

# THE IMPACT OF DEMOCRATIZATION ON THE FORMATION OF TRADE BLOCS

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## ABSTRACT

Although there is evidence that domestic politics matter for the formation of preferential trade agreements, the impact of large-scale changes in political institutions, especially in the direction of democratization, on economic integration has been given surprisingly short shrift in the previous literature. This study takes a first step toward developing such an explanation. It posits that, at least under certain conditions, the process of democratization constitutes an important factor in the formation of regional arrangements. Specifically, when compared to unilateral and multilateral trade liberalization, forming a regional integration arrangement involves lower political costs for decision-makers. Thus, if moving towards democratic regimes forces political leaders to implement trade liberalization, the decision to form a regional trade agreement is usually the easiest and the most feasible to execute. Moreover, in presence of cluster of democratization in a given historical period several neighbouring countries are likely to share the same interest in liberalizing trade, thereby easing the bargaining process, which generally represents the main obstacle to the formation of a regional integration arrangement. This paper quantitatively tests the previous hypothesis using an original dataset that covers twenty Latin America countries from 1991 to 2000. Empirical results support the argument.

## INTRODUCTION

The current wave of regionalism, defined as the increasing number of preferential trade agreements (henceforth, PTAs) between neighbouring countries, is one of the most important recent developments in the global trade system. During the past 15 years, PTAs<sup>2</sup>

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<sup>2</sup> There are various types of PTAs: Free Trade Areas (FTAs) eliminate internal trade barriers; Customs Unions (CUs) eliminate internal trade barriers and impose a common external tariff; Common Markets (CMs) allow the

that liberalize commerce between members have proliferated rapidly. The WTO counted 40 new PTAs in 2004 alone.

Despite the widespread diffusion of this phenomenon, the attempt to develop generalized theories via systematic testing is relatively new (Mansfield et al., 2002; Genna, 2005). The previous studies can be schematically divided into three categories. Firstly, in order to explain economic integration, a part of the literature focuses solely on economic factors. In particular, Baier and Bergstrand (2002) argue that the probability that a PTA will be formed increases with similarity in economic size and the geographical proximity of potential member states. Second, a small number of studies claim that international politics matter in the formation of PTAs. For example, using a quantitative analysis, Gowa (1994) finds that alliances have a statistically significant effect on bilateral trade agreements (Gowa, 1994: 9).

Third, and, most interestingly for the purposes of this paper, recent works focus on domestic politics to explain economic integration. Using the large and influential body of research on the influence of regime type on the international system, Mansfield, Milner, and Rosendorff (2002) build a formal model to assess the impact of the type of regime on international cooperation. Their main claim is that leaders in democracies have a greater incentive to pursue international cooperation in trade than do leaders in autocracies. The causal mechanism underlying their hypothesis concerns electoral accountability. Specifically, because voters are not able to fully distinguish between adverse economic cycles over which political leaders have little control and economic stagnation caused by the extractive policies of political leaders, democratic leaders have to find a means of demonstrating that poor economic performance is not due to *rent-seeking policies*. Joining a PTA is an efficacious manner in which to send credible signals to voters and so to keep office. Although statistical results seem to confirm the hypothesis put forward by Mansfield, Milner, and Rosendorff, the mechanism employed in their study has several problematic aspects. For instance, recent

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free movement of factors of production and finished products across national borders; finally, Economic and Monetary Unions are CMs with a common currency. Here, the term “preferential trade agreement” is used in a general way. Conversely, “regional integration arrangement” (henceforth, RIA) refers to an agreement among more than two countries as distinguished from a “bilateral trade agreement”, which denotes an agreement between only two states.

studies find that voters have usually a fairly good perception of the performance of their own economy (Duch and Stevenson, 2005).<sup>3</sup>

Although there is evidence that domestic politics matter for the formation of PTAs, the impact on economic integration of large-scale changes in political institutions, especially in the direction of democratization, has been given surprisingly short shrift in the previous literature. The fact that the sudden rush to regionalism has closely followed the third wave of democratization,<sup>4</sup> which has raised the number of democratic regimes from approximately 30 in 1975 to 120 in 2002 (Milner and Kubota, 2005), it suggests that the two types of reforms may be related. This study takes a first step toward developing such an explanation. It posits that, at least under certain conditions, the process of democratization constitutes an important factor in the formation of regional arrangements. Specifically, when compared to unilateral and multilateral trade liberalization, forming an RIA involves lower political costs for decision-makers. Thus, moving from the assumption that democratization forces political leaders to implement trade liberalization, the decision to form an RIA is usually the easiest and the most feasible to execute. Moreover, in presence of cluster of democratization in a given historical period several neighbouring countries are likely to share the same interest in liberalizing trade, thereby easing the bargaining process, which generally represents the main obstacle to the formation of an RIA. This paper quantitatively tests the previous hypothesis using an original dataset that covers twenty Latin America countries from 1991 to 2000. Empirical results support the argument.

This paper is structured as follows. The following section describes the theoretical framework that constitutes the basis of the discussion. The second part develops a formal model to explain the casual mechanism that supports the two hypotheses on which this study is built. The third part describes some empirical issues related, in particular, to the spatial data analysis techniques. The fourth part introduces the model and explains the methodology that has been used to test the hypotheses. The fifth section shows the empirical results of the econometric analysis. The sixth section provides some robustness checks. Finally, some conclusions are drawn.

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<sup>3</sup> For an extensive exploration of this topic see also Dorussen and Taylor (2002).

<sup>4</sup> Huntington (1991) identifies the third wave of democratization as having begun in 1974.

## THEORETICAL PUZZLE

### *Framework*

One of the most important events in the world economy since 1980 has been the progressive trade liberalization among countries across the globe (Milner, 1999: 91). In order to explain this trend, three main arguments that focus on domestic politics<sup>5</sup> have been made. Firstly, several scholars focus on the preferences among domestic groups (Rogowski, 1989; Grossman and Helpman, 1994; Haggard and Kaufmann, 1995). Specifically, domestic groups lobby their own governments to implement protectionist or liberalization policies in relation to their economic interests. Secondly, other scholars argue that political and economic institutions are central to explaining trade liberalization (Mansfield and Busch, 1995; Rodrik, 1995; Verdier, 1998). In particular, in opposition to studies that claim that preferences of actors play the decisive role, this part of the literature argues that institutions aggregate such preferences and that different institutions do so differently, thus leading to distinct outcomes. Finally, a few studies have tried to combine domestic preferences and political institutions (Gilligan, 1997; Milner, 1997).

This paper focuses mainly on the role of political institutions in trade liberalization. In particular, this paper moves from the assumption that the third wave of democratization has contributed to the movement toward free trade among countries. The author is aware of the fact that this argument is contested, is far from having been definitively proved, and that some studies have challenged its validity. However, several *n-large* studies have corroborated the hypothesis that democratization leads to trade liberalization (Krueger, 1983; Wood, 1994, 1999; Milner and Kubota, 2005; Costa Tavearez, forthcoming), including several works focused on Latin America (Fishlow, 1999; Manzetti, 1999; Murillo, 2001; Weyland, 2002; Biglaiser and Brown, 2005).

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<sup>5</sup> This study does not address the vast literature that seeks to explain trade liberalization within the context of international politics, such as the role of military alliance (Gowa, 1994), the role of the GATT/WTO (Ruggie, 1983; Keohane, 1984) or the role of US. This decision is justified by the fact that these forces have been constantly present in the international system, but only when the domestic political conditions have changed has trade liberalization taken place. Thus, external factors may have played a role, but the timing would suggest that the driving force has been variation in domestic politics. However, as explained later in the paper, the econometric models do control for external factors that may affect a process of trade liberalization.

The mechanism that supports this intriguing thesis is based on the Heckscher-Ohlin and Stolper-Samuelson theorems that explain the effects of free trade on income distribution among productive factors. Moreover, the thesis provided by Bueno de Mesquita et al. (1999) that democratization involves the expansion of the winning coalition links the previous two theorems to the policy makers' decisions. Loosely, the size of the winning coalitions is negatively related to the optimal level of protectionism for political leaders (Milner and Kubota, 2005). More specifically, in developing countries, which are the main targets of democratization, workers tend to benefit from liberalization through increase in their income and reduction in the prices they have to pay for products and services (Acemoglu and Robinson, 2001; 2005).

