation without fixed effects the results are a little different: Uruguay emerges as the single possible winner, while Argentina and Paraguay would receive flows from extra-bloc sources that are below their capability[27].

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[27] In this estimation, when we consider the cross section model, that is when we emphasize why investors select one country or another country and not FDI evolution over time, the *Simesize* variable is significant. This

Estimations with the second group of variables (relative size) yield results that are similar, but lower as regards internal and external FDI creation. This would suggest a better fit than the estimation with the first group of variables.

External creation of FDI flows would be concentrated in Brazil (a significant and positive variable) and would be reduced in Argentina (a significant and negative variable). These results indicate that as Brazil grew relatively in the MERCOSUR-RIA (especially in 1998-2002); increased FDI inflows into the country were significant, while the relative fall in Argentina's share is linked to less FDI than Brazil received[28].

Estimations from the basic model were made including exports from the region and from the four MERCOSUR countries, and also including export destination (developed and developing countries). The objective of these estimations was to find some factors that would allow us to identify which types of FDI are leading regional inflows, and to link this FDI typology to potential winners and losers in an intensified integration process.

The results presented in table A-3 in the annex suggest that the increase in MERCOSUR exports to developed countries is a significant explanatory factor in the growth of FDI flows. The opposite happens with exports to developing countries. These results might indicate that investment in MERCOSUR is to a certain extent integrated into trade flows and FDI. Hence, if integration agreements are made between the MERCOSUR and NAFTA, and between the MERCOSUR and the EU, the region could receive increased FDI inflows linked to trade flows. The MERCOSUR countries do not all behave in the same way. These considerations about the MERCOSUR as a whole apply to Brazil, but in Argentina trade flows seem to have less of an effect on FDI inflows. This is explained by the greater influence exerted by the internal market and the privatization of public services as determinant factors in the FDI Argentina received in this period. In Paraguay and Uruguay trade flows were not significant.

These results tend to show that Brazil and Argentina would be winners, but with the differences noted above in their behavior. FDI in Brazil appears more connected to positive trade flows to source countries. The role of trade openness as a factor determining FDI was identified and analyzed in Bittencourt and Domingo (2002). A similar result was obtained with a different econometric approach: exports and trade openness to countries outside the region are determinant factors in FDI inflows[29].

shows that internal market size is important in investors' decisions, while MERCOSUR is not an important determinant in extra-bloc investors' decisions to invest in Brazil. However, as is shown in the fixed effect model, the MERCOSUR could have contributed to determining the evolution over time of Brazil's FDI inflows. The perception of Uruguay as a possible "winner" differs from the results obtained in previous studies.

[28] In this case, estimations without fixed effects are similar to those we have already mentioned. The MERCOSUR would determine FDI movement more than the option of Brazil as an FDI destination. With all other variables equal, FDI in Brazil grows more than in the other MERCOSUR countries. It is known that in the second half of the 1990s (Laplane et al., 2002) Brazil received big FDI inflows through M&A, particularly in public services privatizations. Perhaps our *Priv* variable is not enough to capture the extent of this phenomenon, which is contemporary with the MERCOSUR dummy, so this factor could be a partial influence on this last variable.

[29] This result seems more or less to contradict the predominance of "market seeking" FDI identified in other studies, and there are two possible reasons for this. First, we have already mentioned that when we analyze the model with fixed effects in each bilateral relationship we are emphasizing the estimation "with in" (the movement of each relationship), more than the capacity to capture the level or absolute amount. Second, there might be an endogeneity problem between exports and GDP, a key aspect of our previous study but one which seems not to be important in this study as, in general, host country GDP is not significant.

5. CONCLUSIONS

A first interesting point that emerges from the analysis is that host country GDP does not have a significant coefficient, and internal market size and dynamics are the most significant variables in FDI determinant studies. This indicates a change in FDI forms from horizontal to vertical and/or complex. The form that FDI among countries takes allows us to profile winners and losers as regards FDI flows in the framework of regional integration agreements.

