TRINITY COLLEGE DUBLIN
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Ph.D. in Political Science

Explaining The New Regionalism: The Political Economy Of Trade Agreements

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Leonardo Baccini

Summary

The overarching research question defining this project is the following one: *How do domestic politics affect the formation of trade blocs in the current wave of regionalism?* This general question is divided into two more specific questions. First, how do domestic institutions impact upon the formation of preferential trade agreements? Second, under which conditions do interest groups explain the proliferation of trading blocs in the last two decades?

The main aims of this project are three-fold. First, I explain the extraordinary proliferation of trade blocs in recent years. The number of agreements in force as of today's date is around 400, having increased eight-fold in the last twenty years. Every member of the World Trade Organization (with the exception of Mongolia) is now a member of a PTA. Moreover, the proliferation of trade blocs shows no signs of slowing down in the near future. For instance, the United States is currently negotiating 16 bilateral trade agreements. Second, I contribute to the ongoing debate regarding the impact of domestic politics and, in particular, institutions on economic integration. Indeed, although this project focuses on preferential trade agreements, it has implications for a wide range of international scenarios where cooperation varies over time and across countries. Third, this project goes beyond the existing literature by taking into account a richer conceptualization of insti-

tutions drawing on the comparative politics literature and relevant empirical indicators. This will provide a better description of political and economic institutions and especially of the quality thereof.

This study has five discipline-specific findings that fill gaps left by previous studies. First, I find that dampening transaction and monitoring costs institutional similarity, *i.e.* the degree of distance between relevant features of pairs of countries' institutions, is an important driver of the new regionalism. Second, this project shows that when facing trade diversion, exporters react to trade blocs formed by competitors and push their government into signing an agreement with the country in which their exports are threatened. In doing so, this study provides a nouvelle explanations of the *domino theory* effect. Third, I find that by easing the capability to detect opportunistic behaviors, political and economic transparency impacts upon the design of bilateral trade agreements - the degree of flexibility, specifically - between the European Union and developing countries. Fourth, I show that by implementing specific economic reforms developing countries send a credible signal to the US, increasing the probability of forming bilateral trade agreements. Finally, I found that since democratic leaders must remunerate the median voter to keep office, democratization pursued by developing countries since 1980s is an important driver of the proliferation of trade blocs in the last two decades.

This study uses a mixture of formal and expositional argumentation to develop the argument. A game theoretic approach is utilized to explain the conditions under which governments choose policy coordination to reach a trade agreement. Regional integration, however, comprises a number of different elements. Thus, conceptualizing all these components in a game theoretic fashion increases the complexity of a formal model to the point where the computational costs outweigh the explanatory benefits. When this is the case, a less formal exposition of the theoretical framework is provided.

As previous studies show (Baier and Bergstrand, 2004; Mansfield *et al.*

2002), statistical analysis is of great help in testing the formation of preferential trade agreements. With respect to the data, I use a newly compiled dataset that covers 167 countries from 1990 to 2007. The unit of observation consists of all undirected dyads by year of these 167 countries. Finally, to investigate the several hypotheses developed in each chapter, this project uses two distinctive quantitative methods: a history model and a Markov transition model. These two methods are similar and complementary approaches to model temporal dependent data (Beck *et al.*, 2002). Theoretically, we can imagine the formation of trade blocs between pairs of countries both as a failure in their capability to survive without cooperation (history model) and as a transition from a state of no agreement to a state of enduring cooperation (Markov chain model).

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In writing about the new regionalism, I have deliberately tried to emulate the work of Andreas Dür, my co-author on Chapter 4 of this thesis as well as a growing number of papers. I have learned from him much more than I can communicate. I have also benefited from discussions on methodological details of this project with Andrew Martin, Randy Calvert, and Robert Walker during the EITM Summer School in St. Louis. I also thank Kristian Gleditsch and Jos Elkins for suggestions on issues of spatial econometrics. I am further grateful to Yoram Haftel and Soo Yeon Kim for their insights into the new regionalism. Michael Bechtel and Johannes Urpelainen provided criticism that improved my understanding of the concept of flexibility, the signaling theory and, in general, of everything that can possibly be formalized. Krzysztof Pelc helped me to think more carefully about the relationship between institutions and adjustment costs. Stephanie Rickard provided helpful insights on the early stages of this dissertation. I also wish to thank all the scholars who provided enormously helpful feedback at the various conferences where I have presented parts of this project over the past three years. I thank Marco Caminiti for some Latex tips. Last but not least, I would like to thank Alexandra Kohn for proofreading my poor English prose.

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Ai miei genitori,
che mi hanno insegnato l'onestà e la curiosità intellettuale,
e ad Alex, che ha fatto tutto il resto.

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Chapter 1

The Political Economy of Trade Agreements

In 1454 Lorenzo de' Medici, ruler of the Florentine Republic, signed an important trade agreement with the Turkish Empire opening up one of the richest Mediterranean markets to Tuscan merchants. Due to this agreement, by the end of the fifteenth century Florentines had organized themselves into a powerful trading community in Turkey and threatened the Venetian businesses that had traditionally held a trade monopoly in that region (Goldthwaite, 1982: 37). On the 21^{st} of April 2009, the bilateral trade agreement between China and New Zealand was the most recent of 197 trade agreements to be notified since the creation of the GATT/WTO. This agreement was also a historical one: New Zealand was the first OECD country to reach bilateral trade negotiations with China and was the first country to recognize China as a market economy. Between these two dates hundreds of trade agreements were signed among towns and regions before the creation of the nation state and among countries since the beginning of the nineteenth century.[1]

[1]Broadly speaking, a preferential trade agreement is an arrangement that liberalizes trade among members. The project uses the terms "preferential trade agreement" and "trade (or trading) bloc" interchangeably and in a general way. Conversely, "regional trade arrangement" refers to an agreement among more than two countries (also called plurilateral), whereas "bilateral trade agreement" denotes an agreement between only two states.

Despite the historical pedigree of this phenomenon, the magnitude of the proliferation of trade agreements in the last two decades has no comparison in economic history. The trend has become so important that Mansfield and Milner (1999) coined the *ad hoc* term "new regionalism" to describe the booming increase in trade blocs. The number of agreements in force as of today's date is around 400, having increased eight-fold in the last twenty years.[2] The World Trade Organization counted 40 new preferential trade agreements in 2004 alone and every member of the World Trade Organization with the exception of Mongolia is now a member of a trade agreement. Moreover, no region in the world is any longer affected by "reluctant regionalism" to use an expression that only a few years ago described the lack of trade blocs in Asia (Chase 2005: 222). China and Japan, for instance, are currently negotiating respectively 28 and 17 bilateral trade agreements. Finally, the proliferation of preferential trade agreements is not limited to the developed economies. The average African country belongs to four different agreements, and the average Latin American country belongs to seven agreements. In sum, the magnitude of the phenomenon seems to indicate that the new regionalism is one of the main features of globalization (Hettne, 1999). As such, the new regionalism has crucial implications not only for international trade, but also, amongst others, for economic development, poverty reduction, regulatory issues, and diplomatic relationships among states.

Given this impressive increase in the creation of trade blocs, this project answers the following research question: *How do domestic politics drive the formation of preferential trade agreements?* By domestic politics, I mean both institutions and interest groups. Although many studies examine one of the two elements in isolation from the other, I combine political institutions and domestic preferences. Regarding institutions, my central claim is that they play a crucial role in both phases of regional cooperation: the bargaining phase and the enforcement phase. Not all domestic institutions, however, have this effect; rather it is limited to high quality institutions. Specifically, good domestic institutions - high level of rule of law, for instance - decrease

[2]Only a portion of these agreements is usually notified to the World Trade Organization.

uncertainty and, in turn, reduce transaction costs in the bargaining phase of a trade bloc.[3] Hence, because the bargaining process is less costly and less volatile for each state, countries are more likely to form a preferential trade agreement. Moreover, good domestic institutions mitigate the problem of compliance by bolstering the ability of states to make credible commitments among member countries. In doing so, institutions dampen the monitoring costs that countries have to sustain during the enforcement phase of a trade bloc.

Finally, good domestic institutions impact upon international institutions. Specifically, by allowing for the differentiation between involuntary defection (Putnam, 1988) and opportunism, the quality of institutions affects the design of trade agreements. High degree of transparency, for instance, enables the inclusion of discretionary provisions that in turn ease cooperation among countries. In other words, my work is a complement to those studies that show the impact of international organizations on domestic politics (Pevehouse, 2005), suggesting that these two elements reinforce each other rather than constituting a uni-directional chain of cause and effect.