These two mechanisms are obviously related to one another. As Mayer (1984) and Yang (1995) posit, political leaders respond to voters' preferences vis-à-vis trade policy. Developing countries are usually well endowed with labour forces but poor in capital and they usually trade with developed countries that are well endowed with capital but less so with regard to labour. Thus, according to the Heckscher-Ohlin and Stolper-Samuelson theorems, in developing countries a protectionist trade policy benefits few individuals who are well endowed in the relatively scarce factor (capital) and penalizes the vast majority of people who are well endowed in the relatively abundant factor (labour). Voter preference as a motivating factor in politicians' trade policy decision-making does not likely apply to autocracies in which the selectorate is quite restricted and elections never occur or, when they occur, are not fair. However, when democratization arises, electoral competition may modify the strategies of political elites. In fact, in order to keep office, political leaders are forced to remunerate the vast majority of voters and to gain the support of a larger selectorate. As a regime becomes more democratic, trade liberalization may therefore become an appealing tool to gain electoral consensus. Indeed, lowering tariffs increases the income of workers employed in export-oriented firms that produce labour-rich goods, and decreases the prices of imported capital-rich commodities. In sum, according to this argument, protectionism is not fashionable in a democratization process.

Given the emphasis of this paper on this assumption, it is worthwhile to remark three points. First, the theoretical justification for this argument is the statement of

complementarity of capital and labour between developed and developing economies. Thus, the positive impact of democratization on trade liberalization works only for developing countries. Second, the aforementioned mechanism works independently from any further specification of different types of labour factor. Other previous studies (Goldin and Katz, 1998; Krusel et al., 2000) extend the above analysis by considering capital, skilled and unskilled labour as the relevant factors of production that will be taken into account in the following section. Third, the author is aware of the endogeneity problem present in this argument and of the fact that some works in the field have examined the impact of economic liberalization on democracy (Lopez-Cordoba and Meissner, 2005). However, the most part of the recent studies seem to show that the effect of globalization on democracy is mostly insignificant (Wu and Otto, 1999; Dawson, 2003; Grosjean and Senik, 2007) and that the causality is more likely to run from political to economic liberalization (Person, 2004; Giavazzi and Tabellini, 2005).

#### *Political Costs of Trade Liberalization*

Despite its popularity in the literature, the above argument that democratization leads to trade liberalization has been challenged by several authors, as already anticipated. Haggard (1990), for instance, argues that in a democracy trade liberalization involves a high risk for leaders of losing office because of the time factor. Specifically, benefits from trade liberalization usually materialize in the long term, while in the short term an economic downturn is likely to have a negative impact on electoral results. Thus, according to Haggard, democratic leaders are less prone to implement liberalization policies than their autocratic colleagues, who do not have to take elections into account. Others scholars share this idea (Rodrik, 1995). Moreover, some scholars (Naim, 1993; Murillo, 2001) claim that economic reforms in general, and trade reforms specifically, have distributional effects that might be negative for workers, at least in the short term, and thus may incur strong opposition.

Behind this debate is the implied supposition that every policy change, including trade liberalization, involves some costs for policy makers. What is to be understood by the term 'political costs' may be construed quite broadly. Thus, for the sake of clarity, a narrow definition of the concept will be used herein. Following the pattern presented in the previous section, in developing countries political costs of trade liberalization are defined as *the price*

*that policymakers have to sustain in term of loss of electoral support among the selectorate,<sup>6</sup> e.g. labour forces and firms that produce labour-rich goods.*

The political costs of trade liberalization have three main sources. Firstly, there is a general consensus that trade liberalization may lead to loss of government revenues as trade taxes are reduced or eliminated (Baunsgaard and Keen, 2005). In turn, to maintain macroeconomic stability governments may cut social security and welfare or raise taxes (Ebrill et al, 1999). Both these policies negatively affect a vast part of the selectorate and so are likely to have a negative impact on the probability of political leaders to retain office.

Second, trade liberalization often looks like a zero-sum game in which firms from each country either gain in the other countries' markets or lose in their own market against foreign competitors (Krishna, 1998). This process may be expected to shift resources between industries and to produce changes in the wage structure. Moreover, trade liberalization increases the competitiveness of the markets of developing countries, generating lower prices and reduced producer rents. To the extent that such rents were previously shared with employees, wages will also fall after trade liberalization (Arbache, Dickerson, Green, 2004). Again, salary reductions for some workers are likely to have a negative effect on support for political elites.

Third, trade liberalization produces a rapid inflow of foreign technology due to FDI (foreign direct investment) and increased imports (Arbache, Dickerson, Green, 2004) in developing countries. The inflow of technology may be expected to be skill-biased because it is mainly designed in the industrialized world and may, therefore, lead to a change in labour demand in favour of skilled workers (Berman, 1998). When it is large enough, this change can remunerate only skilled labour, penalizing the unskilled workers that form the vast majority of population in developing countries<sup>7</sup>. In turn, this imbalance in income distribution is likely to reduce support for political leaders, as well as the probability of their being re-elected.

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<sup>6</sup> The selectorate is simply those within the state who have a say in policy outcome. The winning coalition is a subset of the selectorate. According to the selectorate theory, in a democracy the winning coalition is large and the selectorate is even larger, so the proportion of public goods outweigh private goods.

<sup>7</sup> For an extensive analysis of this topic, see *Winners and Losers Over Two Century of Globalization* by Williamson (2002).

### *Regional Integration as a Third Way*

Taking into account the pressure of trade liberalization caused by democratization and its political costs, the current study takes a first step toward developing an explanation that takes into account several tiers<sup>8</sup> of liberalization (Devlin and Estevadeordal, 2001). Specifically, the first tier of liberalization arises at unilateral level through reduction of tariffs. The second tier operates at multilateral level during the GATT/WTO Round negotiations. The third tier concerns regional integration. This paper moves from an analysis of trade liberalization at a purely unilateral and multilateral level to this third stage of liberalization.

Regional integration has some advantages in comparison to the other two forms of liberalization. Firstly, the fiscal implications of preferential liberalization among neighbouring countries are less onerous because the level of trade is usually low due to a history of protectionism (Devlin and Estevadeordal, 2001).<sup>9</sup> Since there is little risk of significant loss of government revenues, there is no major threat to macroeconomic stability and so no pressure for governments to cut welfare or raise taxes. Second, due to the reciprocal regime of import and export, regional integration allows the balancing of costs and benefits of trade liberalization. Since the PTAs are usually “trade diverting”,<sup>10</sup> firms from each country within the trade bloc gain preferential access to the partners’ market. Thus, as Krishna (1998, 229) argues, firms gain both from the partner countries’ firms and from diverting trade away from other countries’ firms. Furthermore, the protection in the domestic market that they lose is only against their partner countries’ firms. Indeed, in the case of a PTA there is no zero-sum game for firms and little threat for workers employed in these firms. Third, regional integration arises in markets that mirror a more symmetric competition than in the international system, lowering the threat of globalization (Devlin and French-Davis, 1999). In the case of PTAs among developing countries, each member has to compete with a partner that has similar level of technological development, which thereby reduces the aforementioned risk of a skilled-biased income distribution.

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<sup>8</sup> The word *tier* as used herein does not imply any chronological order.

<sup>9</sup> In the 1980s, intraregional trade was a mere 15% of the total amount of trade in Latin America. In the same period intraregional trade was 55% of the total amount of trade in Europe and 35% in Asia (sources ECLAC, 2005).

Indeed, the theoretical results that are anticipated here and developed formally in the next section suggest that regional integration is a smoother and less traumatic way to implement free trade than unilateral and multilateral liberalization, and thus, at a political level it can encounter wider popular support compared to the other two tiers (*i.e.* unilateral and multilateral liberalization). More specifically, the political costs of implementing regional integration are lower than implementing unilateral or multilateral trade liberalization. Thus, when democratization arises in developing countries and puts political leaders under pressure to remunerate a vast majority of voters in order to retain office, they would prefer to choose regional integration as viable strategy to liberalize trade minimizing political costs.

