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Regional integration and foreign direct investment: the potential impact of the FTAA and the EU-MERCOSUR agreement on FDI flows into MERCOSUR countries: winners and losers

BITTENCOURT, Gustavo; DOMINGO, Rosario and REIG, Nicolás
DECON/FCS[1]

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Regional integration and foreign direct investment: the potential impact of the FTAA and the EU-MERCOSUR agreement on FDI flows into MERCOSUR countries: winners and losers

Gustavo Bittencourt
Rosario Domingo
Nicolás Reig L.[1]

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1. INTRODUCTION

The purpose of this paper, that complements the working paper of Lopez and Orlicki, presented previously in this document, is to analyze some additional issues related to foreign direct investment (FDI) and to the development of regional integration agreements (RIA).

Firstly, we include additional variables to the baseline model of FDI determinants. These variables are related to the external sector and to the relative size of economies that are involved in each bilateral relationship. They allow us to obtain some conclusions about FDI expansion forms in MERCOSUR countries and to progress in the analysis of which could be transnational corporations (TNC) most probably strategies in the frame work of new integration agreements, particularly, if it is possible that some of these enterprises could follow complex integration strategies. These new expansion forms have been becoming important in world economy in the last years, and they go beyond the "horizontal" and "vertical" TNCs strategies that have been traditional in MERCOSUR countries.

Secondly, as estimations with the general model only allow to capture the average impact of integration agreements, the analysis of "winners" and "losers" is disaggregated at country level, with the purpose to consider possible effects of agreements on each MERCOSUR country in the frame work of ALCA and MERCOSUR-EU.

The paper is organized in the following form: first, we presented an analysis of the evolution of bilateral FDI flows and the relationship between external openness and investment. Second, different theoretical and methodological issues linked with gravity

models and that affect the objectives of this research are discussed, as well as theoretical issues related to complex integration strategies and the analysis of winner and losers. Third, we present the econometric model. Fourth, the empirical results related to FDI expansion forms and to winners and losers in integration process are described, particularly possible winners and losers among MERCOSUR countries in an agreement with ALCA or EU. In the last part, the main conclusions of the research are presented.

1.1 FDI bilateral flows

World bilateral flows of FDI increased between 1983 and 2003. Flows from the European Union (EU) had a clear predominance and determined the global trend. EU flows also induced a strong fluctuation in the global trend of world FDI observed in 1998-2002. Between 1997 and 2000, world bilateral FDI multiplied by three, FDI outflows of the European countries to countries not belonging to the EU decrease, meanwhile bilateral flows among the countries of EU agreement multiplied by five. At the end of the analyzed period (2003) FDI reached the levels of 1997 (figure 1).

Figure 1
Bilateral FDI, 1983-2003
(U$S millions)
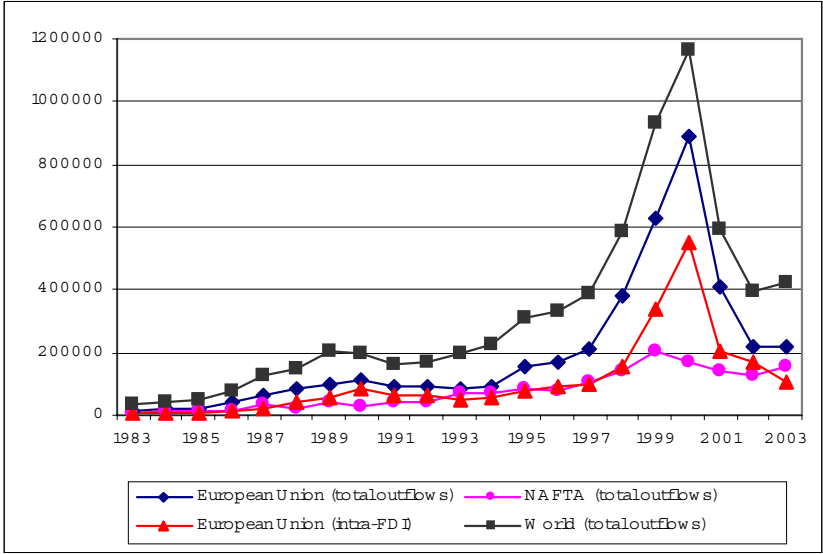
Source: Own elaboration on the basis of OECD (2004).

The increase of bilateral FDI flows observed at the end of the nineties has been strongly associated with the wave of cross-border mergers and acquisitions (M&A) that have been mainly concentrated on enterprises of developed countries. The European transnational corporations (TNC) have played the main role in this progress. They have fulfilled near 70% of the purchases, between 1998 and 2000 (figure 2).

These cross-border mergers and acquisitions were concentrated on the EU and the NAFTA, the most important sellers. The presence of the EU as the principal buyer and

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seller is a confirmation that the increase in bilateral FDI flows among European countries has been strongly related to M&A (figure 3).

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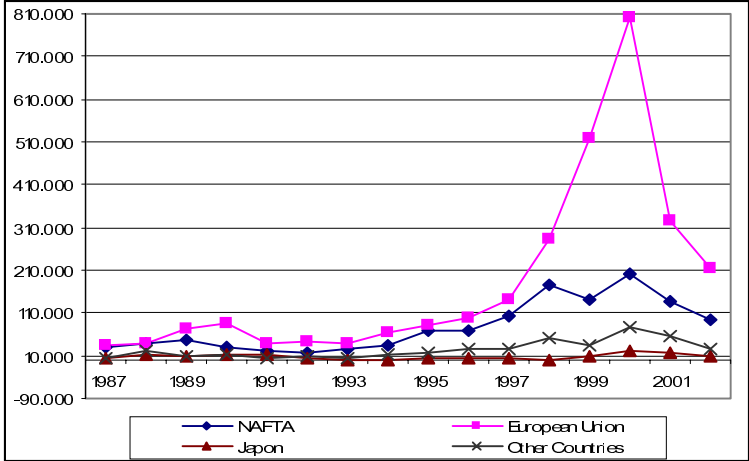
Source: Own elaboration on the basis of UNCTAD (2003 and 2004).