Regarding interest groups, I argue that states form preferential trade agreements in response to political pressure from organized groups in society. Further, I show that this political pressure from lobbies is a reaction to trade policies implemented by competing countries to keep a share of the market. In sum, I claim that external policies, such as the creation of a trade bloc, are determined endogenously in the political system of involved countries. Thus, understanding regional integration requires a systematic examination of the domestic system of each country alone as well recognition of the interdependence of one state upon another. To accomplish this, I develop a theoretical framework that describes the two phases of cooperation and test this frame-

[3]The definition of transaction costs is still controversial. Coase, who introduced the concept in 1937, defined transaction costs as simply "the cost of using the price mechanism" (Coase, 1937: 387). In general terms, transaction costs are associated with opportunism and a lack of an efficient way to process information (Williamson, 1979: 234).

work quantitatively in a comparative analysis of countries from 1990 to 2007.

The project's principal contribution is that both institutional similarity among states and quality of institutions - in terms of low level of corruption, for instance - are major drivers of the new regionalism. These findings will not surprise readers familiar with the literature on new institutional economy. My analysis suggests that studies on international cooperation theory should follow this well-trodden path. Moreover, despite the focus on trade agreements, the relevance of these results involves at least two aspects of an ongoing debate in international political economy. First, although my political-economic model does not apply directly to non-economic agreements, results obtained herein have implications for a wide range of international organizations where cooperation varies over time and across countries.

Second, many previous studies in political economy treat institutions unidimensionally, usually distinguishing only between democracies and autocracies, whereas this study provides a richer conceptualization of institutions, which may be used to answer to research questions not limited to the realm of trade. Since the emphasis of this study is on a specific dimension of domestic institutions, a definition is necessary at this point. In line with the concept of governance, I define institutions as "the manner in which power is exercised in the management of a country's economic and social resources for development" (World Bank, 1992: 3). Hence, in this work I focus on the quality of institutions and not, as is common practice in comparative politics, on the type of institutions, such as presidential system versus parliamentary system or proportional system versus majoritarian system. In other words, I am interested in assessing whether rules work in political systems and how this affects cooperation among countries rather than in distinguishing between different kind of rules.

Another important contribution of this project concerns the explanations of the political and economic drivers of EU and US bilateralism.[4] This part

[4]By *EU and US bilateralism* I mean the formation of bilateral trade agreements between

of the study shows that trade agreements are no longer exclusively an instrument of trade policy, but more generally are a tool to manage globalization and to redistribute the benefits and the costs of economic cooperation. In this regard, the US and the EU have been the best pursuers of so-called *conditional agreements*. Specifically, these two economic powers open their domestic markets for goods to developing countries in return for liberalization of service markets in developing countries. Both the US and EU provide traditional trade gains to developing countries, demanding in return that trade partners acquiescence to rules governing investment and intellectual property rights. Thus, EU and US bilateralism is (and will be) a crucial factor of development and governance.

Finally, evidence provided herein suggests that the claim that democracies are more likely to implement regional integration is problematic. More precisely, democracies cooperate more than non-democracies only if they have high quality institutions, homogeneous institutions with the other member countries, politically assertive export-oriented groups, and if they are able to reap comparative advantage benefits from forming a trade bloc. If some of these conditions are missing, democracies show the same (unsatisfactory) record than non-democracies in terms of economic cooperation. Furthermore, the study questions the claim that the key element in cooperation is electoral accountability. Indeed, once other institutional features are controlled for, the impact of electoral accountability is usually irrelevant. The results of this project shed light on our understanding of international cooperation in general, and economic integration in particular. Last, but not least, my findings have important policy implications, especially in relation the developing world.

the EU and developing countries and between the US and developing countries.

1.1 Other Explanations

The explanatory framework developed in this project draws from a large body of literature in economics and political science, but it is distinct from both. Due to the salience of the topic there is no shortage of explanations for economic cooperation. This study distinguishes between two general explanations: economic explanations and political explanations.

1.1.1 Economic Explanations

Economic studies usually treat trade blocs as an exogenous variable and evaluate the static impact thereof on national and world welfare. Viner (1950) was the first to point out that the welfare effects of customs unions could be ambiguous.[5] To explain this idea, he used the terminology "trade creating" and "trade diverting". A customs union could result in both trade creation among its members, as trade barriers within the group are reduced, and trade diversion, when the increased trade between countries forming the preferential trading agreement comes at the expense of trade formerly taking place with third countries. Thus, the welfare effect of a customs union depends on the relative magnitude of these opposite results.

In addition to these static welfare issues, which dominated the literature for four decades, Bhagwati (1993) argues that it is necessary to examine a "dynamic time path" effect, especially in the current wave of regionalism. Just as Viner introduced the key concepts of trade creation and trade diversion, Bhagwati introduced the key concepts of "stumbling blocs" and "building blocs". The former concept states that the spread of preferential trade agreements is likely to damage the multilateral trading system and is

[5]There are various types of trade blocs: Partial Preferential Agreements grant member states preferential access to a selected segmented of their markets; Free Trade Areas eliminate internal trade barriers; Customs Unions eliminate internal trade barriers and impose a common external tariff; Common Markets allow the free movement of factors of production and finished products across national borders; finally Economic and Monetary Unions are common markets with a common currency.

often associated with the pursuit of beggar-thy-neighbour policies. At the extreme, those who share the stumbling blocs view foresee the possibility of a world of trading blocs with relatively high barriers between them, in which trade diversion becomes the norm and an outright trade war is always a possibility. The latter concept states that, due to the dominating effects of trade creation, regionalism leads to further trade liberalization and improves multilateralism.

According to the Theory of the Second Best (1956), if an economy has at least two market distortions, correcting one of them may either increase or decrease welfare. Thus, a trade bloc being a typical case of Second Best equilibrium, it is not possible to address this problem in an entirely unequivocal fashion. Both of these claims have several lines of reasoning. On one side, while intra-bloc trade increases under a trade agreement, countries within a preferential trade agreement become more likely to erect barriers against parties outside the agreement. Moreover, concentrating resources on the formation of a trade bloc may distract attention from multilateral liberalization. On the other side, using the natural trading blocs argument, Krugman (1991) and Summers (1991) argue that preferential trade agreements work well when they match countries which should "naturally" be economically intertwined with each other because of proximity.

Economic studies deal mainly with the relationship between regionalism and multilateralism but are not focused on the formation of trade blocs *per se*. Beyond the *domino theory* developed by Baldwin (1993) that will be described in detail in Chapter 4, Baier and Bergstrand (2004) provide the first (and, to date, only) systematic analysis of the economic determinants of the formation of preferential trade agreements. Their main findings can be summarized as follows. Pairs of countries are more likely to form a trade agreement: (i) the closer the two countries are geographically; (ii) the more remote a pair of natural trading partners is from the rest of the world; and (iii) the larger and more similar in economic size two trading partners are.

1.1.2 Political Explanations

As even Krugman (1993: 61) admits, economic studies provide a "grossly unrealistic... description of trade politics". Thus, normative trade theory provides a rigorous model of regional integration, but fails to take political factors into account. Previous research indicates that an explanation that focuses on political factors could complement economic explanations of the formation of preferential trade agreements. We distinguish six broad explanations, emphasizing learning and emulation, geopolitical balancing, common changes at the domestic level, the demand of integration from organized groups in the society, common external shocks, and reaction to discrimination.

A first explanation for the new regionalism stresses learning and emulation. Learning is linked to the perceived success of policies; the perceived success of the trade policies of one or several countries may thus lead others to adopt similar policies (Krueger, 1997). The economic success of the member countries of the European Economic Community, for example, may have motivated economic integration among countries in Latin America and Africa in the 1960s (Pomfret, 2001). By contrast, emulation is defined as simply ritualistically "following or doing oppositely of others" (Franzese and Hays, 2008: 572). For example, it may be argued that emerging countries such as South Korea are emulating Mexico's and Chile's strategy of signing free trade agreements with a large number of developed and developing countries. Emulation and learning from other countries is particularly likely in the presence of cross-country policy networks, which, again, is more likely among countries with a similar culture.