#### TRADE LIBERALIZATION AND POLITICAL COSTS: A FORMAL MODEL

To illustrate the mechanism by which, during a process of democratization, a chief executive chooses to implement regional integration as a policy to raise her chances of keeping office, and thus minimizing the political costs of trade liberalization, a simple extensive form game will be presented herein. The model includes two players: the chief executive (henceforth the CE) and the protectionists. This model assumes that the CE implements trade liberalization if and only if she has symmetric information on a win-set, indicating that the legislature of all countries has an incentive to pass the bill. Thus, the legislature has been omitted from the domestic game, since its decision is always assumed to be in line with the CE. Moreover, the player named the *protectionists* includes every domestic interest group that has an interest in sustaining a high level of trade barriers, *e.g.* owners of capital factor in developing countries.

This model shows that during a process of democratization when political costs are high, or perceived to be high, the CE may disregard the possibility of liberalizing trade or may give it up once implemented, because the political costs would completely offset the electoral reward. Conversely, for trade liberalization that produces low political costs, like that explained above under regional integration, the CE can more easily send a signal to protectionists showing (even by bluffing) that she is not going to give up trade liberalization.

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<sup>10</sup> The increased trade between countries forming the preferential trading agreement comes at the expense of trade formerly taking place with third countries (Krueger, 1999: 107).

The protectionists, in turn, knowing the CE's stake, may decide to accept trade liberalization to avoid incurring further costs by fighting with the CE.

### *Sequence and Payoffs*

In this sequential game:

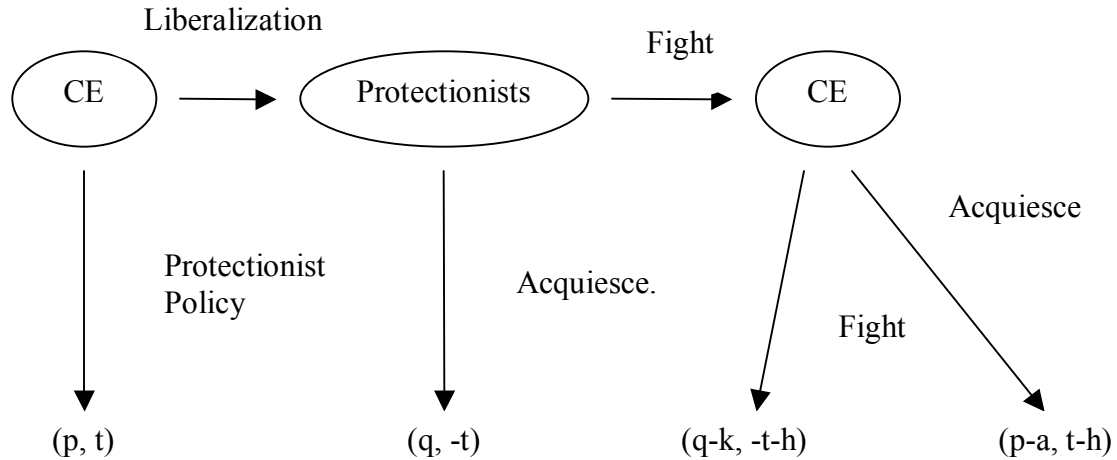
1. the CE decides whether or not to implement trade liberalization;
2. the protectionists respond by either fighting or acquiescing if trade liberalization is implemented;
3. the CE responds to protectionists by either fighting or giving up trade liberalization.

The CE gains a payoff of  $p$  ( $>0$ ) as probability of being re-elected if no trade liberalization is implemented, whereas she gains  $q$  ( $>0$ ) as probability of being re-elected if trade liberalization has been implemented and the protectionists accept it. Since this model is restricted to developing countries that are moving toward democracy, it is assumed that  $q > p$ .<sup>11</sup> If the CE implements trade liberalization and the protectionists decide to fight, the CE gains  $q-k$  in cases in which she fights to keep trade liberalization or  $p-a$  where she gives up it. Where  $k$  ( $>0$ ) is the political costs of fighting the protectionists, or more precisely the political cost of implementing trade liberalization, and  $a$  ( $>0$ ) is the audience cost for backing down from the dispute and failing to establish credibility (Fearon, 1994).

The protectionists gain  $t$  ( $>0$ ) from the status quo, *i.e.* the level of tariff in a protectionist trade policy, whereas they gain  $-t$  if trade liberalization has been implemented and they acquiesce thereto. The protectionists gain  $-t-b$  in cases in which they fight and the CE decides engage in trade liberalization, where  $b$  ( $0 < b < t$ ) is the fighting costs that the protectionists have to sustain. Or they gain  $t-b$  if they fight and succeed in convincing her to give up trade liberalization. The below figure summarizes the game graphically. The payoffs suggest that CE's interest is in re-election regardless of the course of the game, and the protectionists prefer acquiescing to fighting if the CE is to fight, but prefer fighting otherwise.

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<sup>11</sup> Note that  $q$  is assumed to be constant for any kind of trade liberalization: unilateral and multilateral trade liberalization, and regionalism. Since there is no theoretical basis upon which to assume that  $q$  is constantly higher in the presence of one kind of trade liberalization instead of another, the hypotheses developed herein should be unaffected by this simplifying assumption.



### *Equilibrium*

Solving the game by backward induction, subgame perfect Nash equilibriums are evaluated and the conditions under which they are achieved, that is the level of  $q$ .

1. The protectionists' perception is  $q > (p+k+a)/(t+h)$  and it is correct, so the protectionists decide to acquiesce to trade liberalization [(q, -t) final payoffs]. The protectionists' perception is wrong, so the CE do not implement any trade liberalization [(p, t) final payoffs].
2. The protectionists' perception is  $q < (p+k+a)/(t+h)$  and it is correct, so they fight and the CE gives up trade liberalization [(p-a, t-h) final payoffs]. The protectionists' perception is wrong, so they fight and the CE fight as well [(q-k, -t-h) final payoffs].

### *Democratization and Regional Integration: Hypotheses*

Comparative statistics illustrate that for a small political cost,  $k$ , the level of  $q$  with which the CE gains better payoffs by fighting and maintaining trade liberalization becomes relatively low. Similarly, the probability that the protectionists fight against trade liberalization dampens as  $k$  decreases. For the sake of simplification  $Y = (p+k+a)/(t+h)$ . For the purposes of this paper the most interesting scenario is when the protectionists perceive  $q > Y$ . Taking the first derivative of  $Y$  in term of  $k$ , the following relationship is obtained

$$dY/dk > 0,$$

showing that  $Y$  increases as  $k$  increases, and vice versa (and more interestingly for this paper)  $Y$  decreases as  $k$  decreases.

The previous section explained the main reasons that, during a process of democratization, it may be expected that regional integration produces lower political costs than other kinds of trade liberalization, such as unilateral and multilateral liberalization. Because regional integration reduces  $k$ , political leaders are more likely to implement it without having to give up or even without having to fight against interest groups that are against trade liberalization. Indeed, for a small  $k$  the protectionists are likely to perceive  $q > Y$  and to acquiesce to regional integration. Accordingly, the first hypothesis can be developed as follows.

*H1:* As countries implement a process of democratization, the probability that they will join a regional agreement increases.

Until now, the investigation has been exclusively focused on and limited to a single country that experiences a process of democratization. However, forming a PTA is a process that involves at least two countries, so the concept of interdependence must also be taken into account. In rational choice theory applied above, states are assumed to be rational and self-interested and to act in such a way as to maximize their utility. Thus, under these assumptions, the process of decisionmaking is implemented by governments without cooperation and coercion, but is *uncoordinated interdependent*, i.e. “in the sense that governments factor in the choices of other governments (Elkins and Simmons, 2005: 35).

Using the rational learning approach that derives from these assumptions, states search for a solution to a problem, which have to deal with, looking also at the international environment. If in this process of gathering information states find a valid foreign model and if this model proves to be superior to the existing policies after a cost-benefit analysis, they are willing to adopt it to maximize their utility. Thus, as Weyland posits (2005: 271), rational learning leads to policy convergence.

The rational learning approach can be effectively employed in the case of cluster of democratization that suggests that changes of type of regime are transmitted by proximity.

Evidence of cluster of democratization can be found in the process of democratization in Latin America and Asia<sup>12</sup>. The previous sections explain that trade liberalization is a valid policy to gain electoral consensus and that regional integration is a relatively safe way to implement trade liberalization. Assuming that at a certain stage the *problem* for government is democratization and how to stay in office, it may be expected that if several neighbouring countries experience a common process of democratization in a given historical period, they may share the same interest in liberalizing trade. Thus, in such a context, the bargaining process, which generally represents one of the main obstacles to economic integration, will be easier and faster and, thus, less costly<sup>13</sup>. In sum, the cluster of democratization creates a favourable bargaining environment for the formation of PTAs. A second hypothesis can be therefore developed as follows.