Figure 3
Cross-border Mergers & Acquisitions, by Region of Seller,
1987-2002
(U$S millions)
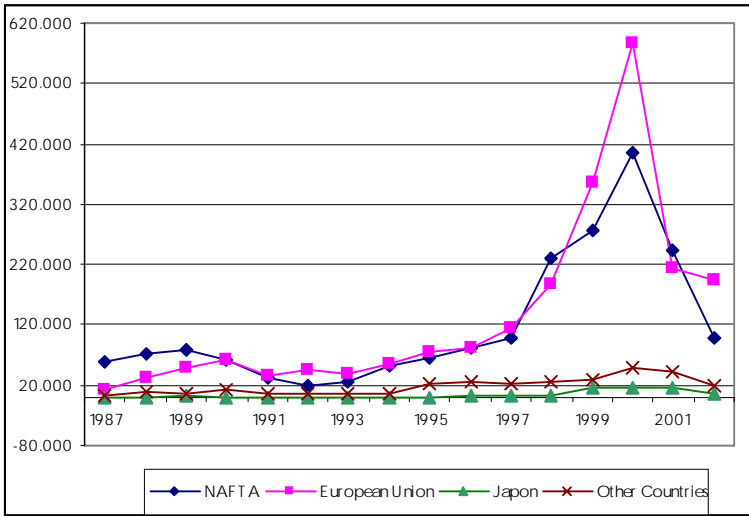
Source: Own elaboration on the basis of UNCTAD (2003 and 2004).

Bilateral FDI flows to MERCOSUR countries have shown a similar trend with global flows. During the eighties the inflows to the region were very low, although they tended to grow slightly. From the first years of the nineties these inflows increased sharply. At the end of this decade, in accordance with the evolution of world FDI, MERCOSUR countries duplicated the inflow of FDI.

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The principal source of this FDI was the EU countries and their investments were mostly related to the privatization of public enterprises at the beginning of the decade, and to the wave of cross-border mergers and acquisitions observed in the world at the late 90's. Even though the information sources of M&A process are not entirely comparative with the data of FDI registered at the balance of payments statistics, we can assert that an important percentage of the investment received by MERCOSUR countries during the nineties belonged to M&A (figure 4). The evolution of bilateral investment flows among MERCOSUR countries and the principal investors in the region was not necessarily determined by the integration agreement, though it coincides in time with the establishment of the expanded market. Instead, these flows followed the trend observed in the world economy.

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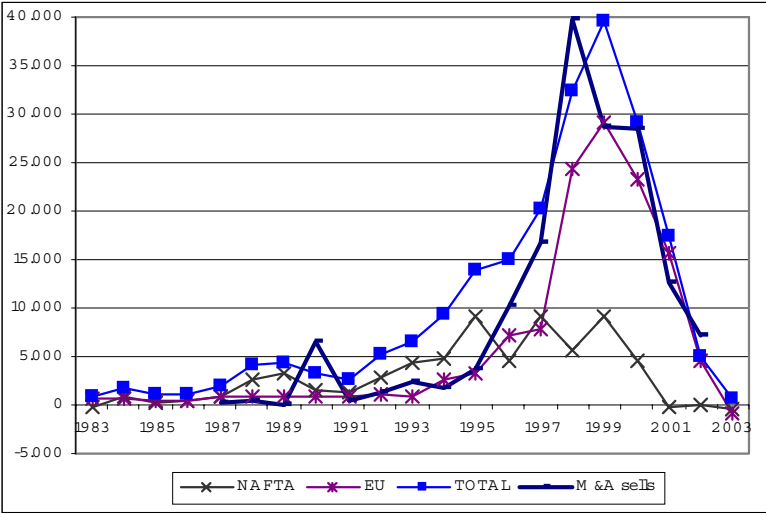
Source: Own elaboration on the basis of OCDE (2004) and UNCTAD (2003 and 2004).

The importance of this trend makes necessary to discriminate a more "normal" period of FDI inflows to the region (1984-1997) to evaluate the conclusions that we could extract when we incorporate in the model a phenomenon that is unlikely to happen in the next future with such magnitude.

1.2 FDI and trade openness

The external openness of economies, measured as the sum of trade flows (exports and imports) on the gross domestic product (GDP), is a variable of interest in the analysis of winners and losers of FDI in the framework of an integration process. Different theoretical approaches propose that the most open economies are those that have the greatest possibilities to capture FDI. As we propose in the next section, traditional expansion forms of TNCs (horizontal or market seeking) could be yielding space to vertical or complex forms which involve more intensive external trade. It could be possible to associate a great

level of external openness with more open transnational expansion forms which could attract FDI, particularly FDI from developed to developing countries.

This relationship between FDI and external openness would appear to be confirmed by some examples. Asian countries, the member of Agreement of South Eastern Asian Nations (ASEAN) as well as China, Hong Kong and Korea present a correlation between the openness degree and the participation of FDI on the GDP, as it is shown in figure 5.

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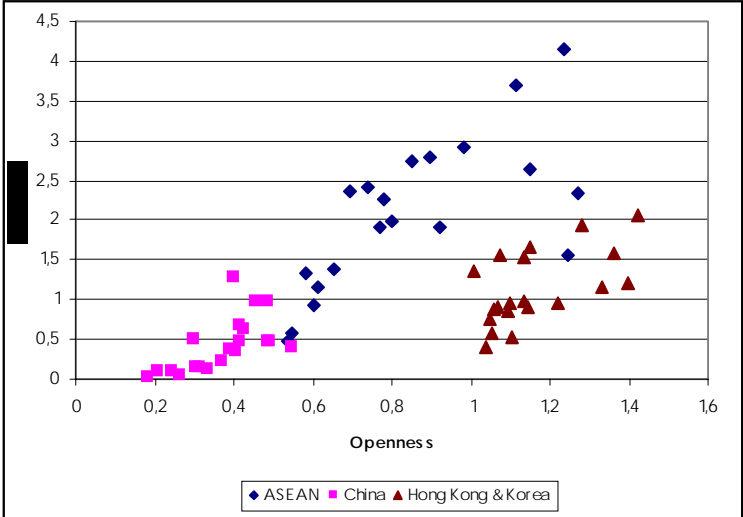
Source: Own elaboration on the basis of OCDE (2004) and World Bank (2004).