Another result that reinforces the above is that there is a positive relationship between FDI flows and trade openness (*XMH*). The variable which measures the internal FDI creation effect for EU countries (*IntraEU*) loses significance when we include the *XMH* variable in the model, because the principal market for EU exports is the EU itself. Intra-European trade operates as a determinant of trade openness, and this has a positive effect on FDI flows. This result indicates that one of the main determinants of FDI flows is increased trade flows (as a consequence of an integration agreement or because of other factors). When we evaluate possible agreements to expand MERCOSUR integration, this behavior must be taken into account. If this increase means increased trade flows, the countries could have associated increased FDI flows. But an agreement is not in itself sufficient to increase FDI inflows, there would have to be a previous or simultaneous change in the MERCOSUR countries' main international insertion strategy.

When we reduce the period of analysis to remove distortions generated by the mergers and acquisitions that took place in the 1990s, the results show that FDI increases could be associated to external creation of FDI in countries that could join the FTAA and also in the EU. At the same time there is greater elasticity in bilateral FDI flows related to foreign trade.

Horizontal FDI (oriented to the internal market) would predominate in bilateral flows among developed countries; elasticity associated to the GDP of the source country is the only significant variable in explaining the movement of FDI flows. In FDI flows between developed and developing countries, other variables besides the GDP of the source country are significant: trade openness, political risk, privatizations, inflation, and bilateral investment treaties (*BITs*), so these results indicate that horizontal forms of transnational expansion are not the principal determinants of bilateral FDI movements.

The above hypothesis is supported by the results obtained when we differentiate host country exports by type of good. In the case of FDI among developed countries, no export variables were significant. In FDI from developed to developing countries, the results show that open expansion forms of the "resource seeking" type (natural resources and labor) are the main factor in explaining the pattern of FDI movement. This means that TNCs have developed strategies of greater integration which have been most important since the last decade of the 20th century. In this case the variation in total *X* is positive and significant, and so are exports of primary goods or of those more intensive in natural resources, but exports of industrial goods or of those with greater technological content seem to impact negatively and significantly on the increase in bilateral FDI flows. It may be that complex international forms of integration are progressing more slowly than was foreseen in other studies, or that these are not the best variables to capture this impact.

Previous results could indicate that if FTAA and MERCOSUR-EU agreements lead to an increase in trade flows –as can be expected- and these flows have a positive impact on FDI flows, then the predominant forms of expansion would be open/resource seeking forms, since these agreements involve relationships between developed and developing countries.

In the analysis of which countries would be winners or losers as attractors of FDI in the framework of MERCOSUR, the estimation results (using a special methodological approach – the inclusion of specific attraction variables) show that different countries behave differently. Brazil would be the only "winner" inside the bloc and Argentina would probably be the "loser" as regards the external creation of FDI. With the rest of the variables in the model, particularly the *ExtraRIA1* effect, being equal, FDI flows in Brazil would increase over general determinants during the period, and foreign investment in Argentina would tend to decrease with respect to the country's potential.

The results for the small economies, on the other hand, are not so significant. They show that Uruguay is near to being a "winner" and Paraguay a "loser", both in relation to that country's potential as defined by changes in other variables.

A significant factor in the increase in FDI flows into the MERCOSUR countries has been the growth in exports from the bloc to developed countries. This indicates that investment in the region is correlated to a certain extent with trade flows from the MERCOSUR countries. If integration agreements with the EU and with the NAFTA materialize, the MERCOSUR will receive increasing FDI flows associated with the additional trade flows that these agreements would generate. These considerations for the whole of the MERCOSUR also apply to Brazil, but in Argentina the main determinants of FDI would be the internal market and the privatization of public services (trade flows seem to have a decreasing effect on FDI flows). The above results show that Brazil would be a "winner" and Argentina a "loser" (trade flows are not significant in FDI in Paraguay and Uruguay).

The results of the winners and losers analysis are not sufficiently robust to allow us to project the potential impacts of FTAA or EU agreements on FDI flows to the MERCOSUR countries, when we start from variables that represent existing integration agreements using dummies or the "*extended market*". The gravitational model does not suitably capture phenomena or FDI forms that had great weight during the period analyzed. But it is very difficult to include control variables in these models since there are no countries comparable to those of the MERCOSUR that have previous experience in enlarged agreements with the EU or the NAFTA.