*H2*: In the presence of cluster of democratization, the probability that countries will join a regional agreement increases.

#### EMPIRICAL ISSUES

The previous hypotheses are tested in the region of Latin America. The choice of this geographical area is determined by several factors. Firstly, Latin America has been deeply involved in the third wave of democratization, as shown by a recent study by Hagopian and Mainwaring (2005). Second, as Avelino et al (2002, 2) point out, during the globalization era, “Latin America has experienced the most dramatic change in its policy orientation since World War II. Latin American governments have instituted a broad array of reforms aimed at integrating their economies into global market”. In their study on globalization, Avelino et al. conclude that no other region has shown as rapid a transformation as Latin America. Third, this area witnessed a large number of integration initiatives during the 1990s (see Appendix C): “more than 14 agreements since 1990 with a handful more in varying degrees of negotiation” (Devlin and Ffrench-Davis, 1998: 1). Finally, as mentioned above, the cluster

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<sup>12</sup> The popular term *contagion effect* (Przeworski, 1999; Colomer, 2000) is not used, since it usually implies the presence of external forces (which have been admittedly neglected herein) in spreading the process of democratization.

<sup>13</sup> There is an extensive literature that studies the costs involved when the period of bargaining becomes longer. As Rubinstein (1982, 99) posits, time is valuable for states.

of democratization was particularly evident in Latin America in the 1980s (Whitehead, 1996).<sup>14</sup>

Regarding the last point, and to test the second hypothesis, it is necessary to introduce the notion of spatial correlation. The idea of spatial correlation is a simple one: countries that are in close proximity to one another are more likely to have impact on each other. Specifically, this study captures a positive spatial clustering of democratization, *i.e.* a country that is experiencing a democratization process located in a region filled with countries in which the same process is taking place. The  $G^*$  statistic,<sup>15</sup> developed by Getis and Ord (1995), measures the spatial context of democratization surrounding entities by indicating the extent of localized clustering around each observation and it has proven to be helpful in such analysis (Gleditsch and Ward, 2000). The  $G^*$  statistic for any variable  $x$  is given by the following:<sup>16</sup>

$$G_i^*(d) = \frac{\sum_{j=1}^N w_{ij}(d)x_j - \bar{x} \sum_{j=1}^N w_{ij}(d)}{S \sqrt{\frac{[N \sum_{j=1}^N w_{ij}^2(d) - (\sum_{j=1}^N w_{ij}(d))^2]}{(N-1)}}$$

Where the spatial matrix  $w(d)$  is a binary matrix of contiguities, *i.e.* each cell score 1 if the two countries are closer than 950 kilometres;<sup>17</sup> 0 otherwise and  $x$  is the variable *Democratization* whose operationalization will be explained in the next section. For the twenty Latin America countries included in the dataset of this paper, the matrix representation of contiguities<sup>18</sup> is given by Table 6 in the Appendix A.

<sup>14</sup> In the period of the analysis, there are actually two clusters of democratization. The first involves the Central America, whereas the second concerns the Southern Cone (the countries south of the Panama isthmus).

<sup>15</sup> The  $G^*$  statistic differs from the common  $G$  statistic by the fact that diagonal entries in the weights matrix are assigned a value of 1 so that each country is contiguous with itself and contributes to the calculation for localized context.

<sup>16</sup> See Chen and Getis (1998) at <http://www.geog.ucsb.edu/~dongmei/ppa/ppa.html>.

<sup>17</sup> This range is in line with that used by Gleditsch and Ward (2000).

<sup>18</sup> The matrix can be based on a distance band of  $n$  kilometres as well (Gleditsch and Ward, 2000). Contiguity has been opted for here due to the large size of the majority of the countries in the dataset.

The value returned by  $G^*$  is a Z-value (see Appendix A) and may be used as a diagnostic tool. High positive values indicate the possibility of a local cluster of high values of the variable being analyzed; very low relative values a similar cluster of low values. Thus, in this case, a high value of  $G^*$  indicates spatial correlation in the democratization process, *i.e.* a country that is experiencing democratization surrounded by neighbouring countries that are also in the process of democratization. In turn, this will create a favourable bargaining environment, thereby having a positive impact on the probability of RIA formation.

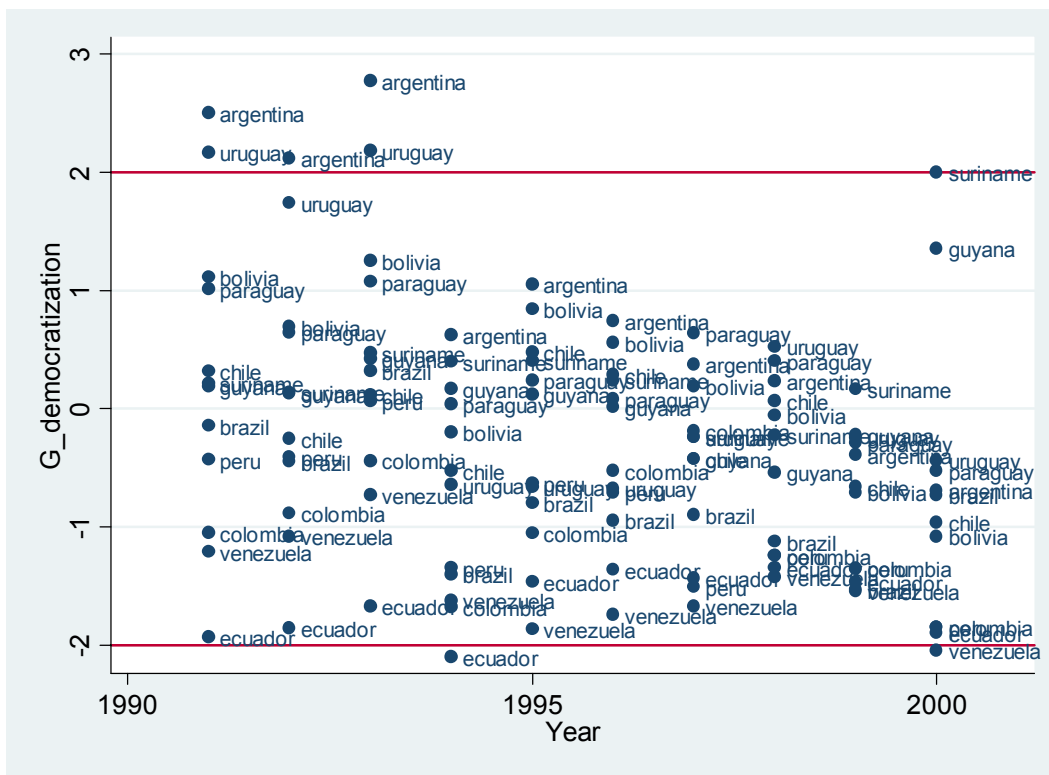


Figure 1 Spatial Correlation of Democratization related to the twelve Southern Cone countries

Figure 1 and Figure 2 show the evolution of the local clustering in the distribution of democratization in the context of the twenty countries of the dataset. Observations above and below the two lines (*i.e.*  $|G^*| > 2$ ) display significant<sup>19</sup> localized clustering of respectively high and low of democratization. For the positive points, and particularly for the significant

ones (*i.e.*  $G^* > 2$ ), the probability of the forming an RIA is expected to increase. Specifically, since democratization is thought to have a positive impact on the probability of forming a regional bloc, countries that move toward democracy in a region that is democratizing as a whole are likely to have a convergence of interests that facilitate economic integration. A final consideration concerns the distribution of the spots in Figure 1 that is decreasing over time, showing that the process of democratization in Southern Cone has been stronger in the early years of 1990s than in the end of the decade.