In the case of Mexico and the regional integration agreements (RIAs) developed among Latin America countries, this relationship only appears in the Central America Common Market (CACM) and in Mexico, and it is not present in MERCOSUR and the Andean Community (CAN) (figure 6).
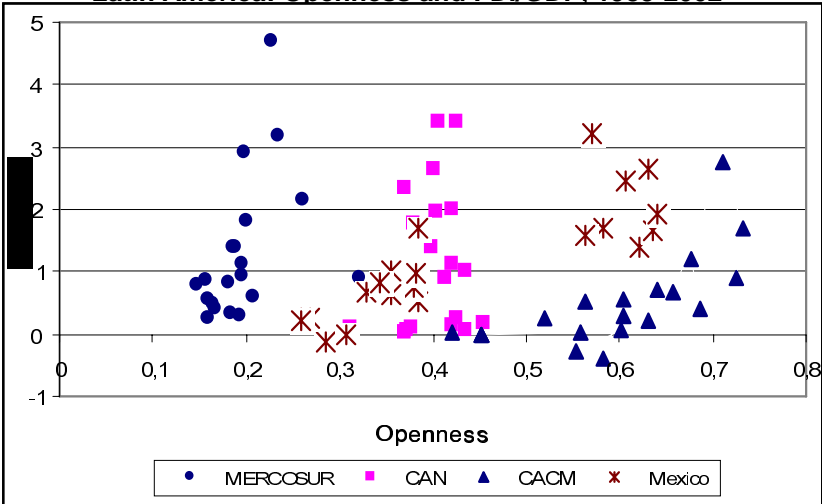
Figure 6
Latin America: Openness and FDI/GDP, 1983-2002

Source: Own elaboration on the basis of OCDE (2004) and World Bank (2004).

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2. THEORETICAL ISSUES

Some topics that complement the theoretical framework presented in Lopez and Orlicki working paper shown previously were discussed in this paper. First we present some issues that contributes to enrich the theoretical base of gravity models and to select the variables to incorporate in the descriptive model. Particularly, issues that allow us to consider different strategies that TNC could follow in the frame work of the new integration agreements that MERCOSUR countries are exploring. Secondly, different approaches about winners and losers in the regional integration agreements are analyzed. The way in which "current" winners (losers) can become losers (winners) in the context of an integration agreement with developed countries depends on the possibilities to generate a transition towards strategies that are currently becoming important in the TNC global behavior.

2.1 Theoretical aspects related to gravity models and transnational expansion forms

The gravity models include a set of descriptive variables as GDP of the host and the source country, the distance between both countries, GDP of the integration agreement to which both countries belong to, and other variables that define particular characteristics of the countries (for example, trade openness degree, privatizations, politic risk). The combination of different theoretical issues presented 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 define the variable set to be included in the descriptive model and to identify predominant transnational expansion forms. This will enrich the theoretical base of gravity models.

Markusen and Maskus (2001) indicate the existence of two basic models to include transnational firms in the traditional theoretical approaches of 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 it principal strategy is "market-seeking". In the vertical model, the firm separate different steps of its chain value in order to take advantage of factor price differentials across countries ("resource-seeking" strategy). The first model could characterize most FDI flows among developed countries, where TNCs would obtain advantages over domestic firms, by the presence of 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 to imports.

These authors integrate both models in a new theoretical frame ("knowledge-capital" model) which allows to analyze the determinants of three strategies or expansion forms: domestic, horizontal and vertical, and make predictions about the relationship between TNC's affiliates and trade. They indicate that affiliate's production and the trade of some specific good could be substitutes in the "horizontal" model while they could be complementary in the "vertical" model. These authors, using the "knowledge-capital" model, suggest that affiliates' production and trade tend to be substitutes between similar

countries, and to be complementary when countries have great differences in their relative factor endowment.

Starting from a division between "open" and "closed" forms of transnational expansion, as it is usually in the literature about TNC, especially in those interpretations that attempt to link TNCs strategies with their external trade, Bittencourt (2003) associates these forms with the categories defined in the analytic framework proposed by Dunning (1993), differentiating among 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 opened or oriented to external markets) and entry forms of FDI. Basic expansion forms include semi-open forms, which can imply a market seeking logic in regional markets, as well as 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 external trade, especially to export, if FDI is located in developing countries[2].

Therefore, it is important to consider simultaneously the question of transnational expansion forms and FDI determinants. In the baseline model we include two additional variables: *Simisize*, an indicator of similar countries size which could allow to capture horizontal transnational expansion forms; and *XMH* that represents the external openness of the host economy. In other model specifications we include variables that represent the export projection to capture some issue that allow us to identify predominant expansion forms in bilateral relationship 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). It is important to consider other two new tendencies of FDI besides those two TNCs strategies -just like UNCTAD does in its World Investment Reports 2004-, the role that cross-border mergers and acquisitions (M&A) has played in the increase of FDI and the "complex integration strategies" increasingly followed by TNCs that are both horizontally and vertically integrated. Yeaple (2003) has defined this type of TNCs as those which establish affiliates in some foreign countries to avoid transport cost and establish affiliates in others to take advantage of factor price differentials. This strategy creates complementarities between the two types of affiliates.

The explanation of when TNCs follow complex integration strategies is that "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 either be complements or substitutes, and this relation will depend on the industry characteristics such as the level of transport cost, the factor intensity of production, and the cost of investing abroad. When

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[2] See these categories description in Bittencourt (2003).

transport costs fall, as occurs in regional integration agreements, it is possible that locations that were once substitutes may have become complements.

In other words, when some industries have specific characteristics that allow complex integration strategies and when transport cost fall by a regional integration agreement, it is possible that horizontal affiliates may transform in vertical affiliates in the framework of an international complex integration strategy developed by the firm. This could be an important aspect to understand FDI in Mexico or in some Central America countries as well as FDI from developed countries to China and other Asian countries, and intra-Asian FDI. Also it should be considered to analyze in perspective the FDI in MERCOSUR in the framework of regional integration agreement with developed countries.

The incorporation of these concepts to econometric models is complex. The variables used in the modelization to consider the effects of "FDI creation", "FDI diversion", and "FDI dilution" are strongly associated with the horizontal and vertical FDI, but they are not associated with a possible transition between both forms of FDI. We discriminate the general model between countries' blocs with the purpose to include some dimension of this strategy.