Second, the spread of preferential trade agreements may result from the need for counterbalancing the trade-policy choices of other countries. Neorealist International Relations theory argues that the anarchic structure of the international system makes states apprehensive of increases in the power of other states, as these states may use their new capabilities to attack and de-

feat them (Waltz, 1979). Whenever preferential trade agreements stimulate trade flows between two countries, they lead to a more efficient allocation of resources and thus free up some resources for military use (Gowa, 1994). The increasing wealth and power of member countries should be of concern to excluded countries. An agreement between two countries may thus force other dyads to follow suit, with the aim of retaining their current relative position vis-à-vis these countries. According to this view, what we should witness is the development of rival trade blocs that mirror security alliances.

Third, the new regionalism could be a result of the spread of state characteristics that are positively related to the probability of concluding a preferential trade agreement. Existing research has shown that democratic dyads are more likely to sign a preferential trade agreement (Mansfield *et al.*, 2002). The theoretical rationale given for this finding is that democratic governments may use trade agreements as a signaling device in relation to domestic constituents. Voters with little information about government policies may blame these policies for an economic downturn, even if that downturn is a result of exogenous factors. A preferential trade agreement hence may be a device that governments in democratic countries use to signal to voters that they are implementing sensible economic policies.[6] Following this view, the spread of democracy since the 1980s, which saw countries in Latin America, Central and Eastern Europe, and Asia change their regime type, may explain the concurrent proliferation of preferential trade agreements.

Fourth, Chase (2005) argues that the proliferation of trading blocs depends on dynamic considerations that motivate interest groups to lobby for regional integration. The argument is that producers seek a trade agreement when they can reap benefits from the economies of scale in production by exporting to a larger market. Moreover, producers seek regional integration when they have the opportunity to move stages of production across borders.

[6]In a recent paper, Mansfield *et al.* (2008) show that the lower the number of veto players within a given democracy, the higher the probability that it will be a member of a preferential trade agreement.

The author tests the argument in a comparative analysis of trade blocs from the 1920s to the 1990s. Similarly, Mattli (1999) argues that the demand for integration arises from companies wishing to decrease transaction costs and to reap the benefits from economies of scale. However, he claims that integration is only possible if regional powers solve the coordination problem. According to Mattli (1999: 103), the European Union is a successful trade bloc due to the presence of Germany as a regional power, whereas integration failed in Asia due to the lack of such a power (Mattli, 1999:163).

Fifth, parallel trade policy choices can be a result of external shocks that affect all countries in the system equally. The stagnation of the multilateral process of trade liberalization, for example, may create incentives for states to pursue preferential trade liberalization. Realizing that they cannot achieve better access to foreign markets by way of a multilateral trade agreement, exporters in different countries may decide to lobby their governments for the pursuit of preferential trade agreements. Alternatively, states may sign preferential trade agreements to increase their bargaining power during multilateral trade talks at the level of the World Trade Organization (Mansfield and Reinhardt, 2003). The drawn out negotiations in the Uruguay Round and in the Doha Development Agenda hence may explain the current proliferation of preferential trade agreements. A final external shock that may account for the spread of preferential trade agreements is the reduction of trade distance as a result of technological progress.

Finally, reaction to discrimination may explain the proliferation of trade agreements. In this view, preferential trade agreements impose costs on excluded countries, in the form of trade and investment diversion, making the latter eager to join or to set up a rival agreement. Following this line of reasoning, Kenneth Oye argued that discriminatory trade policies in the 1930s and the 1980s had the unintended consequence of promoting further openness (Oye, 1992). There is also strong evidence to suggest that the North American Free Trade Agreement (NAFTA, 1994) was a consequence of Mexico's reaction to the creation of the Canada-United States free trade agreement

in 1988 (Gruber, 2000). NAFTA and the investment diversion that it may have caused, in turn, was a major stimulus for Japan's decision to conclude a trade agreement with Mexico (Manger, 2005a).

This body of work provides evidence as to how political factors explain the formation of preferential trade agreements. Moreover, it represents an alternative way of thinking with respect to economic models. Yet, there are unsolved analytical puzzles, and empirical work to date has not systematically examined domestic political variables in a large number of countries. In explaining the new regionalism, this project accepts the challenge by taking seriously domestic politics in general, and political institutions in particular.

1.2 Preparing the Data

As stated above, the aim of this project is to investigate the formation of preferential trade agreements (henceforth, PTAs) among a large number of countries during the current wave of regionalism. In line with *large-n* investigation, one of the main priorities of this project is the collection of data to quantitatively test the hypotheses developed in the following chapters. In this regard, the creation of an original database represents a further contribution of this study. This all-inclusive approach is intended to avoid the problem of selection bias. However, in view of the large number of institutional indicators that is used herein, the availability of data is limited for some countries. In addition, one of the main challenges of this project is to systematically measure the design of PTAs. In this respect, data collection needs to look at the legal articles of trade agreements in the dataset with manual coding of each treaty text. Since this study concerns the formation of more than 250 PTAs (see below for detail), analyzing the design of each agreement is a not feasible task. Thus, the strategy of this project is to first pursue a general investigation taking into account as many countries as possible and then to engage in an additional analysis with a subset of states for which a more refined measurement of the dependent variable is available.

Table 1.1. Countries in the dataset by continent.

Europe	Americas	Asia and Oceania	Africa
Albania	Argentina	Afghanistan	Angola
Armenia	Bahamas	United Arab Emirates	Burundi
Austria	Belize	Azerbaijan	Benin
Belgium	Bolivia	Bangladesh	Burkina Faso
Bulgaria	Brazil	Bahrain	Botswana
Bosnia and Herzegovina	Barbados	Brunei	Central African Republic
Belarus	Canada	Bhutan	Cote d'Ivoire
Switzerland	Chile	China	Cameroon
Cyprus	Colombia	Hong Kong	Congo (Brazzaville)
Czech Republic	Uruguay	Indonesia	Comoros
Germany	United States	India	Cape Verde
Denmark	Venezuela	Iran	Djibouti
Spain	Costa Rica	Iraq	Algeria
Estonia	Cuba	Jordan	Egypt
Finland	Dominica	Japan	Eritrea
France	Dominican Republic	Kazakhstan	Ethiopia
United Kingdom	Ecuador	Kyrgyzstan	Gabon
Georgia	Grenada	Cambodia	Ghana
Greece	Guatemala	Korea, South	Guinea
Croatia	Guyana	Kuwait	Gambia
Hungary	Honduras	Laos	Guinea-Bissau
Ireland	Haiti	Lebanon	Equatorial Guinea
Iceland	Jamaica	Sri Lanka	Kenya
Israel	Mexico	Mongolia	Libya
Italy	Nicaragua	Mauritius	Lesotho
Lithuania	Panama	Malaysia	Morocco
Luxembourg	Peru	Nepal	Madagascar
Latvia	Paraguay	Oman	Mali
Moldova	El Salvador	Pakistan	Mozambique
Macedonia	Suriname	Philippines	Mauritania
Malta	Trinidad and Tobago	Qatar	Malawi
Netherlands		Saudi Arabia	Namibia
Norway		Singapore	Niger
Poland		Seychelles	Nigeria
Portugal		Syria	Rwanda
Romania		Thailand	Sudan
Russia		Tajikistan	Senegal
Slovakia		Turkmenistan	Sierra Leone
Slovenia		Taiwan	Somalia
Sweden		Uzbekistan	Swaziland
Turkey		Vietnam	Chad
Ukraine		Australia	Togo
Serbia		Fiji	Tanzania
		New Zealand	Tunisia
		Papa New Guinea	Uganda
			South Africa
			Congo (Kinshasa)
			Zambia
			Zimbabwe

The unit of observation consists of dyads by year of 167 countries that have available data on institutional indicators (see Table 1.1). I use both indirect dyads analysis and direct dyads analysis, though I report only analysis

of the former and use the analysis of the latter as a robustness check.[7] In the case of indirect dyads, the number of observations of each year is given by $\frac{168 \times 167}{2}$ and it equals 13,861. In the case of direct dyads, the number of observations of each year is given by 168×167 and it equals 27,722. The analysis covers 18 years from 1990 to 2007.