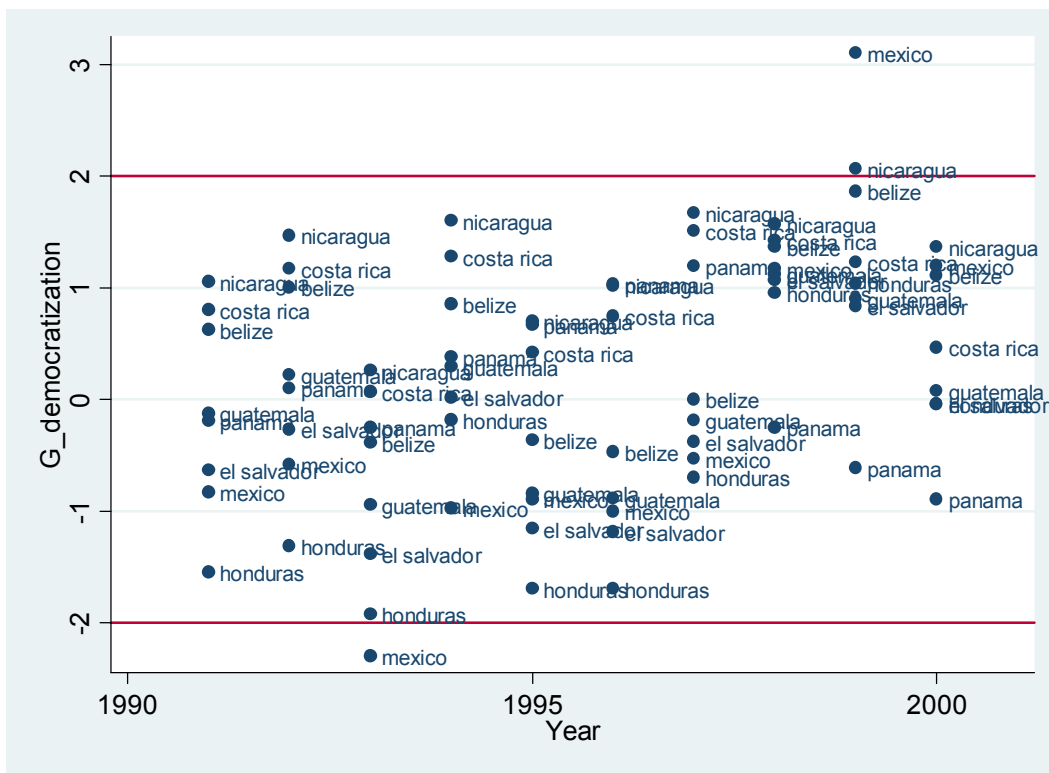


Figure 2 Spatial Correlation of Democratization related to the eight Central America countries

#### MODEL AND CASE SELECTION

In order to test each of the previous hypotheses, the following model has been built.

<sup>19</sup> Statistically significant at a 95% level.

$$RIA = \beta_1 Trade + \beta_2 Trade\_Dependence + \beta_3 RLF + \beta_4 GDP\_pc + \beta_5 SIM + \beta_6 GDP + \beta_7 \Delta GDP + \beta_8 Size\_Government + \beta_9 Trade\_Revenue + \beta_{10} Distance + \beta_{11} Border + \beta_{12} Egemony + \beta_{13} GATT\_WTO + \beta_{14} Multilateral\_Rounds + \beta_{15} RIA\_Density + \beta_{16} Democracy + \beta_{17} Democratization + \beta_{18} \sigma^2 Democratization + \beta_{19} RIA\_Lag + \epsilon$$

The **Dependent Variable**,  $RIA_{ijt}$ , is a dummy variable which equals 0 if country  $i$  and country  $j$  do not join the same RIA as in year  $t$ , equals 1 if country  $i$  and country  $j$  join the same RIA in year  $t$ . As already explained, this variable concerns only regional trade agreements; bilateral trade arrangements are excluded. The reason why bilateral trade agreements have been dropped by the analysis is that since they arise between only two countries, their impact on trade liberalization is quite small. Thus, it would not be appropriate to compare it to unilateral and multilateral trade liberalization.<sup>20</sup>

$RIA$  scores 1 only in the years in which the regional arrangement respectively is signed. This model analyzes only the formation, not the durability of the agreement. The main explanatory variables have been partially presented in the previous section. A list of the control variables is provided below (for a detailed description of the sources see the Appendix D).

$Democratization_{ijt}$  measures the total amount of change that country  $i$  and  $j$  experiences in its level of democracy over the previous decade, using Polity IV dataset (Mansfield and Snider, 1995; Gleditsch and Ward, 2000). Then, the smaller value between countries  $i$  and  $j$  is taken. The smaller value is used herein (and for the other variables as well) because the data are organized as indirect dyads, and so monadic variables cannot be used. In this dataset, about 26% of the dyads implement a process of democratization, i.e. show a positive variation in the democratic score according to Polity IV. Polity IV is the widely used index constructed by Jagers and Gurr that has proved to be quite effective in capturing the variation between and within different types of regime. This index combines five factors: (1) the competitiveness of the process of selecting a country's chief executive; (2) the openness of

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<sup>20</sup> Since each RIA is not considered as an independent actor, PTAs between one country and one RIA, e.g. Chile and CACM, are included in the analysis. Indeed, since the country lowers the tariff with every RIA member, it may be assumed that the trade liberalization is quite consistent in this case.

this process; (3) the extent to which institutional constraints limit a chief executive decision making authorities; (4) competitiveness of political participation within a country; (5) the degree to which the rules govern political participation within it. It usually ranges between -10 (autocracy) and +10 (democracy), but it has been rescaled herein, ranging between 0 and 10.

$G^*Democratization_{ijt}$  scores 1 if at least one country between  $i$  and  $j$  has a  $G^*$  statistic value greater than 2, i.e. positive statistical significant cluster of democratization; 0, otherwise. As explained, this is a way to operationalize the spatial context of democratization surrounding entities, indicating the extent of localized clustering around each observation. The reasons why a dummy variable is used herein (rather than the  $G^*$  statistic value in itself) is that what matter for the purpose of this paper are the positive statistical significant values of  $G^*$ . Indeed, the second hypothesis will be appropriately tested and effectively verified if the probability of forming a RIA increases in presence of  $G^*>2$ , i.e. statistically significant cluster of democratization. Since as Figure 1 and Figure 2 showed, the most part of the  $G^*$  values lay between -2 and +2, which are not statistically significant and so not indicative of any spatial correlation, including these values would have biased the results. In this dataset, about 10% of the dyads score 1.

$\sigma^2 Democratization_{ijt}$  measures the smaller value of the variance of democratization between countries  $i$  and  $j$  over the prior decade, using Polity IV. A high value of this variable shows a great deal of movement back and forth between democracy and autocracy, whereas lower values show a smooth and linear transition toward a democratic regime. The latter scenario is better for economic integration than the former. Namely, high values of this variable imply uncertainty and instability within a country, which is assumed to be negatively related to the formation of RIAs.

Then, according to the few previous studies in the field, the following variables are included as control variables.  $Trade_{ijt}$  is the value of the natural logarithm of exports from country  $i$  to country  $j$  from country  $j$  to country  $i$  in year  $t-1$  in constant  $(t+n)$  dollars. This is the most common way in which the trade flows between pairs of countries are measured in the economic literature. Empirical studies show that as trade between countries increases, the

probability of forming a PTA increases as well. *Trade\_Dependence* measures the minimal value of partner countries share in total export between countries  $i$  and  $j$  in year  $t-1$ . This variable captures the fact that states will likely form PTAs with their most important trade partners.

$GDP_{pc_{ijt}}$  measures the minimal value in term of GDP per capita between countries  $i$  and  $j$  in year  $t-1$ . This variable is a proxy for the level of development of a country that has supposed to have a positive impact on the probability to sign a PTA. First, the more developed is the economy of a country, the less its dependence from tariffs revenues is. Second, more developed countries are in a better position to compensate societal group who face adjustment costs due to trade liberalization (Ruggie, 1982).  $SIM_{ijt}$  measures the relative size of two countries in terms of GDP. It derives from the following formula:  $|\text{GDP}_{it}-\text{GDP}_{jt}|$ . The smaller this measure is, *i.e.* the more similar two countries are, the higher the share of intra-industry trade will be (Serlenga and Shin, 2004: 13) and so the higher the welfare gains are.  $GDP_{ijt}$  measures the smaller amount of GDP between countries  $i$  and  $j$  in year  $t-1$ . This variable captures the idea that the larger a country is, the higher is the benefit to join a PTA (Baier and Bergstrand, 2002).