We have not found theoretical works that include M&A in general equilibrium models. It is not clear that M&A are connected with the most conventional determinants of FDI: size and dynamics of host market (horizontal FDI) or factorial endowment or trade openness of host economy (vertical FDI). The hypothesis is that M&A are related to disturbance in the global oligopolies linked to regulatory or technological changes.

2.3 Winners and Losers

The formation of a regional integration agreement (RIA) can imply more extra regional investment for the region as a whole but this does not mean more FDI in each member of the RIA. FDI may have an unequal distribution across countries that form the regional agreement. As De Sousa & Lochard (2004) assumed "additional FDI flows generated by new memberships do not necessarily locate in the new members". Within a RIA there may be winners and losers, in terms of the amount of FDI received for each country.

There may be also a redistribute effect of FDI within the region (FDI dilution). It occurs when horizontal TNCs concentrate the production in a single country and supply others through trade when barriers to trade within the region are eliminate, or when FDI is relocated in new members that have lower production costs.

What determines whether a particular country win or lose? Most literature on RIA and FDI find 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 on the future of the RIA. Levy, Stein and Daude (2003) considered that the bigger losers could be the medium-size countries, since small countries are more likely to be supplied by trade rather than FDI, with or without the RIA. However, in a previous study of determinants of FDI flows to MERCOSUR (Bittencourt and Domingo, 2002), we found that the RIA might have played a negative role for FDI flows to smaller member countries (especially Uruguay).

On the other hand, countries that offer a more attractive package for foreign investors due to the quality of their institutions, the quality of their labor force, their tax treatment of TNCs and the development of their infrastructure could be winners.

Te Velde and Bezemer (2004) explored different reasons that determine that the formation of a RIA does not necessarily lead to an equal distribution of FDI across countries. They found that the larger the country is relative to others in the region, the more FDI it will attract. Also, they considered that poorer countries in a region are not necessary which attract less FDI. Also they confirmed the hypothesis that core countries would attract more FDI then periphery countries through regionalization.

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

The analysis of winners and losers has been associated with increases or decreases of FDI inflows, but there are other issues related to the welfare effects of FDI for the host countries that have been subject of debate. The discussion of the potential benefits and costs of FDI suggests that not all FDI carries similar benefits. To receive more benefits from FDI a country has to locate foreign affiliate in more advanced industries where potential technological spillovers are larger, to induce these firms to export part of their production relaxing balance of payment concerns and inducing domestic firms to follow suit, and to succeed in strength forward and backward links between TNCs and domestic firms which have had the capacity to absorb those spillovers[3].

There are two types of questions. The first question is: what kind of policies can countries adopt to ensure beneficial results of FDI inflows and how may RIA affect the desirability and effectiveness of those policies? This question that is the most important issue related to the contribution of FDI to development is not the object of our work. The second is: what countries can do to become FDI winners or increase their capacity to attract FDI, in the regional integration? In this paper we formulate some hypothesis about how a RIA can affect FDI determinants.

The evidence discussed in Levy, Stein, Daude (2003) suggests that improve in the attraction capacity may be smaller for countries that have similar factor endowments that those of the source countries, and are relatively closed to international trade. They consider that openness amplify the impact of the RIA on FDI, and also change the composition of FDI, from horizontal to vertical, a shift that could strengthen the benefits a country derives from TNCs activities.

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[3] For a discussion about FDI spillovers see Blömstrom and Kokko (1996) who identify two types of spillovers: "productivity spillovers" and "market access spillovers". The first appears when local firms may improve their productivity as a result of their links with TNCs affiliates that are technologically more advanced and when foreign firm trains workers who then are engaged by domestic firms. The second occurs when export operations of TNCs may 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 cost of factors production increases as a result of the foreign investment. An analysis of the first type of spillover in MERCOSUR countries is developed in Laplane, M. (ed.) (2005).

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 or RIAs. The question is how to improve a country's attractiveness.

These studies do not propose which specific countries would be winners or losers inside different integration agreements. They only suggest a set of general characteristics which would allow different countries to be a winner or a loser. This analysis implies a static approach to FDI-integration process relationship. The integration process can influence over the set of characteristics of its members and allow them to transit from loser (winner) to winner (loser).

3. ECONOMETRIC ANALYSIS

3.1 Basic Gravity Model

The basic gravity model to explain FDI flows is the same used in Lopez and Orlicki with two additional variables:

$$FDI_{ij,t} = \beta_j \, GDP \, Host_{j,t} + \beta_i \, GDP \, Source_{i,t} + \gamma \, RIA_{ij,t} + \eta \, EXPMARS_{i,t} + \phi \, PRRH_{j,t}$$

$$+ \lambda \, Priv_{j,t} + + \delta \, Inflation_{j,t} + \nu \, Simisize_{ij,t} + \sigma \, BIT_{ij,t} + \rho \, XMH_{j,t} + \varphi_t + \alpha_{ij} + u_{jt}$$

Where:

$FDI_{ij,t}$ stands for bilateral FDI flows (from country *i* to country *j*) at time t[4]. As it is standard practice in the gravity model, we will take the logs, rather than the level, of FDI flows as the dependent variable[5].

$GDP \, Host_{j,t}$ 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 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)[6], and zero otherwise.

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[4] According to UNCTAD, in the case of TNCs 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 TNCs 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 of the remaining components.

[5] 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 interpreting the coefficients of the continuous variables as elasticities. Lastly, it has typically provided the best fit in gravity equations.

[6] Regarding the date to be considered as marking the beginning of the integration processes, we will follow Montenegro and Soloaga (2004) and Levy *et al.* (2003), which use the year of their creation (or re-launching, when a existing RIA is reformed so as to expect a significant change in trade and investment patterns). The years considered for each agreement are as follows: MERCOSUR (1991), NAFTA (1994), CAN (1991), CACM (1991), CARICOM (1973), ASEAN (1992), Australia-New Zealand Free Trade Area (1983), Gulf Cooperation

Next, we divide the RIA variable into intra and extra-regional FDI, now having 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. While the *Extra-RIA*$_{ij,t}$ takes the value of 1 if the host country is member of one of the RIAs and the source country is not 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 members of a 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 into the FTAA)

2) European Union (EU)

3) Others: ASEAN, EFTA, Gulf Cooperation Council, Australia-New Zealand Free Trade Area and CEFTA[7].