On the contrary, identifying the forms of FDI that predominate in some bilateral relationships seems to offer a better option for making projections as to the effects of agreements with the northern countries. In particular, it would be possible to establish a link between potential trade flow increases and the FDI that the MERCOSUR countries would receive, if we link the agreements to a change in the form of FDI that is currently dominant in the MERCOSUR, from horizontal to vertical or complex (the latter associated with trade flows, from the perspective of developing countries). The results support the hypothesis that trade flow growth is the determinant factor in a great part of intra-European FDI (and probably of the FDI received by Mexico when this country joined the NAFTA), and matters more than making an integration agreement. In other words, if the integration agreement does not generate new trade flows (before, at the same time as, or as a

consequence of FDI received), there will probably not be a significant increase in FDI flows.

How would this structure of winners and losers change if the FTAA and the MERCOSUR-EU agreements materialize and come into force? Which countries in the integration agreements would be better able to make a change to export strategies?

We can only offer tentative answers to these questions or express concern about possible scenarios for the future. One possibility is that the FTAA and EU agreements may accentuate existing differences in external capture of FDI, and Brazil and Uruguay would tend to consolidate their winning positions while Argentina and Paraguay would be losers.

Brazil has a higher level of industrial development and is supported by the development of internal scale economies, so there is greater potential for TNC affiliates to change from "market seeking" strategies to strong exports strategies, supported by exports to other developing countries and some specialized exports to developed countries.

Uruguay's potential has to do with its geographical location as an entry and exit point for the MERCOSUR, and also with its well-developed natural resources, and the country could move towards vertical or complex strategies. The principal problem could be to induce entry TNCs to produce goods with greater value added in the framework of their vertical strategies, which are dominant in this country. This could avoid or compensate for the tendency of FDI to generate "enclaves" geared to natural resources.

Argentina seems to be in an intermediate situation. There is potential for a change to export strategies that go beyond natural resources, and this seems to depend increasingly on the possibility of obtaining scale economies inside the MERCOSUR. Today this situation seems to be very complicated.

The central problem for Argentina and Uruguay is that they have very low average long term growth rates closely linked to volatility in the two economies (Bittencourt, 2003c). Their economies are very interconnected and greater integration into the MERCOSUR, principally with Brazil, is a key factor in the possibility for industrial development (Bittencourt, 2003b).

Paraguay is by far the most worrying case, with its intra-territoriality, high poverty levels, late economic evolution and high levels of informality in the economy. All this means Paraguay has less potential than its partners to capture FDI.

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ANNEX 1: Estimations with Positive FDI

Here we give the estimation results using only positive bilateral FDI flows (table A-1). Between 1998 and 2001, there were big negative bilateral FDI flows, principally among developed countries and specifically among European countries. This phenomenon is a reflection of the wave of mergers and acquisitions among major TNCs that took place in the period. To reduce the weight of this transitory phenomenon we estimated the model only with positive FDI flows[30].

This exercise is intended to explain why host GDP is not significant in the model. If a model with positive FDI flows were valid it would mean that the specification we are using is suitable for capturing the reasons why investors increase their flows to countries where they are already installed (FDI reinvestment), but it is not so appropriate when it comes to explaining the decision to select one particular country for bilateral FDI (null option), or to understand what causes net FDI outflows.

Table A-1
Results of the Baseline with Simisize and XMh 1984-2002
(positive bilateral FDI)

	Total		Developed Countries	Developed in Developing Countries
	With Simisize	**Without Simisize**		
GDP Host	0.15	0.35 **	1.23 ***	0.51 *
GDP Source	1.44 ***	1.42 ***	2.04 ***	1.54 **
Simisize	0.41 *	---	0.59	-1.11 ***
Prrh	0.67 ***	0.67 ***	0.57 (*)	0.98 ***
Inflation	-0.36 ***	-0.36 ***	1.01 ***	-0.24 ***
Priv	0.01**	0.01**	0.01	0.01 ***
BIT	0.42 ***	0.41 ***	0.05	0.25 ***
XMh	0.02	0.02	-0.73 ***	0.06 (*)
IntraRIA1	0.61 ***	0.61 ***	-0.94 **	-0.15
IntraEU	0.54 ***	0.54 ***	0.29	Drop
Intraothers	0.43 **	0.43 **	-0.13	Drop
ExtraRIA1	-0.06	-0.06	-0.67 ***	0.06
ExtraEU	0.67 ***	0.67 ***	0.28	Drop
Extraothers	0.15 *	0.15 *	-0.33	0.1
Expmars	0.08 **	0.07 **	0.01	0.05
Obs.	10778	10778	4449	4370
Groups	1377	1377	401	593