$\Delta GDP_{ijt}$  measures the average of the value of economic growth between countries  $i$  and  $j$  in year  $t-1$ . It is a way to operationalize the economic health of dyads of states. Some scholars (*e.g.* Mattli, 1999) claim that an economic downturn may increase the probability of a PTA being formed.  $Size\_Government_{ijt}$  measures the minimal value of size of government between countries  $i$  and  $j$  in year  $t-1$ . The index borrowed from Fraser Institute's Economic Freedom Global Report (Gwartney and Lawson, 2005) has the advantage of encompassing both spending and taxation in one figure (Casey, 2007) and is available for every country in dataset.<sup>21</sup> This index captures the world-wide shift away from Keynesianism and state-driven development in the 1980s, which may be one of reasons for trade liberalization in developing countries.  $Trade\_Revenues_{ijt}$  measures the percentage of trade revenues with respect to the GDP in time  $t-1$ . Again, the smaller value between countries  $i$  and  $j$  is taken. The data comes from Government Finance Statistic produced by the IMF. Since the emphasis on

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<sup>21</sup> The Fraser index includes government consumption, transfers and subsidies, government enterprises and investment, and top marginal tax rates.

trade revenues of the previous section, this variable controls that PTAs have not a significant impact on the reduction of trade revenues, avoiding macroeconomic instability.

Two geographical variables that are quite common in the economic literature have been included as well.  $Distance_{ij}$  measures the distance in kilometres between the two capitals of state  $i$  and state  $j$ .  $Border_{ij}$  is a dummy variable that scores 1 if state  $i$  and  $j$  share a common border; 0 otherwise. Several authors (Krugman, 1992; Baier and Berstrand, 2002) claim that the formation of PTAs is more likely among countries that are geographically proximate.

$Democracy_{ijt}$  scores 1 if in year  $t-1$  states  $i$  and  $j$  are both democracy; 0 otherwise. This variable tests the claim that democratic pairs are more likely to form a PTA than autocratic pairs (Mansfield et al, 2002: 501-502). Moreover, including this variable assures that the impact of democratization on the formation of RIAs is genuine and does not depend on this omission of this variable. In this dataset, about 80% of the dyads score 1.

Finally, despite the emphasis of this paper is admittedly on the effect of domestic politics on regional integration, the three following variables control for the impact of external forces on the formation of PTAs.  $Hegemony$  is the US's share of world trade in year  $t-1$ , capturing the classic argument that the decline in US hegemony may have led to the creation of PTAs. Since the influence of US foreign policy has been always an important factor in driving Latin America policies, this variable is expected to play a significant role in this model.  $GATT\_WTO_{ijt}$  score 1 if both country  $i$  and  $j$  are member of GATT/WTO in year  $t-1$ ; 0 otherwise. This variable controls for the argument that member of GATT/WTO may be find convenient forming a PTA in order to gain bargaining power within these multilateral institutions (Mansfield et al, 2002; 2004; 2005).  $RIA\_Density_{ijt}$  measures the proportion of neighbouring countries that belong at least one PTA in year  $t-1$ . Again, the minimal value between countries  $i$  and  $j$  is taken. This variable captures the "domino theory" (Baldwin, 1996), *i.e.* more neighbouring countries sign PTAs, the cost of staying on the sidelines increases. The table below shows the descriptive statistics of each variable in the dataset.

Variable	Mean	Std. Dev.	Number of Obs.
<i>RIA</i>	0.039	0.195	1,900
<i>Trade</i>	14.17	6.28	1,900
<i>Trade_Dependence</i>	0.006	0.015	1,900
<i>GDP</i>	1.51	1.62	1,900
<i>SIM</i>	3.50	2.01	1,900
<i>GDP_pc</i>	1.64	0.503	1,900
$\Delta$ <i>GDP</i>	1.54	3.54	1,900
<i>Size_Government</i>	6.06	1.24	1,900
<i>Trade_Revenue</i>	1.47	1.005	1,900
<i>Distance</i>	7.83	0.816	1,900
<i>Border</i>	0.174	0.379	1,900
<i>Hegemony</i>	0.121	0.004	1,900
<i>GATT/WTO</i>	0.856	0.351	1,900
<i>Alliance</i>	0.963	0.188	1,900
<i>RIA_Density</i>	0.185	0.270	1,900
<i>Democracy</i>	0.796	0.403	1,900
<i>Democratization</i>	0.264	1.73	1,900
<i>G*Democratization</i>	0.088	0.283	1,900
$\sigma^2$ <i>Democratization</i>	0.464	0.696	1,900

**Table 1** Descriptive statistics of the variables in the dataset.

As said above, the model is tested in the Latin America. The *unit of observation* consists of all undirected dyads of twenty countries in Latin America. The complete list of countries included in this study is as follows: Argentina, Belize, Bolivia, Brazil, Chile, Colombia, Costa Rica, Ecuador, El Salvador, Honduras, Guatemala, Guyana, Mexico, Nicaragua, Panama, Paraguay, Peru, Suriname, Uruguay, and Venezuela. The number of observation of each year is given by  $(20 \times 19) / 2$  and it equals 190. The analysis involves 10 years from 1991 to 2000.

The model analyzes the formation of three very important RIAs: the Andean Pact, Mercosur, and the Central America Common Market (CACM). The first two have moved from an FTA to a CU during the period of analysis, whereas the CACM has been a CU since its creation. Moreover, the model analyzes the formation of the FTA among Colombia, Mexico, and Venezuela (Group of Three), which created an extended market of 150 million consumers and reduced tariffs by 10% over ten years, as well as the creation of other FTAs, a complete list of which forms Appendix B.

Since the dependent variable assumes a value other than 0 only in the years in which the PTA is formed, the formation of a PTA is a typical rare event. The number of dyads that

score other than 0 in the database of this project is 75. Thus, around 3.9% of the dyads will have a score other than 0.<sup>22</sup>

This study tests the previous hypotheses against competing arguments quantitatively. The main analysis involves multivariate regression of *RLA*. To estimate the model, this project will pool the data across time and country-pairs, and then a logit regression will be conducted.

Regarding the logit estimation, due to panel heteroskedasticity or serial correlation, tests of statistical significance for the parameter estimates may be biased. In some recent research on the statistical analysis of time-series cross-section data with a binary dependent variable, Beck et al. (1997; 2001) argue that one solution to this problem is to base significance tests on Huber (robust) standard errors, since they take account of any heteroskedasticity and the grouped nature (by dyad) of the data. Consequently, Huber standard errors are used in all of the following analyses. To account for the duration dependence of the dependent variable, natural cubic splines (with three knots) are included. To account for common external shocks, i.e. delays in multilateral negotiation in the Uruguay Round or financial crises inside and outside the region, time dummies have been added as well. For saving space, both splines and time dummies are not reported in the econometric analysis.

## EMPIRICAL FINDINGS

Table 2 shows the results of the econometric analysis for the logit model. Before discussing the single variable, it is useful to check the goodness-of-fit for the model, looking at the percent correctly predicted. Wooldridge (2000) suggests to report the percentage correctly predicted for each of the two possible outcomes. Consequently, about 56% of the positive outcomes are predictive correctly and about 96% of the negative outcomes are predictive correctly.<sup>23</sup> Thus, the model appears to have a reasonably good fit.

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<sup>22</sup> To compare this with another “rare event database” in the field, only 0.34% of the dyads score other than 0 in the War Dataset generated by Bennet and Stam (1998).

<sup>23</sup> Following the usual recommendations, the cutoff value has been set equal to 0.5.