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. Hence, 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*$_{ij,t}$[8]. 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, under the assumption that a good environment has a positive influence on FDI attraction. It is based on the Political Risk Index elaborated 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 made in the host country at period t. Privatizations could be associated with significant FDI inflows, as well as with structural reforms in host countries that could also favor FDI.

Inflation$_{j,t}$ is the annual inflation rate of 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 that takes the values from $-\infty$ (the log of the number near zero) in case of perfect dissimilarity, and -0.69 [ln(0.5)] when 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):

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 to the respective RIAs.
[7] Since our focus is on the impact of the FTAA and EU-MERCOSUR agreement, the inclusion of other regional integration agreements in our analysis is mainly to control for their effects on FDI to FTAA and EU countries.
[8] In *RIA1* we differentiate the NAFTA effect from the South-South RIAs (*Intra-RIA1N and Intra-RIA1S*)

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

XMH$_{j,t}$ is the logarithm of the sum of exports and imports of the host country. 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 be meaning that vertical form would be the predominant transnational stsrategy.

BIT$_{ij,t}$ Bilateral Investment Treaties: is a variable that takes a value of one if both countries (host and source) have a bilateral investment treaty signed and entered into force at time t, and zero otherwise[9]. This variable captures the average impact of these treaties over the FDI flows. We should expect a positive relation to FDI inflows[10].

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 the spectacular increase in FDI over time[11].

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[12]. To some extent, these effects could also give account of 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 probably 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 predominant forms that FDI adopted in host countries during the period of study.

First we substituted openness variable (*XMH*) with external trade flows, specifically exports from host countries. This model specification was estimated for total bilateral flows and

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

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

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

[12] According to de Sousa and Lochard (2004), this methodology has several benefits. First, it reduces the risk of co linearity between explanatory variables. Second, it allows controlling for the correlation between some explanatory variables and the error term. It also prevents estimation biases related to 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 allows capturing 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?

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 or another form could have on the impacts of integration process in FDI flows.

The variables included in the model were the following, all of them referred to 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 countries exports were differentiated by type of good, with the purpose to obtain new elements that allow us to reinforce the results obtained in previous specification. Variable XH was substituted by the following variables, all of them referred to host country (sub index j):

$X\text{-}food_{j,t}$ = food exports
$X\text{-}minning_{j,t}$ = mining exports
$X\text{-}manuftotal_{j,t}$ = total manufacturing exports, which are divided into:
    $X\text{-}textil_{j,t}$ = textile exports
    $X\text{-}chemical_{j,t}$ = chemical exports
    $X\text{-}machequip_{j,t}$ = machinery and equipment exports

3.3 Model Specification for t Winner and Losers Analysis

As it was mentioned in 2.2, previous studies about this issue do not identify which specific countries in regional integration agreements are winners or losers relating to FDI. They only indicate general characteristics that could make that a country fits in one or another category. In this paper, a first methodological approach to identify and analyze winners and losers in MERCOSUR in the framework of an amplified integration agreement was developed. This approach includes specific variables of attraction in the model. This methodology allows us to capture the differentiated effect of internal and external FDI creation in each MERCOSUR countries[13], though it is very simple and little sophisticated from an econometric point of view.

The first group of attraction variables is composed by dummies that aim to capture each country's specificities. They are the product of a dummy per country and FDI internal creation variables (*IntraRIA1*) and FDI external creation variables (*ExtraRIA1*) in 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 form: *IntraRIA1 * country dummy* (1 to the country taking into account and 0 for others). Also, four variables for external creation, one for each country (**Dargextra, Dbraextra, Dparextra** and **Duruextra**) were constructed in the following form: *ExtraRIA1 * country dummy* (1 to the country taking into account and 0 for others).

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

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 with the GDP) instead of a dummy per country[14]. Four variables were generated to measure internal creation (**Argintra, Braintra, Parintra** and **Uruintra**) with the following format: *IntraRIA1** (GDP of the country taking into account / MERCOSUR GDP); and four to measure external creation (***Argextra, Braextra, Parextra*** and ***Uruextra***) with the following format: *ExtraRIA1** (GDP of the country taking into account / MERCOSUR GDP).

With the first group of variables we tried to identify if there was FDI internal and external creation in each MERCOSUR country, as well as the differences that these countries present as FDI receptors. With the second group we aimed to measure if countries with different relative size attract different FDI amount and how they differ from each other[15].

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 fixed effects per source and host country with other variables usually used in gravity models:

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

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

4. ECONOMETRIC RESULTS

4.1 Expansion forms of FDI

Results of baseline model with the inclusion of *XMH* and *Simisize* are presented in table 1[16].

Columns (1) to (3) present similar results to those offered in López and Orlicki working paper for estimation of coefficients of control variables that normally are 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 present a significant coefficient, even though internal market size and dynamic are the principal variables to which most of empirical studies about determinants of FDI refers.

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[14] A similar approach could be found in Dee and Gali (2003), and Velde and Bezemer (2004).

[15] In the same way and with exploratory reasons, variables of FDI attraction for each country were constructed 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 less magnitude. They are presented in annex 2.

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

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This would be indicating that horizontal FDI considered prevailing in the world since the end of the Second War could be losing its predominance in last decades of the Twenty Century[17].