The selection of this time-frame is motivated by strong theoretical reasons. Both the economic literature (Ethier, 1998) and political science literature on PTAs (Mansfield and Milner, 1999) has stressed the unique features of the new regionalism compare to the old regionalism in 1950s and 1960s. Ethier (1998: 1150-51) identifies three specific characteristics of the new regionalism. First, the new regionalism typically involves one or more small countries linking up with a large country. Second, typically, the small countries have recently implemented important economic reforms. Third, the liberalization is achieved primarily by small countries, *i.e.* trade liberalization is one-sided. Three chapters of this study (Chapter 5, 6, and 7) deal precisely with research questions tightly linked to these unique features of the new regionalism mentioned by Ethier. It would be not possible to investigate these issues by looking at previous waves of regionalism. In other words, some of the findings of this work would not hold in a pre-1990 analysis.

Moreover, there are at least three further arguments that justify the decision of focusing on the current wave of regionalism. These arguments are more politically based. First, the current wave of regionalism arose in a rather different economic and geopolitical context than the previous wave. The recent wave of regionalism is characterized by a high level of economic interdependence in relation to both trade flows and direct investment (Mansfield and Milner, 1999: 601). Second, the new wave of regionalism developed almost entirely after the end of the Cold War and the end of the bipolar system. As Kevin Clarke has forcefully shown, including control variables to deal with such a major shift may increase rather than reduce omitted vari-

[7]Direct dyads include the pairs both A and B and B and A, whereas indirect dyads include only the pair A and B.

able bias (Clarke, 2005). I thus follow his recommendation of substituting research design for control variables by limiting the dataset to the post-Cold War period. Third, the last wave of trade arrangements involves numerous issues that were largely extraneous to the PTAs of the previous waves and are central in this analysis, as discussed in the previous section.

Finally, there is admittedly also a practical reason to limit the empirical analysis on the last two decades. Indeed, focusing on the recent wave of regionalism facilitates the availability of the data on political and economic institutions that are central to this project. Without these data constraints, it would be possible to apply the arguments developed in Chapter 2, 3, and 4 to previous waves of regionalism. Below I describe in detail the dependent variables, the main covariates, and the other control variables that will be used in the following chapters.

1.2.1 The Formation of Trade Agreements

For analyzing the formation of PTAs, there are three operationalizations of the dependent variable. First, PTA Formation which equals 1 if two countries join the same PTA in given year t, 0 otherwise. As previous studies have shown (Baier and Bergstrand, 2004; Mansfield *et al.*, 2002; 2008), although this is admittedly a rough measurement, a dichotomous variable is a powerful instrument to capture the presence of a PTA. As will be explained in the following chapter, I analyze the first PTA as well as the following PTA(s) signed by the same dyads.[8] Hence, pairs of countries do not usually drop from the dataset after forming a trade bloc and, when they do, it will be mentioned in presenting the model. 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. Rare events have proved

[8]The same countries form more than one agreement either because they deepen an existing agreement, *e.g.* the EU, or because they are part of more than one trade bloc, *e.g.* Colombia and Venezuela were part of both the Andean Pact (Venezuela dropped in 2006) and the G-3 agreement.

to be difficult to explain and predict for several reasons, such as the risk of underestimating their probability. However, several methods developed in the literature enable the correction of these problems by improving the basic statistical procedures (King and Zeng, 2001).

Second, PTA Scope is a categorical variable which equals 1 if two countries join the same partial preferential agreement in year t, equals 2 if they form a free trade area, equals 3 if they join the same custom union, equals 4 if they join the same common market, and equals 5 if two countries form an economic monetary union; 0, otherwise. The gradation measurement of trade blocs is used in order to take into account two different steps of the process of formation of PTAs across years. In fact, trade blocs are not static entities in the international system. They evolve dynamically, adapting themselves to change in the political and economic context. Moreover, a polychotomous operationalization of the dependent variable allows me to capture the wide heterogeneity among PTAs. For instance, the EU and the Asean Pact are both PTAs, although they are two very different organizations in terms of supranational institutions, design of the agreement, and depth of integration among member countries.

Whereas the previous two operationalizations of the dependent variable concern both bilateral and plurilateral trade agreements, the third specification distinguishes between these two type of PTAs. Specifically, PTA Type, which equals 1 if two countries join the same bilateral agreement in year t, and equals 2 if they form a plurilateral arrangement in year t; 0, otherwise. The previous literature has often treated the formation of a bilateral trade agreement (henceforth BTA), *i.e.* an arrangement between only two countries, in the same way as the formation of a regional trade arrangement (henceforth RTA), *i.e.* an agreement among at least three states. However, BTAs and RTAs differ in two main features: the number of actors and the kind of economies involved in the trade agreement. First, it is commonly thought in the literature that bilateral cooperation is likely to be easier than multilat-

eral cooperation.[9] Thus, if domestic institutions affect both the bargaining and the enforcement phase of the formation of PTAs, the impact thereof is expected to be different in case of BTAs and RTAs, since the formation of the latter is more complex than the formation of the former. Second, more than 40 per cent of the BTAs signed in the period under analysis involved one developing and one developed countries, whereas less than 10 per cent of the RTAs were signed among developed and developed economies. The composition of a PTA is likely to shape the preferences of the members that join it and in doing so, to modify the effect of domestic institutions, especially as regards the enforcement phase of a bilateral and a regional arrangement.

I have dedicated substantial effort to establishing an authoritative list of trade agreements signed between 1990 and 2007. Largely (but not solely) relying on three different databases, namely the list of regional trade agreements notified to the World Trade Organization (henceforth, WTO), the Tuck Trade Agreements Database, and the McGill Faculty of Law Preferential Trade Agreements Database, but excluding partial-scope agreements and agreements that envisage no preferential treatment, I find that 257 preferential trade agreements were signed and 2366 dyads formed a preferential trade agreement between 1990 and 2007. As noted, I usually consider also second or third agreements signed by the same dyad.[10] For instance, in the early 1990s all Central and Eastern European countries signed bilateral free trade agreements with the EU that were later converted into accession treaties. Both PTAs are captured by my operationalization of the dependent variables.

1.2.2 The Quality of Institutions

Due to the emphasis of this study on institutions, one of the main challenges herein is to find a systematic and reliable way to operationalize this admit-

[9] For an opposite view on this topic, see Gilligan (2004).

[10] In Chapter 4 I consider only the first PTA signed by each dyad for the stated theoretical reasons.

tedly fuzzy concept (Keohane 1988). This study tackles this crucial issue by narrowing down the general notion of institutions in two ways. First, as explained above, I put emphasis on the quality of institutions. If domestic institutions are often described as constraints that set the rules of the game (North, 1990), I explore and capture the way in which the game is played. Second, this work focuses almost exclusively on formal institutions. The decision to focus on formal institutions is supported by three main arguments. Firstly, formal institutions are multi-dimensional and thus allow for a broad description of the rules of the game for each country. Second, formal institutions complement one another in the sense that "the effectiveness of one institution depends on the design of another" (Iversen, 2006: 615). Third, formal institutions change more rapidly than informal institutions, granting a wide variety in empirical analysis across time.

Table 1.2. Categorization of the institutions' indicators

Political Accountability	Transparency
Executive Accountability	Corruption
Political Stability	Rule of Law
	Regulatory Quality
	Government Effectiveness

In this study the quality of institutions are measured using six indicators: Executive Accountability, Political Stability, Corruption, Regulatory Quality, Rule of Law, and Government Effectiveness. These six indicators have been clustered into two groups: political accountability (the first two) and political and economic transparency (the last four), as shown by Table 1.2. Each indicator captures some features of institutions related to political accountability and political and economic transparency. Such operationalization represents an important contribution of this study, compared with previous works in the field that have failed to conceptualize and measure institutions in sufficient depth. Indeed, due to the complexity of modern states, an analysis of

the impact of institutions on economic integration needs to take into account a wide range of dimensions and indicators. Moreover, if the rules of the game are important, the effectiveness with which these rules work matters as well. The way in which the game is played is usually defined as *governance* (Williamson, 1995). Governance is closely related to the concept of *quality of institutions*, which is the term used in this study. The concept of quality of institutions has found several applications in economic literature in explaining economic performance (North, 1970), economic efficiency (Coase, 1937), resource allocation (Buchanan and Tullock, 1962), and, more recently, trade policy (Rodrik, 1995a).