*** significant at 1%, ** at 5%, * at 10%, (*) near 10%
Notes: i) all variables in log; ii) with year dummies 1985-2002; iii) the interaction between the RIA dummy variables and the log of the respective extended market of the RIA to which the host country belongs; and iv)) in column of developed countries, BIT is 1 only in Germany-Portugal in 1984-85 and France-Israel in 1985-02. In general, developed countries do not enter into BITs with each other.

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[30] We eliminated 3,246 observations: 1,593 negatives and 1,653 nulls. This yielded improved model explanatory capacity.

In this model (with positive flows) a difference from the previous formulation is that reinvestment decisions are explained basically by factors associated with the home market and the host's internal market. The *Simesize* variable (column 1) and source country GDP are significant, but if we eliminate the first variable (column 2) it is the only situation where elasticity related to host country GDP is significant and with the expected sign (although with a lower value than source country GDP). In neither of these cases is openness significant. This would support the idea that horizontal FDI is dominant in "reinvestment" decisions.

Almost all coefficients that associate integration processes with FDI flows are significant but with less magnitude that those obtained in estimations with total flows. This means more limited potential increases (probably more "rational") and it is congruent with the fact that FDI increase perspectives in integration processes are not important when expansion forms are "market seeking". In this case, in general, integration processes mainly determine investment restructuring.

In positive FDI flows among developed countries, the dynamics of the source market and of the host markets are the main explanation of these flows, while openness is significant and has a negative sign. This confirms previous results about a possible predominance of horizontal FDI among developed countries.

In FDI flows from developed to developing countries, variables that explain integration processes are not significant.

ANNEX 2: Winners & Losers; Third Group of Specific Attraction Variables

To explore an alternative methodology that helps to capture or to identify winners and losers in RIAs more clearly, we carried out an exercise estimating the model including variables geared to measuring the FDI attraction of each country considering a set of country-specific characteristics. We constructed internal and external FDI attraction variables for each country. Market size (*GDP Host*) increased the size effect (*GDP H+RIA*), privatizations (*Priv*) and openness of trade flows (*XMH*) are considered as positive determinants, while inflation (*Inflation*) and political risk (*Prrh*) are considered as negative determinants[31]. The results obtained with these variables (table A-2) were similar but lower than those obtained with the other two groups of variables (table 4).

Table A-2
Results by MERCOSUR countries:
Winners and Losers

	(1)	(2)
GDP Host	-1.20	-1.61
GDP Source	5.23 ***	6.01 ***
Simisize	1.20	0.64 ***
Prrh	5.29 ***	5.30 ***
Inflation	-1.07 ***	-0.99 ***
Priv	0.04 **	0.03 *
BIT	1.55 ***	0.82 **
XMh	0.40 *	0.37 *
IntraRIA1	1.95	1.94 **
IntraEU	1.74 (*)	1.01
Intraothers	2.74 *	1.99 *
ExtraRIA1	1.63 ***	1.81 ***
ExtraEU	3.26 **	1.27
Extraothers	0.65	0.43
A-Argintra	Drop	Drop
A-Braintra	0.27 *	0.25 ***
A-Parintra	0.04	0.11
A-Uruintra	Drop	Drop
A-Argextra	-0.15 **	-0.14 **
A-Braextra	0.12 **	0.07
A-Parextra	0.02	0.03
A-Uruextra	0.32	0.29 ***
Distance	---	-2.01 ***
Language	---	1.92 ***
Contiguity	---	0.83 *
Expmars	-0.47 *	-0.48 **
Obs.	14024	14024
Groups	1464	---

*** significant at 1%, ** at 5%, * at 10%, (*) near 10%
Note: i) all variables in log; ii) column (1) with RIA-dummies; and iii) column (2) without bilateral fixed effects and with dummies by country and other variables (language, distance and contiguity).