Table 1
Results of the Baseline with Simisize and XMH

	(1) 1984-02	(2) 1984-02	(3) 1984-02	(4) 1984-1997
GDP Host	-1.46	-1.47	-1.46	-1.79
GDP Source	5.41 ***	5.61 ***	5.41 ***	8.15 ***
Simisize	1.61	1.61	1.62	2.64
Prrh	5.11 ***	4.77 ***	5.16 ***	4.96 ***
Inflation	-0.99 ***	-0.96 ***	-0.99 ***	-0.61 **
Priv	0.04 **	0.03 **	0.04 **	0.03 *
BIT	1.26 **	1.15 **	1.28 **	1.32 *
XMh	0.28	0.34 (*)	0.28	0.53 **
IntraRIA1	2.91 **	---	0.10 **	2.43 (*)
IntraRIA1N	---	-0.10	---	---
IntraRIA1S	---	4.09 **	---	---
IntraEU	1.74 (*)	1.75 (*)	0.06 (*)	1.49
Intraothers	2.88 *	2.90 *	0.10 *	0.96
ExtraRIA1	1.78 ***	---	0.06 ***	1.31 **
ExtraRIA1N	---	0.87	---	---
ExtraRIA1S	---	2.39 ***	---	---
ExtraEU	3.36 ***	3.35 ***	0.11 ***	3.84 ***
Extraothers	0.71	0.74	0.02	1.09
Expmars	-0.43 *	-0.45 *	-0.43 *	-0.38 (*)
Obs.	14024	14024	14024	10209
Groups	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 RIA dummy variable and the log of the respective extended market of RIA to which host country belong.

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

Bilateral Investment Treaties (BIT) has a positive and statistically significant effect on bilateral FDI flows. This is a robust result that appears consistently in different specifications of the model[18].

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[17] Results obtained present R^2 coefficients extremely small. F proofs support a significance level upper to 99%. These results rely on inclusion of negative bilateral FDI flows. With the objective to intend to explain why GDP of host country is not significant, estimations were done using only positive bilateral FDI flows. In this case, the significance level of the model increase and *GDP Host* is significant. Estimations and an interpretation more detailed of the results are presented in Annex 1.

Remaining model variables keep their significance and present little changes in magnitude, with the exception of *IntraEU,* variable that treats to measure the effect of internal creation of FDI in EU countries which loses significance in relation to Lopez and Orlicki results. This is explained by the inclusion of openness variable (*XMH*). If *XMH* is eliminated from the estimation, *IntraEU* coefficient is significant and shows a high value[19].

This result is interesting to a prospective reflection about potential impacts of integration agreements that MERCOSUR and North countries could sign. As is known, intra-European trade is the majority average of European total trade, therefore intra-European trade should be one of the principal moving of *XMH* for these countries. It does not seem that European Community or European Union would be the issue that foster FDI flows between these countries. It seems to be the increase of commercial flows as a product of the agreement or of other factors, which would be determining bilateral FDI flows.

In column (4) the same specification is considered for 1984-1997 with the object to isolate the results obtained from the extraordinary FDI growth observed at the end of 90, which is linked with M&A process and concentrated in developed countries. We consider that this model specification can not explain the reasons of this process[20].

In this "ordinary" sub period the results for the model variables are similar to those obtained for the complete period with some variations in their levels. Particularly, the elasticity of bilateral FDI flows related to host country external trade is significant and with a higher value than in 1984-2002[21]. In this period, variable *IntraEU* is not significant, so this could be sustaining the hypothesis that trade flows would be determining FDI flows among EU countries.

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

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

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

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[18] In contrast with this result World Bank (2003) indicates 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 flows determination". It's important to notice that BITs are not celebrated between developed countries which are the principal countries in bilateral FDI flows.
[19] This comparison is valid for the estimation with *IntraEU* dummy variable as well as with variable that interact between *IntraEU* dummy and EU GDP.
[20] Estimations with the purpose to study the impact of M&A in FDI bilateral flows were realized. In these estimations variables that treat to measure this phenomenon (amounts bought and amounts sold as well as dummies to differentiate the principal buyer and seller countries) were included. The estimations realized could not attain to capture well this phenomenon since new variables was not significant.
[21] A Chow test of parameters structural change was realized. The result refuse null hypothesis that parameters are constant.

bilateral FDI (columns 4 to 6). This could be indicating certain predominance of horizontal FDI (internal market seeking)[22].

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 value in different model specifications) . These results could suggest the existence of vertical or another type of FDI. Estimated parameters for economic integration variables, in general, are not significant, with the exception of deviation effect (coefficient of *Expmars* is significant and negative).

IntraRIA1 could not capture effects on FDI derived from regional agreements signed between Latin America countries. It only could be capturing the increase in FDI flows from USA and Canada to Mexico. NAFTA impact in average would not be significant.

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 years 1984-85 and France-Israel years 1985-02. BITs, in general, are not signed between developed countries.

Agreements signed between developing countries do not appear, in average, to have a positive impact on investment from developed countries. Significance of coefficients of

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[22] Total exports from developed countries, as well as exports by destine are not significant in this model. There are not significant effects of integration agreements on FDI, non by internal or external attraction neither by deviation effects. These results could mean that this model specification is not appropriate to explain bilateral FDI between developed countries.

ExtraRIA1 and *Extraothers* supports this fact. Only trade dynamics, independently of agreements, seems to have impacted on FDI.

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

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

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

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.

Finally, in estimations carried out including in the model exports desegregated by type of manufactured goods (*X-textil*, *X-chemical, X-machequip*) (column 2), host country exports in goods intensive in labor (*X-textil*) result significant and positive to explain bilateral total FDI flows increase. Exports of other goods with greater technological contents or with greater added value (as *X-chemical* and *X-machequip*) present a significant and negative relation[23]. This result is similar to the case of FDI from developed countries in developing countries (column 5)[24].

Previous results suggest that open expansion forms with resource seeking strategies (natural resources and cheap labor) concentrate the majority of bilateral FDI from developed to developing countries. This FDI is related to TNCs strategies of bigger integration, strategies that are being significant since the last decade of Twenty Century.

4.2 Winners and Losers

The results of the model estimated to the analysis of winner 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 fixed effects columns, country effects were contrasted with general variables *IntraRia1* and *ExtraRia1*.

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

In regard to external FDI creation some MERCOSUR countries have differences in their behavior as FDI receptors. Brazil could be the "winner" inside the bloc and Argentina could be clearly the "loser". This differentiated behavior indicates that while FDI flows increased in Brazil during the period ahead of Brazilian economic and policy determinants and go beyond the general effect of *ExtraRIA1;* FDI flows to Argentina would have a tendency to decrease given that *Dargextra* coefficient is negative and greater than *ExtraRIA1*. In this period, investors reduced their FDI flows to Argentina which were located below their growth potential. In the estimation without fixed effects the results are a few different: Uruguay emerges as the single possible winner, while Argentina and Paraguay would be receiving lower flows from extra-bloc than their capability[25].