All six indicators are borrowed from Kaufmann *et al.* (2006). These data have been used because they cover a large number of countries and are based on hundreds of specific and disaggregated individual variables measuring various dimensions of governance. More specifically, indicators have been built using 33 data sources provided by 30 different organizations. The data reflect the views on governance of public sector, private sector and NGO experts, as well as thousands of citizen and firm survey respondents worldwide. Since Kaufmann's indicators are available from 1996 to 2006, data on corruption and rule of law have been integrated by the Political Risks Services Group (ICRG, 2006) for the period 1990-1996. For all the other indicators, the most recent data available has been used for the previous period. There is an inevitable trade-off between number of countries covered and accuracy in the source, *i.e.* other datasets (Fraser Institute, 2006) cover the entire period under analysis, but include few countries; this study has privileged the first option. Indeed, as already posited, institutions usually change quite slowly, so this decision should not bias the results. Each indicator is discussed in detail below.

Regarding the first group, Political Accountability, the first variable, Executive Accountability, measures the extent to which a country's citizens are able to participate in selecting their government and holding it accountable for the actions taken. The executive is likely to be highly involved in the pro-

cess of regional integration. This variable is able to capture two important aspects of executive power. First, it measures the extent to which separate branches of the government have the independence and capability to limit the arbitrariness or excess power of the other branches. Second, it measures the extent to which each branch and individual agency or department is held accountable for its activities.

The second variable, Political Stability, combines several indicators that measure the perception of the likelihood that the government in power will be destabilized or overthrown by unconstitutional and/or violent means. This variable captures the idea that stability not only affects the continuity and the coherence of policies, but also at a deeper level undermines the ability of all citizens to select and replace those in power. Thus, Political Stability is central in this analysis, since it allows the measurement of the discount rate that political leaders apply to the future. As political stability decreases, political survival declines as well and political elites do not have to bother with future issues, such as those related to the enforcement of a PTA. In turn, political accountability would be quite low.

The second group of Table 1 concerns four indicators that describe institutions related to economic and political transparency. Specifically, I focus on two dimensions of transparency that are of primary interest herein since they are in line with the causal mechanisms previously suggested: predictability of domestic rules and procedures and efficiency of the political system.[11] Predictability concerns rules and procedures applied in a consistent and uniform manner so as to minimize uncertainty.[12] Efficiency concerns rules and procedures that minimize the possibility of delays in implementing policies (political failure) as well the possibility to engage in fraudulent and anti-competitive behavior (market failure).[13] Despite its political components this specification of transparency is closely related to market issues since the

[11] For a similar specification of transparency, see Helbe *et al.*, 2009.

[12] Control of corruption and rule of law capture this dimension.

[13] Government effectiveness and regulatory quality capture this dimension.

emphasis of this project is on economic cooperation. This is the reason why I refer to these variables as indices of political and economic transparency.

The measure of the level of corruption incorporates information on several institutional features of a country. First, corruption is a proxy of the effective contract enforcement, of the extent to which laws are observed and enforced fairly and competitively, and, more broadly, of the respect for the rule of law. As remarked in the previous section, these elements are central during the bargaining process for the formation of a PTA. Second, corruption is a general measure of the quality of the institutions of a country. Finally, corruption is a good proxy for the predictability of a country's legal environment and of irregular practices that can have major importance during the stipulation of a contract.

The indicator of Rule of Law includes perception of the incidence of both violent and non-violent crime and the effectiveness and predictability of the judiciary. In other words, this indicator measures the success of a society in developing an environment in which fair and predictable rules form the basis for economic and social interactions. Thus, this variable is a good proxy to capture the degree of transparency of a political system.

The variable Regulatory Quality is measured along several dimensions: stability, adaptability, coordination and coherence, quality of implementation and enforcement, public-regardedness, and efficiency. This variable takes account of the direct relationship between the quality of implemented policy and the transparency of the economic environment of a given society. Moreover, this variable captures the transparency of the policymaking process, which is central to any process of economic integration.

Government Effectiveness takes account of the direct relationship between the capability of government to credibly commit itself in implementing policies and the transparency of the economic environment of a given society. This indicator, combined with the previous indicator, contributes to captur-

ing the degree of political transparency. Indeed, regular and fair elections alone are not a sufficient condition to measure transparency. If public service is not independent from the government and if government is able to hide private information, voters are not able to properly evaluate its actions and eventually to penalize it for lapses in propriety. For instance, if government effectiveness is low, the executive can always blame someone else for its incompetence or, more specifically for the interests of this paper, for not being able to fulfill an agreement.

Finally, since correlation among the main explanatory variables is quite (and not surprisingly) high, as Table 1.3 shows, I include them separately in the models estimated in the following chapters to avoid the multicollinearity problem.

Table 1.3. Correlation index among main covariates.

Main Covariate	Exec. Account.	Polit. Stab.	Corruption	Rule of Law	Reg. Qualit.	Govern. Effect.
Exec. Account.	1					
Polit. Stab.	.61	1				
Corruption	.64	.64	1			
Rule of Law	.67	.66	.85	1		
Reg. Qualit.	.70	.59	.71	.76	1	
Govern. Effect.	.66	.63	.85	.86	.79	1

1.2.3 Control Variables

Since other factors are likely to influence the chances of two countries signing a PTA, I include a series of characteristics of the dyad under analysis and the context in which a dyad considers concluding an agreement. Doing so is vital to avoid overestimating the effect of the main explanatory variables, as parallel policy choices may be a result of correlated unit-level factors or exogenous shocks that are common to various dyads. In line with previous studies in the field, I hence include several economic, geographical, and political control variables in my model. Most of these variables are lagged by one year to avoid endogeneity problems. Moreover, in the case of indirect

dyads I use always the smaller of the two countries' values.

Concerning the variables capturing the economic condition in which the pair considers signing an agreement, I control for the amount of trade between the two countries, as an increase in trade may boost the probability of the two forming a preferential trade agreement (Trade). Large trade flows are likely to be accompanied with investments that are relation-specific, making traders dependent on access to each other's markets. They then may ask for a PTA to lock-in the existing situation and forestall protectionist trade policies by either side.[14] Trade may also matter as the positive welfare effects of a preferential trade agreement should be larger for countries with large trade flows already existing before conclusion of the agreement (Bhagwati, 1993). Furthermore, it can be hypothesized that signing an agreement between two economies of a relatively equal size should be easier than signing one between a large and a small economy. Among the reasons to expect such an effect is that a small country may fear becoming overly dependent on a large country and that for a large country the economic benefits of an agreement with a small country are likely to be minor. The welfare gains from an agreement may also increase as the parties to an agreement become more similar in economic size (Baier and Bergstrand, 2004). The measure that I use for this variable is the absolute difference in GDP between the two countries (Economic Similarity).

I also include a measure of the size of the economy of the two countries to capture the idea that the larger the countries participating in a preferential trade agreement, the larger the economic gains. As Scott Baier and Jeffrey Bergstrand (2004: 45) argue, a preferential agreement between two large economies increases the volume of trade in more ways than one between two small economies. In addition, a more sizeable increase in trade among two large countries causes a larger net expansion of demand and hence a larger rise in real income. I capture this idea by including GDP (GDP). A further factor that potentially influences the likelihood of an agreement between a

[14]This argument is derived from Yarbrough and Yarbrough, 1992.

pair of countries is their level of development. The more developed the two countries, the easier they should find it to conclude an agreement. Two reasons support this expectation. First, a country with a highly developed economy is less dependent on tariff revenues. Second, a developed country is in a better position to compensate societal groups that face adjustment costs arising from trade liberalization (Ruggie, 1982). The variable that captures this argument is the GDP per capita (GDP Per Capita). The final economic variable that I include is economic growth, as a downturn in the business cycle in at least one of the two countries may increase the probability of a preferential trade agreement being formed (GDP Growth).[15]

Two control variables capture domestic and international political conditions. At the international level, it is quite straightforward to assume that military allies should be more likely to sign an agreement than other pairs of countries (Alliance). At the domestic level, previous research has shown that democratic pairs of countries tend to sign more PTAs than non-democratic or mixed pairs (Mansfield *et al.*, 2002). I use the seven-point Freedom House scale of democracy to measure this variable (Freedom House, 2007). The advantage of the Freedom House index over others is that it covers all of the countries in my dataset and provides values for up to and including 2007.[16] I invert the values provided by Freedom House so that 1 is the value for a completely oppressive regime and 7 the value for a completely free regime (Democracy).

Moreover, I include three variables that capture the geographic position of the two countries. For one, neighboring countries can be expected to have a higher probability of signing an agreement. Not only are there, on average, closer economic links between adjacent countries, but also the political links tend to be stronger. Following this reasoning, I expect countries that share a common border to be more likely to sign an agreement (Contiguity). In addition, since trade costs increase with distance, geographically proximate

[15]For a similar reasoning see Mattli, 1999.