**Table 2 Logit regression. Entries in parentheses are Huber standard errors clustered on the dyad. The dependent variable, RIA, measures whether or not a dyad forms a trade bloc. The coefficients of natural cubic splines and dummies time have been omitted.**

Explanatory Variables		Model 1
	<i>Constant</i>	97.37*** (16.87)
Economic Explanatory Variables	<i>Trade</i>	.026 (.048)
	<i>Trade_Dependence</i>	-11.70 (10.07)
	<i>GDP_pc</i>	-.252 (.343)
	<i>SIM</i>	.051 (.092)
	<i>GDP</i>	.462*** (.137)
	$\Delta$ GDP	-.042 (.039)
	<i>Size_Government</i>	-.104 (.133)
	<i>Trade_Revenue</i>	.059 (.224)
	Geographical Explanatory Variables	<i>Distance</i>
<i>Border</i>		.571 (.366)
<i>GATT/WTO</i>		-.659* (.375)
<i>Alliance</i>		.281 (.784)
<i>Hegemony</i>		-814.88*** (146.46)
<i>RIA_Density</i>		1.12 (.858)
<i>Democracy</i>		-1.07** (.409)
Main Explanatory Variables	<i>Democratization</i>	.307*** (.110)
	<i>G*Democratization</i>	.124*** (.405)
	$\sigma^2$ <i>Democratization</i>	-.453 (.299)
	Nr. Observation	1,900
	Prob>chi <sup>2</sup>	.000
	Pseudo R <sup>2</sup>	.2259

\*\*\* significant 99%; \*\* significant 95%; \*significant 90%

The positive sign of the Democratization coefficient confirms the first hypothesis, *i.e.* when countries move towards democracy, the probability of forming an RIA increases. The

coefficient is statistically significant. This result validates Rodrik's (1994: 69) claim: "historically sharp changes in trade policy have almost always been preceded (or accompanied) by change in the political regime". Moving toward democratic institutions increases the probability that political leaders of developing countries implement free trade reforms to reward their voters. In some circumstances these reforms can, however, encounter popular opposition, especially in the short term. Because forming an RIA is a less dramatic way to liberalize than unilateral and multilateral liberalization, voters usually support trade blocs, as several surveys indicate.<sup>24</sup> Thus, political leaders choose economic integration to remunerate their selectorate without threatening it.

The value of the coefficients in the logit is not meaningful. Using the software Clarify (King, 2000), Table 3 shows the influence of democratization on the predicted probability of a dyad forming an RIA (s.e. in brackets). Specifically, for countries that move toward democracy in a consistent manner (last column) the predicted probability of forming a RIA is 10.23%. Conversely, when countries move toward autocracy, the predicted probability of forming a RIA is a mere 0.36%. Finally, when countries do not experience any regime change, the probability of forming a RIA is still very low (1.34%). Moreover, Table 3 shows that small positive values of the explanatory variable *Democratization* have a weak impact upon the formation of RIAs. This is consistent with the argument presented above. Indeed, when the movement towards democracy is slow, e.g. values such as 1 or 2 or 3, the size of winning coalitional is likely to do not increase much. In turn, this does not put a great pressure on policy-makers to implement trade liberalization and so even regional integration does not arise. Conversely, when a country move from an autocracy to a democracy, e.g. values such as 6 or 7 or 8, the size of the winning coalition is likely to increase sharply, forcing political leaders to implement trade liberalization. In turn, this raises the likelihood of regional integration.

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<sup>24</sup> According to Latinobarometro, popular support for Mercosur and Andean Pact is quite high among their members. In 2005, 85% of the population in the region had a favourable attitudes toward economic integration (see at [http://www.latinobarometro.org/uploads/media/2005\\_02.pdf](http://www.latinobarometro.org/uploads/media/2005_02.pdf), page 82).

**Table 3 Probability of forming an RIA in the case of the presence/absence of democratization between pairs of countries**

	<i>Democratization</i>													
Dep. Var.	-5	-4	-3	-2	-1	0	1	2	3	4	5	6	7	8
RIA	0.36%	0.46%	0.61%	0.79%	1.03%	1.34%	1.74%	2.25%	2.92%	3.78%	4.88%	6.27%	8.03%	10.23%
	(.006)	(.006)	(.006)	(.005)	(.005)	(.004)	(.005)	(.009)	(.014)	(.023)	(.036)	(.055)	(.078)	(.106)

The positive sign of the  $G^*$ Democratization coefficient confirms the second hypothesis as well. Indeed, when dyads of countries that are experiencing a democratization process are surrounded by countries that are also moving toward democracy, the likelihood of economic integration increases. The coefficient is statistically significant. This verifies the positive influence of the cluster of democratization on the formation of a regional bloc. Specifically, in case of several countries that experience democratization within bounded geographical area, they have a common and simultaneous interest in trade liberalization and this condition creates a favorable bargaining environment for signing an RIA.

Using Clarify is possible to show the influence of spatial correlation of democratization on the predicted probability of a dyad forming an RIA. Pairs of countries whose  $G^*$  is equal to 1, i.e. at least one country has statistically significant positive spatial correlation ( $G^* > 2$ ), shows a likelihood of forming a RIA at 4.1% (s.e. equals to .018). Conversely, and in line with the second hypothesis, the predicted probability of forming an RIA is very low for a not statistically significant value of  $G^*$  ( $G^* < 2$ ). Indeed, for a local cluster of low values of democratization, i.e. pairs of countries that are not experiencing democratization surrounded by other countries not moving toward democracy, or pairs of countries with no statistically significant positive spatial correlation ( $G^* < 2$ ), the predicted probability of forming a regional bloc is close to 1 (s.e. equals to .004).

Finally, the negative sign of  $\sigma^2$ Democratization coefficient confirms the idea that a smooth and linear transition toward a democratic regime increases the probability of forming an RIA. However, the coefficient is statistically significant.

Regarding the other control variables, the sign of all the coefficients is in line with the other studies in the field despite some of them turn out to be not statistically significant. The only statistically significant variable that has opposite sign than expected is *Democracy*. Here it has negative sign, whereas in the previous studies democratic regime has a positive impact on the probability of regional integration. One possible explanation involves the sample restriction of the dataset. Specifically, as already said, about 80% of the dyads scores 1 in the dataset; this allows a little variation of the explanatory variable *Democracy*, biasing its impact upon the dependent variable. A final consideration concerns the magnitude of the impact of these explanatory variables on the dependent variable. Indeed, it is fair to say that despite they are statistical significant, the effect of these variables on the probability of regional integration appears to be quite low, especially in the case of the  $G^*$ *Democratization*.

#### ROBUSTNESS CHECKS

Given the admittedly severe sample restriction, it is useful to devote a section to assess the robustness of the previous results. First, since the formation of a RIA is a typical rare event, a rare event logit has been run to control for the possibility of biased and underestimated coefficients (King and Zeng, 2001). Second, because several coefficients of the model have turned out not to be statistically significant, the estimation is run again excluding these variables. Both these corrections produce results that display no noteworthy differences and that are available upon request. Finally, because the data are organized as a panel, there is a problem of heterogeneity, as Green et al. (2000) famously posits. Several scholars (King, 2001; Beck and Katz, 2004) suggest using the fixed effect model, though they voice caution regarding mis-specified dynamics that may lead to the unnecessary use of fixed effect (Beck and Katz, 2001). Beside this debate, since the dependent variable scores 0 before and after the formation of a RIA, the problem of heterogeneity is likely to be quite consistent. Thus, following also previous studies (Mansfield et al., 2002), a fixed-effect model is run herein to check the robustness of the findings.<sup>25</sup>

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<sup>25</sup> The variables Alliance, Border and Distance have been dropped from the model due to collinearity.

**Table 5 Fixed Effect Logit regression. The dependent variable, RIA, measures whether or not a dyad forms a trade bloc. The coefficients of natural cubic splines and dummies time have been omitted.**

Explanatory Variables		Model 1
Economic Explanatory Variables	<i>Trade</i>	-.070 (.299)
	<i>Trade_Dependence</i>	-9.38 (3.50)
	<i>GDP_pc</i>	-11.11 (7.66)
	<i>SIM</i>	-2.70* (.155)
	<i>GDP</i>	-28.87*** (7.80)
	$\Delta$ GDP	.030 (.105)
	<i>Size_Government</i>	-1.45 (.901)
	<i>Trade_Revenue</i>	1.34* (.793)
Political Explanatory Variables	<i>Egemony</i>	3232.77*** (937.13)
	<i>GATT/WTO</i>	-5.30*** (1.47)
	<i>Density</i>	-.725 (.181)
	<i>Democracy</i>	-8.34*** (2.70)
Main Explanatory Variables	<i>Democratization</i>	.131 (.383)
	<i>G*Democratization</i>	3.10** (1.32)
	$\sigma^2$ <i>Democratization</i>	.886 (.924)
	Nr. Observation	620
	Nr. Groups	62
	Prob>chi <sup>2</sup>	.000
	LR chi <sup>2</sup> (24)	226.77

\*\*\* significant 99%; \*\* significant 95%; \*significant 90%

The table above shows that this model does not significantly affect the results of the coefficient of the variable *G\*Democratization* that is still positive and statistical significant. Conversely, the coefficient of the variable *Democratization* is still positive, but is not statistically significant anymore. Thus, the result of the latter variable does not appear to be robust in the fixed effect analysis. However, for dyad-year data with a binary dependent

variable like forming a PTA the fixed effect model has two main problems. First, in the fixed effect logit model only 62 of the original 190 dyads have been analyzed. Since the formation of a PTA is a rare event, the inclusion of the fixed effect requires not analyzing dyads that never establish a trade bloc. Thus, while the most part of the dyads that never form a PTA are more likely to not move toward democracy,<sup>26</sup> the use of fixed effect gives democratization no credit for the lack of trade arrangements in these dyads. Second, the fixed effect almost always masks the impact of slowly changing independent variable, such as the variable *Democratization* (Beck and Katz, 2000). Thus, the fixed effect masks the relationship between *Democratization* and the dependent variable.