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[23] This model specification reduces the number of observation and some explanatory variables lose significance (*GDP*s, *BIT* and all integration variables).
[24] In the case of FDI between developed countries, no one of these variables was significant, confirming the result commented before.
[25] In this estimation, when we consider the cross section model that is when we emphasize why investors select one or another country and not the FDI temporal evolution, *Simesize* variable is significant showing the importance of internal market size for investors' decision while MERCOSUR does not appear like a relevant determinant in extra-bloc investors' decision to invest in Brazil. However, as it is shown in fixed effect model, MERCOSUR could have contributed to determine temporal evolution of Brazil's FDI inflows. The perception of Uruguay as a possible "winner" differs with results obtained in previous works.

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 country belong: columns 5 and 6.

Estimations with the second group of variables (relative size) have similar results but less magnitude in internal and external FDI creation. This would suggest a better adjust that estimation with the first group of variables.

External creation of FDI flows would be concentrated in Brazil (significant and positive variable) and would be reduced in Argentina (significant and negative variable). These results would indicate that as Brazil amplified its relative size inside MERCOSUR-RIA (especially among 1998-2002), increased FDI inflows to this country were significant, while relative participation loss of Argentina would be associated to less FDI levels in relation to those received by Brazil[26].

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[26] In this case, estimations without fixed effects are similar to those already commented. MERCOSUR would be determining FDI movement more than the option of Brazil as FDI localization. With all other variables equal,

Estimations from the basic model were done including exports from the region and from the four MERCOSUR countries as well as export destination (developed and developing countries). The objective of these estimations was to find some issues that allow us to identify types of FDI leading regional inflows and to link this FDI typology with potential winners and losers in an enlarged integration process.

The results presented in table A-3 of the annex suggest that the increase of MERCOSUR exports to developed countries has been a significant enlighten factor in the growth of FDI flows. The opposite happens with exports to developing countries. These results could be indicating that investment in MERCOSUR has some grade of integration between its trade flows and FDI. In this way, if integration agreement between MERCOSUR and NAFTA as well as MERCOSUR and EU would materialize, the region could receive enlarged FDI inflows associated with trade flows. Not all MERCOSUR countries have the same behavior. While these considerations to the whole MERCOSUR are analogous for Brazil, in Argentina trade flows seems to have a decreased effect on FDI inflows. The last would be explained by a major influence of internal market and privatization of public services process as determinant of FDI received by Argentina in this period. In Paraguay as well as in Uruguay trade flows were not significant.

These results would be reasserting that Brazil and Argentina would be winners, but with the differences formerly specified between both countries. FDI in Brazil appears more integrated with positive trade flows to source countries. The role of trade openness as FDI determinant was identified and analyzed in Bittencourt and Domingo (2002). A similar result was obtained with a different econometric approach: exports and trade openness to extra-zone are determinants of FDI inflows[27].

FDI in Brazil grows more than in other MERCOSUR countries. It is known that in the second middle of nineties (Laplane et al., 2002) Brazil receives important FDI inflows by M&A, particularly in public services privatizations. May be our variable *Priv* is not enough to describe the importance of this phenomenon that is contemporary with MERCOSUR dummy, so this factor could be partly influencing this last variable.

[27] This result that seems more or less contradictory with the predominance of "market seeking" FDI identified in other works, can be nuanced by two reasons. Firstly we have already mentioned that when we analyze the model with fixed effects in each bilateral relationship we are jutting out the estimation "with in", the movement of each relationship, more than the capacity to capture the level or absolute amount. Secondly it is possible that it could be an endogeneity problem between exports and GDP, a key issue in our previous work but that seems to be not important in present work as, in general, host country GDP is not significant.

5. CONCLUSIONS

A first interesting issue that results from the analysis is that host country GDP has not a significant coefficient, when internal market size and dynamics are the most significant variables in FDI determinant studies. This fact would be indicating a change in FDI forms from horizontal to vertical and/or complex. The form that FDI among countries adopts allows us to profile winners and losers related to FDI flows in the framework of regional integration agreements.

Other result that reinforce previous one is the positive relationship between FDI flows and trade openness (*XMH*). The variable which measure FDI internal creation effect for EU countries (*IntraEU*) loses significance when we include variable *XMH* in the model, because the principal market of EU exports is the own region and intra-European trade operates as determinant of trade openness which has a positive effect on FDI flows. This result indicates that one of the principal determinants of FDI flows would be the increase of trade flows (as a consequence of integration agreement or through other factors). When we evaluate possible agreements to enlarge MERCOSUR integration, this behavior must be taken into account. If this enlargement implies increased trade flows, they could have associated increased FDI flows. The sign of the agreement is not sufficient to increase FDI inflows, thus it is necessary a previous or simultaneous change in MERCOSUR countries' strategy of predominant international insertion.

When we reduce the period of analysis to remove distortions generated by the process of mergers and acquisitions developed in the nineties, the results show that FDI increase could be associated to external creation of FDI in countries that would integrate FTAA as well as in EU. At the same time it is observed a greater elasticity of bilateral FDI flows related to foreign trade.

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

Previous hypothesis would be supported in the results obtained when we differentiate exports of host countries by type of good. In the case of FDI among developed countries none export variables were significant. In FDI from developed to developing countries, the results show that open expansion forms of "resource seeking" type (natural resources and labor) would be predominant to explain the pattern of FDI movement. This means that TNCs would develop strategies of greater integration which have been most important since the last decade of XX Century. In this case the variation of total exports is positive and significant as well as exports of primary or more intensive in natural resources goods, but exports of industrial or with greater technological content goods seems to impact negatively and significantly in the increase of bilateral FDI flows. May be, complex international integration forms are progressing slower than we have foreseen in other works or these variables are not the best to capture this impact.

Previous results could be indicating that if ALCA and MERCOSUR-EU agreements would increase trade flows –as is foreseeable- and those flows would have a positive impact on

FDI flows, predominant forms of expansion would be open/resource seeking forms, since these agreements implies relationships between developed and developing countries.