[16]The results do not change when using other data sources, such as the Polity IV score.

countries are more likely to form a preferential trade agreement (Krugman, 1991; Baier and Bergstrand, 2004). I thus include the (natural logarithm) distance in kilometers between the two capitals of the pair of countries in my model (Distance). Finally, I control for whether at least one of the two countries is an island, as the specific geographical circumstances of such countries may influence their likelihood of signing an agreement (Island).

I also include four control variables to account for the position of the countries in, and the general state of, the international trading system. Since members of the WTO tend to have more similar trade policies than countries that do not form part of this international organization, dyads in which both countries are WTO members should be more likely to conclude an agreement (WTO). Furthermore, I consider the possibility that during WTO-sponsored multilateral trade negotiations countries' propensity to conclude preferential trade agreements increases (WTO Round). I also control for the argument that involvement in trade disputes may influence a pair's propensity to conclude a trade agreement. Having a trade dispute with the other side should decrease the likelihood of an agreement (Trade Dispute), while having a dispute with a third party should increase it (Mansfield and Reinhardt, 2003). This last variable is labeled Trade Dispute Third Party.

Finally, I use three proxies to capture the cultural distance between the two countries, as culturally similar countries may find it easier to negotiate an international agreement. These proxies are common language, same religion, and common colonial heritage (Language, Religion, and Colony). Univariate summary statistics and data sources for all of these variables are available in Table 1.4.

1.3 Road Map of the Dissertation

This project is divided into two parts. The first section, comprised of Chapter 2, 3, and 4, analyzes the entire sample of countries, highlighting the role of institutions and organized groups in a *large-n* analysis. The second section

Table 1.4. Descriptive statistics of the main variables. Sources: (1) World Trade Organization, the Tuck Trade Agreements Database, and the McGill Faculty of Law Preferential Trade Agreements Database; (2) World Bank - Quality of Institutions Dataset (Kaufman, 2006); (3) Energy Information Administration - International Energy Annual (Shackman, 2005); (4) IMF dataset (2005); (5) COW dataset; (6) Freedom House Dataset (2006); (7) WTO website; (8) Horn and Mavroidis dataset (2006); (9) Economic Freedom Word index (2007); (10) CEPII dataset (2005).

Variables	Mean	Std. Dev.	Min	Max	Source
PTA	.01	.10	0	1	(1)
PTA Depth	.02	.24	0	5	(1)
PTA Type	.02	.17	0	2	(1)
Executive Accountability	1.85	.78	.26	4.19	(2)
Political Stability	1.83	.88	0	4.15	(2)
Corruption	1.93	.65	.37	5	(2)
Rule of Law	1.90	.68	.13	4.62	(2)
Reg. Qualit.	1.98	.80	0	4.45	(2)
Govern. Effect.	1.94	.67	.16	5	(2)
Trade	8.87	1.33	3.37	13.68	(4)
GDPpc	2.04	4.27	0	72.77	(3)
GDP	1.82	1.29	.10	8.57	(3)
GDP Growth	.43	.6.50	-52.6	35.2	(3)
Economic Similarity	3.69	2.08	0	9.49	(3)
Alliance	.17	.38	0	1	(5)
Democracy	4.91	1.92	1	7	(6)
Trade Disp.	.005	.07	0	1	(8)
Trade Disp. 3^{rd}	.30	.46	0	1	(8)
WTO	.54	.50	0	1	(7)
WTO Round	.66	.47	0	1	(7)
Distance	8.68	.78	2.44	9.89	(10)
Contiguity	.02	.14	0	1	(4)
Island	.13	.33	0	1	(4)
Colony	.16	.37	0	1	(4)
Language	.09	.29	0	1	(4)
Religion	.16	.37	0	1	(4)

narrows down the sample and focuses on EU bilateralism (Chapter 5), on US bilateralism (Chapter 6), and on the formation of trade blocs in developing countries (Chapter 7). The trajectory of this study is as follow.

Chapter 2 investigates to what extent political and economic transparency of a single country affects the probability of the formation of a trade bloc. The results shed light on which institutional devices help states to cooperate in the international system. The chapter shows that once transparency is controlled for, there is little evidence that electoral accountability, a key element of modern democracies, is directly responsible for regional integration.

Chapter 3 addresses a core topic of this project. This chapter develops and tests an explanation of the formation of regional trade arrangements that emphasizes the importance of institutional similarity among countries. The argument here is that institutional similarity among countries raises the quantity and the quality of information available to potential trade bloc member states. In turn, this eases the process of regional integration. However, following up on the results of the previous chapter, I show that institutional similarity matters only if it is combined with high quality institutions - for instance with high degree of rule of law.

Chapter 4 has been written with Andreas Dür, University of Salzburg. The core element of this chapter is that we bring interest groups into the analysis. We assume two trade policy constituencies: import competitors and exporters. Further, we assume that to stay in power governments are receptive to changes in the relative balance of these two constituencies. The trigger element consists of exporters that are excluded from a preferential trade agreement. When facing trade diversion, these exporters are likely to mobilize and push their government into signing an agreement with the country in which their exports are threatened. By showing that the objective of protecting exporters is indeed a major driving force of the new regionalism, the chapter completes the previous analyses that focus mainly on institutions.

In Chapter 5 I argue that, in forming a trade agreement, the EU is more likely to target countries that have high political and economic transparency relative to other developing countries. In highly transparent countries the EU is able to monitor effectively whether or not these countries follow its forms of conditionality, which is the main rationale of EU regionalism. Moreover, economic and political transparency plays a particularly important role in determining the degree of flexibility of trade agreements.

Chapter 6 explores the main drivers of US bilateralism. To address these questions, I model a two-stage bargaining process. In the first stage, the developing country has to decide whether or not to propose a PTA; if it does, the US may enter the negotiations or refuse to do so. In the second stage, which is the actual negotiation phase, the US dictates strict conditions to developing countries and, if and only if they fulfill these conditions, an agreement occurs. From this simple theoretical setting, I argue that the desire of developing countries to implement economic reforms is the main driver of US bilateralism. However, reforms act as a credible signal for the US only if implemented at the right time, *i.e.* the second stage of the bargaining process. Thus, the chapter shed lights on the effectiveness of signalling theory in describing international cooperation.

Chapter 7 investigates the impact on economic integration of large-scale changes in political institutions, especially in the direction of democratization. I argue that the process of developing countries' 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 a democratic regime forces political leaders to implement trade liberalization in order to please the median voter, the decision to form a regional trade agreement is usually the easiest and the most feasible to execute. However, I show that democratizing developing countries are more likely to form trade blocs with developed economies than with other developing countries. This result follows naturally from the

median voter preferences. The chapter concludes by showing that in the presence of a cluster of democratization in a given historical period neighboring countries are likely to share an interest in liberalizing trade, thereby easing the bargaining process.

Chapter 8 provides some conclusions, highlighting the main findings of the project and discussing some broad policy implications for international cooperation in general, and economic integration in particular. Finally, I suggest some further potential developments of this topic to gather much-needed understanding of the future direction of the new regionalism.

Chapter 2

Which Domestic Institutions Matter For Cooperation?

Introduction

Do democracies cooperate more than autocracies in the international trade system? Do domestic institutions matter in explaining the formation of preferential trade agreements? Previous research indicates that an analysis that focuses on domestic political institutions could complement economic explanations of the formation of trade blocs. The main finding of such studies is that the more democratic two regimes are, the more likely are to form a PTA (Mansfield, *et al.*, 2002). The causal mechanism concerns political accountability. Specifically, since voters are not always able to distinguish between adverse economic cycles over which political leaders have little control and economic stagnation caused by rent-seeking policies, in order to keep office democratic leaders have to find a means of demonstrating that poor economic performance is not due to their extractive policies. According to Mansfield *et al.* (2002), joining a PTA is an effective way to do so. Therefore, since the political survival of leaders in a democracy is dependent upon elections, the authors claim that the likelihood of forming a trade bloc increases as a country becomes more democratic.