## CONCLUSION

This article represents a first step towards analyzing and testing the impact of democratization on the formation of regional trade blocs. In general terms, this paper confirms that domestic politics matter in economic integration and that a great deal of work remains to be done to individuate which factors play a role in the current waves of regionalism. The main findings can be summarized in three points. Firstly, the probability of forming an RIA increases among states that experience democratization. Second, the “neighbours effect” plays a significant role in economic integration. Local clustering of high values of democratization increases the likelihood of states joining an RIA. This finding confirms the validity of the diffusion effect that has been successfully applied in several studies in the recent years (Elkins and Simmon, 2006; Egger and Larch, 2006). Third, the heterogeneity problem that is likely to affect this kind of dataset has to be treated seriously and any conclusion concerning a variable that has not been proved to be robust in a fixed effect analysis should be drawn very carefully. However, since the formation of a PTA is a rare event, a fixed effect regression allows for estimation concerning a relatively small number of pairs of countries, narrowing significantly the number of cases of the analysis. Thus, finding a balance to this trade-off is one of the main challenges of further studies in the field that aim to develop generalized theories via systematic testing.

In conclusion, it is necessary to emphasize the need for more research using a broader selection of countries when data constraints are overcome and using a broader set of

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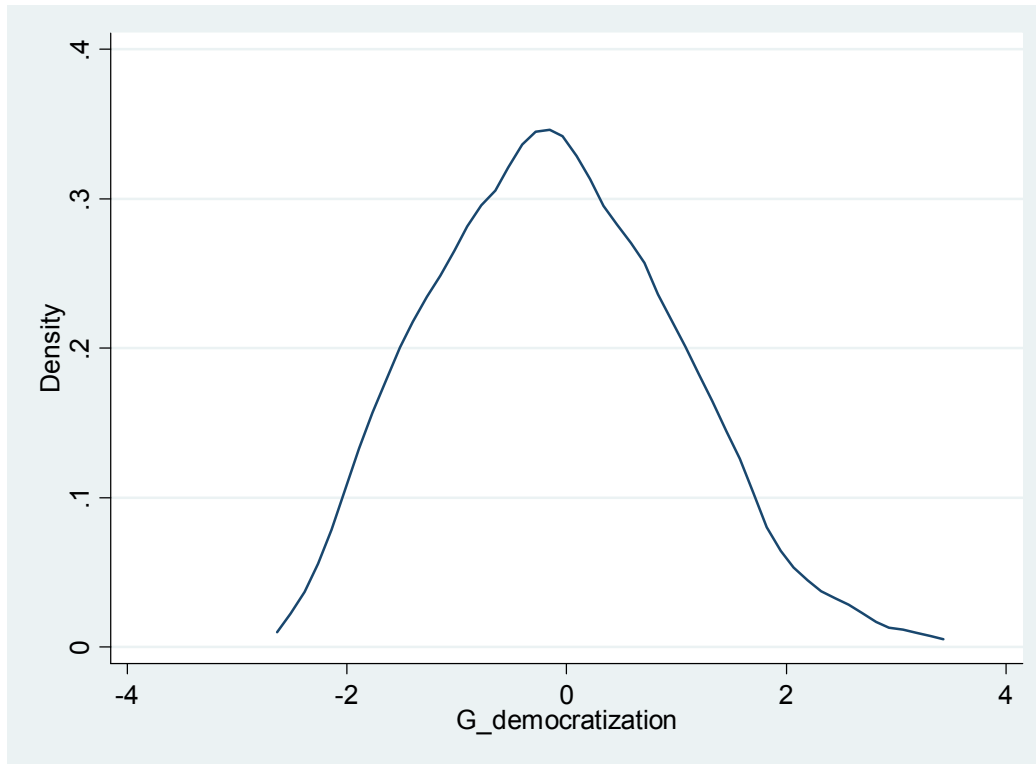
<sup>26</sup> As stated above, in this dataset only 26% of the dyads implement a process of democratization.

measures of democratization, the operationalization of which is intrinsically problematic. Two different improvements are suggested herein. First, further studies may apply these models to other regions when the constraints of data collection are overcome. In doing so, it will be possible to make more general statements on the results. Second, at a methodological level, since “time is of the essence” (Box-Steffensmeier and Jones, 1997) in the formation of PTAs, event history models may be implemented in this field to analyze the number, timing, and sequence of changes in the dependent variable.

#### APPENDIX A

	Argentina	Belize	Bolivia	Brazil	Chile	Colombia	Costa Rica	Ecuador	El Salvador	Guatemala	Guyana	Honduras	Mexico	Nicaragua	Panama	Paraguay	Peru	Suriname	Uruguay	Venezuela
Argentina	1	0	1	1	1	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0
Belize	0	0	0	0	0	0	0	0	1	1	0	1	1	1	0	0	0	0	0	0
Bolivia	1	0	1	1	1	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0
Brazil	1	0	1	1	0	1	0	0	0	0	1	0	0	0	0	1	1	1	1	1
Chile	1	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0
Colombia	0	0	0	1	0	1	0	1	0	0	0	0	0	0	1	0	1	0	0	1
Costa Rica	0	0	0	0	0	0	1	0	1	1	0	1	0	1	1	0	0	0	0	0
Ecuador	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	1	0	0	0
El Salvador	0	1	0	0	0	0	1	0	1	1	0	1	0	1	0	0	0	0	0	0
Guatemala	0	1	0	0	0	0	1	0	1	1	0	1	0	1	0	0	0	0	0	0
Guyana	0	0	0	1	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0	1
Honduras	0	1	0	0	0	0	1	0	1	1	0	0	0	0	0	0	0	0	0	0
Mexico	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Nicaragua	0	0	0	0	0	0	1	0	1	1	0	1	0	1	1	0	0	0	0	0
Panama	0	0	0	0	0	1	1	0	0	0	0	1	0	1	1	0	0	0	0	0
Paraguay	1	0	1	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0
Peru	0	0	1	1	1	1	0	1	0	0	0	0	0	0	0	0	1	0	0	0
Suriname	0	0	0	1	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0
Uruguay	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
Venezuela	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1

**Table 6 Matrix of contiguities: 1 if the two countries share the border; 0 otherwise**



**Figure 3 Kernel distribution of the values G\*Democratization**

APPENDIX B

**Table Source WTO data; North is OECD 24 plus Lichtenstein.**

	East Asia and Pacific	Europe and Central Asia	Latin America and Caribbean	Middle East and North Africa	South Asia	Sub-Saharan Africa	North
Countries Belonging at Least one PTA	26	26	35	20	8	48	11
Avg. No. of PTAs per Country	2	6	8	5	4	4	11
Max No. of PTAs per Country	7	12	19	13	9	9	29

APPENDIX C

Year	RIA	
	FTA	CU
1991	Mercosur	CACM
1993	Andean Pact	
1994	Group of Three (Colombia, Mexico, Venezuela)	Mercosur
1995		Andean Pact
1997	Peru enters Andean Pact	
1999	CACM - Chile	
2000	CACM – Mexico	

APPENDIX D – Description of the data

*Trade and Trade Dependence, and Hegemony:* from EcoWin Database (IMF sources).

*GDP, per capita GDP, and GDP growth:* 1990-2003 from Energy Information Administration (EIA).

*Distance and Border:* from CEPII dataset.

*Alliance and WTO:* from COW dataset.

*Democracy and Democratization:* from Polity IV dataset.

*Size of Government:* from Fraser Institute – Economic Freedom of the World.

*Trade Revenues:* from Government Finance Statistic (IMF sources).

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