In relation to the analysis of the countries that would be winners or losers as attractors of FDI in the framework of regional integration agreements, principally in MERCOSUR, the estimation results, using a special methodological approach (inclusion of specific attraction variables) show that there are differential behaviors per country. Brazil would be the only "winner" inside the bloc and Argentina would be probably the "loser" when we consider external creation of FDI. With the rest of the model's variables equals, particularly *ExtraRIA1* effect, FDI flows would increase in Brazil over general determinants during the period and foreign investors in Argentina would tend to place decreased investments related to Argentina's potential.

On the other hand, in small economies results are not so significant, but they would be showing a situation where Uruguay is near to be a "winner" and Paraguay a "loser", both in relation to its potential defined by the movement of other variables.

A significant factor, in FDI flows increase in MERCOSUR countries, has been the exports growth from the bloc to developed countries. This would indicate that investment in the region has a certainly correlation degree with trade flows from MERCOSUR countries. If integration agreements with EU as well as with NAFTA would be materialized, MERCOSUR would receive increasing FDI flows associated with additional trade flows that these agreements could generate. These considerations for the whole MERCOSUR are applied to Brazil; while in Argentina the principal FDI determinants would be internal market and privatization of public services process (trade flows seem to affect FDI flows in a decreasing form). Previous results would be reaffirming that Brazil would be a "winner" and Argentina a "loser" (trade flows are not significant in FDI to Paraguay and Uruguay).

The results of winners and losers analysis are not sufficiently robust to allow us to project potential impacts of ALCA and EU agreements on FDI flows to MERCOSUR countries, starting from variables that represent existing integration agreements using dummies or "*extended market*". The gravitational model does not capture in an appropriate way phenomena or FDI forms that had a great weight during the period of analysis. In the other hand, it is very difficult to include control variables in these models, taking into account that there are not countries comparable to those of MERCOSUR that have previous experience in enlarged agreements with EU or NAFTA.

On the contrary, the identification of FDI forms that lead bilateral relationships seems to offer a better option to project the effects of agreements with North countries. Particularly, it would be possible to establish a link between trade flows potential increase and FDI that would receive MERCOSUR countries, if we associate the agreements with a change in actually dominant FDI forms in MERCOSUR, from horizontal to vertical or complex (the last associated with trade flows, in developing countries perspective). The results sustain the hypothesis that trade flows growth is the determinant of a great part of intra-European FDI (and probably of FDI received by Mexico when this country integrated the NAFTA), more than the sign of the integration agreement. In other words, if the integration agreement does not generate new trade flows (before, simultaneously or as a consequence of FDI received), it will be difficult to increase FDI flows in a significant way.

How this structure of winners and losers could be modified if ALCA and MERCOSUR-EU agreements are signed and applied? How many countries would be in better conditions to

make a change towards export strategies, those that would be beneficiated by integration agreements?

About these questions we can only offer some tentative answers related to future most likely stages. A possibility is that ALCA and EU agreements expand differences in external capture of FDI, and Brazil and Uruguay tend to strengthen as winners while Argentina and Paraguay as losers.

Brazil, on the base of its greater industrial development and sustained in the development of internal scale economies, could present a major potential to go from "market seeking" strategies of TNCs' affiliates to strongly exports strategies, supported by exports to other developing countries and some specialized exports to developed countries.

Uruguay with its potential related to its geographical location as entry and exit to MERCOSUR as well as a better development of its natural resources 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 that are dominants in this country. This could avoid or compensate the tendency of FDI natural resource oriented to generate "enclaves".

Argentina appears as an intermediate situation case. Its potential transformation to export strategies, beyond natural resources, seems to depend increasingly on the possibility of obtaining scale economies inside MERCOSUR. Nowadays, this situation appears as very complicated.

The central problem for Argentina and Uruguay consist in their very low average long run growth rates related strongly to volatility of both economies (Bittencourt, 2003c). To those countries, which economies are particularly interconnected, a greater integration to MERCOSUR, principally with Brazil, is a key aspect for a possible industrial development (Bittencourt, 2003b).

Paraguay is the most concerned case by its intra-territoriality, poverty levels, recently economic evolution and high levels of informality of its economy. These issues make Paraguay as the country with less potential to capture FDI related to other bloc's members.

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ANNEX 1: Estimations with positive FDI

Here we present the estimation's results using only positive bilateral FDI flows (table A-1). Between 1998 and 2001, important negative bilateral FDI flows can be observed, principally among developed countries, specifically among European countries. This phenomenon would be showing movements associated with the wave of mergers and acquisitions among major TNCs observed in the period. To reduce the weight of this transitorily phenomenon we estimated the model only with positive FDI flows[28].

This exercise is intended to explain why host GDP is not significant in the model. In some way, if model with positive FDI flows would be applicable, it would implicate that the specification that we are using is adequate to capture the reasons that explain why investors increase their flows to countries where they are already installed (FDI reinvestment), but it is not so appropriate to explain the decision to select a country for bilateral FDI (null option) as well as 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 belong; and iv)) in column of developed countries, BIT is 1 only in Germany-Portugal years 1984-85 and France-Israel years 1985-02. BITs, in general, are not signed between developed countries.

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[28] We eliminate 3,246 observations: 1,593 negatives and 1,653 nulls. This determined an increase in the model explainer capacity.

In this model (with positive flows) a difference with previous formulation is that reinvestment decision is explained basically by factors associated with home market and host internal market. *Simesize* variable (column 1) and source country GDP are significant, while 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 expect sign (although with lesser value than source country GDP). In neither of both cases, openness is significant. This would support the idea that horizontal FDI is dominant in "reinvestment" decisions.

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

In positive FDI flows among developed countries, the dynamic of source market as well as those of host markets is predominant in the explanation of these flows, while openness is significant and with negative sign. This confirms previous results related to 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 contribute to capture or to identify more clearly winners and losers inside RIAs, we realized an exercise estimating the model including variables that try to measure 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 size effect (*GDP H+RIA*), privatizations (*Priv*) and openness or trade flows (*XMH*) are considered as positive determinants while inflation (*Inflation*) and politic risk (*Prrh*) are considered as negative determinants[29].

The results obtained with these variables (table A-2) were similar but or less magnitude to those achieved with the other two group 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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[29] Variables were constructed as the interaction among dummies of internal and external attraction of each country 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 with MERCOSUR country exports by destine

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*)