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[31] Variables were constructed as the interaction among dummies of each country's internal and external attraction, and variables that represent positive and negative determinants. Four variables for internal creation (*A-Argintra, A-Braintra, A-Parintra, and A-Uruintra*) and four for external creation (*A-Argextra, A-Braextra, A-Parextra, and A-Uruextra*) were generated.

ANNEX 3: Baseline for MERCOSUR Countries Exports by Destination

Table A-3
Results by MERCOSUR countries with X by groups of countries
1984-2002

	Total MERCOSUR		MERCOSUR's countries	
	Total X	X by group of countries	Total X	X by group of countries
	(1)	(2)	(3)	(4)
GDP Host	-1.35	-1.11	-1.26	-1.18
GDP Source	5.47 ***	5.29 ***	5.36 ***	5.35 ***
Simisize	1.37	1.34	1.16	1.31
Prrh	5.13 ***	5.04 ***	5.30 ***	5.24 ***
Inflation	-0.94 ***	-1.01 ***	-1.01 ***	-1.01 ***
Priv	0.04 **	0.03 *	0.04 **	0.04 **
BIT	1.21 **	1.46 **	1.49 **	1.42 **
XMh	0.31	0.37 (*)	0.39 *	0.41 *
MercoXtotal	0.05	---	---	---
MercoXdesa	---	4.63 ***	---	---
MercoXendesa	---	-4.56 ***	---	---
ArgXtotal	---	---	-0.17 **	---
BraXtotal	---	---	0.13 **	---
ParXtotal	---	---	-0.19	---
UruXtotal	---	---	0.16	---
ArgXdesa	---	---	---	-0.18 **
BraXdesa	---	---	---	0.14 **
ParXdesa	---	---	---	-0.19
UruXdesa	---	---	---	0.17
IntraRIA1	2.66 *	2.62 *	2.90 **	2.93 *
IntraEU	1.73 (*)	1.71 (*)	1.72 (*)	1.79 (*)
Intraothers	2.89 *	2.83 *	2.75 *	2.79 *
ExtraRIA1	1.55 ***	1.57 ***	1.63 ***	1.65 ***
ExtraEU	3.37 ***	3.34 ***	3.27 ***	3.35 ***
Extraothers	0.71	0.66	0.65	0.68
Expmars	-0.42 *	-0.42 *	-0.45 *	-0.42 *
Obs.	14007	13920	14007	13921
Groups	1464	1464	1464	1464

*** significant at 1%, ** at 5%, * at 10%, (*) near 10%
Note: i) all variables in log; ii) with RIA-dummies; and iii) the new variables were constructed as the interaction between trade variables and country dummies (Example: *ArgXtotal = Xtotal * Dargextra*)

ANNEX 4: List of Countries in the Database

<u>OECD Outflows Database:</u>

Host Countries: Argentina, Brazil, Canada, Chile, Colombia, Costa Rica, Mexico, Panama, the United States, Venezuela, Australia, Austria, Belgium-Luxembourg, Czech Republic, China, Denmark, Finland, France, Germany, Greece, Hong Kong, Iceland, India, Indonesia, Iran, Ireland, Israel, Italy, Japan, Korea, Kuwait, Malaysia, the Netherlands, New Zealand, Norway, Philippines, Poland, Portugal, Romania, Russia, Saudi Arabia, Singapore, Slovak Republic, Slovenia, South Africa, Spain, Sweden, Switzerland, Thailand, Turkey, the United Arab Emirates, the United Kingdom.

Source Countries: Australia, Austria, Belgium-Luxembourg, Czech Republic, Denmark, Finland, France, Germany, Greece, Hong Kong, Iceland, Ireland, Italy, Japan, Korea, Netherlands, New Zealand, Norway, Poland, Portugal, Slovak Republic, Slovenia, South Africa, Spain, Sweden, Switzerland, Turkey, the United Arab Emirates, the United Kingdom.

<u>Countries added to the database on the basis of UNCTAD and ECLAC information on FDI inflows</u>

Argentina, Brazil, Paraguay, Uruguay, Bahamas, Bolivia, Canada, Chile, Colombia, Costa Rica, Dominican Republic, Ecuador, El Salvador, Guatemala, Guyana, Haiti, Honduras, Jamaica, Mexico, Nicaragua, Panama, Peru, Suriname, Trinidad and Tobago, the United States, Venezuela.