The political literature has the merit of showing that regarding the for-

mation of PTAs, economic explanations often obscure as much as they illuminate and that politics matter in states' decision to establish a PTA. Previous studies, however, suffer from two main theoretical shortcomings: not all democracies are the same, nor are all trade blocs. First, due to the complexity of modern states, an analysis of the impact of institutions on economic integration needs to take into account a wide range of dimensions and indicators. Democracies not only have higher accountability than autocracies, but also they usually have more transparent institutions - in terms of low level of corruption, for instance (Montinola and Jackman, 2002). As previous studies have shown (Broz, 2002; Svolik, 2006), transparency is a crucial asset in international cooperation among states. This holds for PTAs as well. Specifically, transparency affects both the bargaining phase of a PTA, by lowering transaction costs, and the enforcement phase of a PTA, by lowering monitoring costs. In turn, this increases the probability that two states with high levels of transparency will enter into the same trade bloc, since they face low cooperation costs compared with states that have low levels of transparency. This being true, democracies are expected to sign PTAs for reasons that have little to do with electoral accountability or signaling problems. In other words, the failure of previous studies to conceptualize and to measure institutions in sufficient depth raises theoretical issues on the causality nexus between domestic institutions and economic cooperation.[1]

Second, the formation of PTAs has been traditionally studied focusing on the reciprocal reduction of trade barriers, such as tariffs, among a set of countries.[2] However, such reductions are often not the only or even the main motivation for PTAs (Limao, 2007). Many PTAs require cooperation on issues other than trade. For instance, the European Union requires countries to reach integration on a broad set of issues, such as monetary policy

[1] As stressed in the last section of this chapter, it can be argued that electoral accountability increases the quality of institutions in general, and so also the level of transparency, and so it eases cooperation among states. Thus, political accountability would still have an important indirect effect.

[2] For an important exception, see Mansfield *et al.*, 2008

and factors of production mobility. Given this heterogeneity of PTAs, it is important to have a model that allows the investigation of the impact of transparency, not only on trade regulation, but also on non-trade regulation. This is particularly important since the impact of domestic institutions is likely to be different at different stages of the integration process. In sum, this study goes beyond a simplistic dichotomous operationalization of trade blocs, distinguishing among different degrees of the depth of integration.

Using a battery of econometric tools to properly treat the time dependence problem and the multi spells problem that arises in trade blocs' formation, I quantitatively test the impact of the transparency against competitive hypotheses.[3] Empirical findings support the argument that transparency matters for the formation of trade blocs. Moreover, there is evidence that once transparency is controlled for, political accountability does not help to explain much in relation to PTA formation. Finally, there is no unequivocal evidence that transparency has a stronger impact on trade blocs' formation as the depth of integration increases.

This chapter is structured as follows. The following section develops the theoretical framework on which this study is built. The second section derives three testable hypotheses. The third part introduces the empirical 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 part controls for the robustness of the results. Finally, the last section draws some conclusions.

2.1 Theoretical Puzzle

From a legal point of view, a PTA, like every international agreement, is the documentation of a lawfully binding arrangement among at least two countries. Forming a PTA involves costs that are typical of signing a contract or

[3]With multi spells I refer to the repeated recurrence of a single event, *i.e.* the formation of PTAs.

reaching an agreement; these arise from two distinct phases: the bargaining phase and the enforcement phase. Regarding the former, because the establishment of a PTA is a complex procedure that is usually carried out over a considerable period of time, the bargaining costs are usually non-trivial. Regarding the latter phase, although the enforcement costs manifest themselves after the formation of a trade bloc, states are expected to bear them in mind when forming a PTA. More specifically, if states perceive that enforcement costs will be too high, they will decide not to begin bargaining or to not "bargain seriously" in the first place, to quote Fearon (1998: 279). Assuming this theoretical framework, the argument herein is that the transparency is expected to affect both bargaining and enforcement costs.

First, regarding the bargaining phase, transparency increases information among countries, reducing uncertainty and negative externalities that can lead to frictions and conflicts among states that aim to form an PTA. This, in turn, reduces transaction costs improving the ability of the states to make Pareto-improving bargains (Coase, 1960).[4] For instance, the bargaining difficulties that African and Latin American countries respectively are currently experiencing in forming the African Union and the Latin America Integration Association, two trade blocs that aim to mirror European integration, may be partially related to the low transparency of these states compared to members of the much more successful EU. Moreover, transparency impacts upon the duration of the bargaining process as well. Specifically, by raising the level of access to information and reducing uncertainty, transparency is likely to shorten the period of negotiation and, in turn, to dampen transaction costs, which are an increasing function of the bargaining duration (Menard, 2004; Williamson, 1998; Yarbrough and Yarbrough, 1987). For instance, the bargaining process of forming FTAs (both the EEC and EFTA) among European countries, which have high transparency, has been much shorter than the bargaining process of forming the ASEAN Pact.[5]

[4]For an extensive analysis on transaction costs and international institutions, see Gilligan (2009).

[5]The ASEAN Pact was signed in 1967, but effectively became an FTA only in the

Second, political and economic transparency also has an impact on the enforcement phase of an agreement. Specifically, political and economic transparency allows states to look at the domestic political system of other member countries, mitigating the problem of incomplete information in relation to compliance. This is an important asset in international cooperation (Svolik, 2006). Indeed, states with high levels of transparency can credibly sign trade agreements that accommodate political pressure to defect as a part of flexible agreement. Since the flexibility of agreements decreases costs of compliance (Koremenos, 2001; Rosendorff and Milner, 2001), the enforcement phase is less costly for those states that have political and economic transparency, raising the probability of their joining a PTA.

This argument is built upon the "efficient breach" theory associated with the Law and Economic School of thought. Specifically, formal provisions for breaking treaty commitments may boost cooperation when domestic circumstances make the cost of compliance too high. In these cases, states stop cooperating until they solve domestic problems without withdrawing from the agreement, since renegotiation the agreement would be too costly (Koremenos, 2005). For instance, Peru suspended its obligations under the Andean Pact from 1992 to 1996 due to a considerable external debt and ever-growing inflation (Ahearn and Wallace, 2001); after having partially solved its problems, Peru restarted cooperation with the other Andean countries in 1997. Since the extent of asymmetric information about the costs of compliance depends on the observability of domestic system of member countries, states with high transparency face less rigid agreements and so gain more from cooperation than states lacking political and economic transparency. In turn, since they get a larger payoff from economic integration, the former states are more likely to form PTAs than the latter countries.

In sum, I argue that political and economic transparency plays a major role in the process of economic integration among countries. On one side,

1990s.

transparency decreases transaction costs, raising the quality and the quantity of information among states in the bargaining phase. On the other side, transparency dampens monitoring costs, allowing states to design flexible agreements and, in doing so, easing the fulfillment phase of a PTA.

2.2 Hypotheses

As explained in the previous section, transparency is expected to reduce transaction costs, making the bargaining process less costly and faster for each state. Further, transparency allows member countries to form flexible agreements and in turn, to maximize their utility from cooperation. With these insights in hand, the first hypothesis can be put as follows:

H1: As transparency increases within dyads of countries, so does the probability that they will form a preferential trade agreement.

The second hypothesis involves the comparison between transparency and political accountability. As explained in the Introduction, previous studies have identified political accountability as decisive in explaining the extent to which the type of regime affects the probability of forming a trade bloc. However, this claim is quite problematic when a large number of measurements of institutions are taken into account. Indeed, several studies have shown that democratic regimes not only have higher political accountability, but also, for instance, lower corruption or higher degree of rule of law, compared to autocracies (Goel and Nelson, 2005; Islam and Montenegro, 2002; Rodrik, 2000). Thus, the relationship between democracy and increasing trade cooperation may be spurious and with no connection if political and economic transparency is disregarded theoretically and the variables that capture it are not properly controlled for empirically. Specifically, the argument hereof is that democracies are expected to be more likely to form a PTA than autocracies, mainly due to their high level of transparency and only marginally due to their high political accountability. Thus, the second hypothesis can be expressed as follow:

HP2: The impact of political and economic transparency on the formation of a PTA is expected to be stronger than the effect of political accountability on the formation of a PTA.

The third hypothesis concerns the impact of transparency on the depth of integration. Indeed, the degree of regional integration differs immensely from PTA to PTA. Some call only for limited tariff reduction among members, *e.g.* ASEAN; some rule on investment, service, labour mobility, and, in general, the so-called trade related issues, *e.g.* NAFTA, and some aim to harmonize non-tariff barriers, such as product standards, safety regulation and competition policies, *e.g.* the EU and CARICOM. As the depth of integration increases, the bargaining and enforcement costs are expected to rise for several reasons. First, the complexity of deep agreements makes the bargaining process more difficult, raising the transaction costs that states have to support. Second, the economic adjustment costs required by deep integration may increase the problem of compliance among member countries. Third, the sheer number of required policy changes that come with deep integration creates greater opportunity to defect and to engage in opportunistic protection (Yarbrough and Yarbrough, 1992) and exploitative intervention (Deardorff and Stern, 1987). Finally, given the wide range of issues covered, a deep PTA makes more difficult the detection and subsequent enforcement of violations compared to a shallow PTA. Accordingly, the bargaining and enforcement processes for the formation of a PTA are more costly and more complex as the depth of integration increases. In turn, everything being equal, in both phases transparency is expected to matter more for the formation of a deep PTA than for the formation of a shallow PTA. Thus, the following last hypothesis can be stated:

HP3: As the depth of regional integration increases, the impact of the transparency on the formation of a PTA is expected to rise as well.

2.3 Econometric Models

In order to test the previous hypotheses, the following model has been built:

$$y_{ij,t} = \beta_0 + \beta_1 X_{ij,t-1} + \beta_2 Z_{ij,t-1} + \beta_3 W y_{ij,t-1} + \epsilon_{i,jt}. \quad (2.1)$$

Where Y is the dependent variable, X is the matrix of the covariates that capture transparency, Z is the matrix of control variables, Wy_{t-1} is the term that controls for spatial dependence, and ϵ is the error term. Since the spatial term is present also in the analyses of the other chapters, it is worthwhile to describe it in detail. Spatial lags of a dependent variable fulfill a similar function as lagged dependent variables in models that account for serial correlation. Instead of lagging the dependent variable in time, values on the dependent variable are brought into the regression based on a distance function. Specifically, W is a N × N × T matrix where a matrix cell is computed:

$$Spatial\ correlation_{ij} = min\left(\sum_{jk}^{n} \left[\frac{1}{distance_{jk}} \right], \sum_{ik}^{n} \left[\frac{1}{distance_{ik}} \right] \right) \quad (2.2)$$

Concretely, this weight matrix simply expresses the hypothesis that the effect of other countries signing PTAs in the previous year is greater the closer are these countries. A positive coefficient would indicate that countries indeed are driven to seek preferential agreements if their neighbors are doing so.[6] In this setup, the geographic proximity of countries that sign PTAs motivates other states to do so, setting into action a so called *domino effect* (Baldwin, 1993).[7] Chapter 4 will develop a more complete framework

[6]The mean of this variable is .26 and the standard deviation is .51. Its minimum value is zero and its maximum value is 5.3.

[7]For a close application, see Elkins and Simmons (2004) and Manger (2005b).

to test the domino effect theory in more detail.

For testing hypothesis one and hypothesis two, a dichotomous variable, PTA, has been used, whereas to test hypothesis three, a polichotomous variable, PTA Type, has been utilized. These two specifications of the dependent variable and all the explanatory variables included in the empirical model have been described in Chapter 1.

To estimate model (1), I pool the data across time and country-pairs, and then survival analysis and ordered probit regression is conducted. The analysis involves two stages. First, I limit the analysis to the first PTA signed by a dyad. This allows us to get some baseline results. Second, I take into account also the subsequent PTAs signed by the same dyad, using appropriate econometric techniques to tackle the multi spells challenge.

Regarding the use of survival analysis, there are important reasons to give preference to this approach over the ordinary logistic regression. In general terms, since "time is of the essence" (Box-Steffensmeier and Jones, 1997) in the formation of PTAs, the event history model appears to fit perfectly in this kind of analysis. Indeed, the main interest of this paper is to know how the duration spent in one social state, *i.e.* absence of trade arrangements, affects the probability that some dyads will make a transition to another social state, *i.e.* forming an PTA.

In more specific terms, event history models, and specifically Cox proportional hazard, have three main advantages over the ordinary logit and probit. First, they incorporate the problem of left and right censoring that this project will have to take into account. Second, they allow a better analysis of repeated spells, *i.e.* transition several times from one (or two, or three, etc.) and then back to zero again, using as an explanatory variable the number of previous transitions from zero to one (or two, or three, etc.) that dyads have experienced (Beck, 2008: 288). Third, they allow a more appropriate treatment of time-varying predictors in the models compared to

the other regressions.

Since the process of formation of a PTA is dynamic, a dynamic model is needed. Among several history models, the Cox Proportional Hazard model (1972) has been chosen because of its elegance and computational feasibility and because it makes no assumption about the shape of the hazard over time. Since there are no *a priori* reasons to make any reasonable assumptions about the shape of the hazard in the case of the formation of PTAs, this latter feature of the Cox model is particularly welcome in this study. When I analyze recurrence of PTAs in the same dyad, I use a Cox model with the inverse Gaussian Frailty extension, since simulations have shown the advantage of this model (Box-Steffensmeier and DeBoef, 2007; Svolik, 2008).[8]

Finally, 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 and Tucker (1996) and Beck *et al.* (1998) argue that one solution to this problem is to base significance tests on Huber standard errors, since they take account of any heteroskedasticity and the grouped nature (by dyad) of the data. Consequently, robust standard errors are used in all of the following analyses.

2.4 Empirical Findings

2.4.1 Cox Proportional Hazard Model

As already shown, the indicators of transparency are strongly correlated to one another. Thus, to include all of them in the same econometric analysis would create a multicollinearity problem. To avoid this, I run four different specifications of the model as from Equation 1. Moreover, as already mentioned, I first study the formation only of the first agreement for each dyad,

[8] I always report *coefficients* and not hazard ratios.

i.e. dyads are dropped from the dataset once they have signed a PTA. Then I deal with the recurrence of events for a subset of dyads, *i.e.* dyads remain in the dataset across the 18 years. Results presented in the Table 2.1 and Table 2.2 below provide strong evidence that transparency is indeed an important driver in the formation of PTAs. Indeed, all four indicators of transparency have a positive sign and are statistically significant at a 99 per cent level in both the single-spell analysis and the multi-spells analysis. Thus, according to these results, the first hypothesis is confirmed.

To test the second hypotheses, I implement two different analyses. First, I run another specification of the model in which I include at the same time both an indicator of political accountability and each of the four transparency variables. The results shown in Table 2.3 and Table 2.4 suggest that, once controlled for other aspects of transparency, Executive Accountability is not statistically significant in case of single spell. In the multi-spells analysis, Executive Accountability is statistically significant at a 95 per cent level only with Corruption and Government Effectiveness. However, the impact of Executive Accountability on PTA formation is significantly smaller than the impact of the transparency indicators. Specifically, a 1-unit increase in Executive Accountability raises the probability of forming a PTA by 11 per cent, whereas a 1-unit increase in control of Corruption and Government Effectiveness raises the likelihood of signing a PTA by respectively 60 per cent and 48 per cent.[9] This finding adds plausibility to the argument that accountability is not the crucial feature that makes some types of regime more inclined to cooperate, but rather other institutional characteristics play a more important role.

To further investigate the second hypothesis, since Executive Accountability and Political Stability are strongly correlated to the indicators capturing transparency (see Table 1.3), I run two other specifications of the model including only the political accountability variables (again, I analyze both single spell and multi spells). By looking at the magnitude coefficient

[9]Results are quite similar when political stability is used.

Table 2.1. The impact of transparency on the formation of preferential trade agreements. Cox Proportional Hazard Model (single spell) clustered by dyads. Notes: robust standard errors are in parentheses. ** significant at 1 per cent, * significant at 5 per cent.

Covariates	Model 1	Model 2	Model 3	Model 4
Corruption	.63** (.07)			
Rule of Law		.64** (.08)		
Reg. Qualit.			.48** (.07)	
Govern. Effect.				.61** (.08)
Trade	.03 (.02)	.03 (.02)	.03 (.02)	.02 (.02)
GDPpc	-.12** (.01)	-.12** (.01)	-.10** (.01)	-.12** (.01)
GDP	.23** (.02)	.21** (.02)	.22** (.02)	.20** (.02)
GDP Growth	-.01** (.004)	-.01** (.004)	-.01** (.004)	-.01** (.004)
Economic Similarity	-.07** (.02)	-.07** (.02)	-.06** (.02)	-.07** (.02)
Alliance	.48** (.06)	.50** (.06)	.44** (.06)	.50** (.06)
Trade Disp.	-2.09* (1.01)	-2.13* (1.01)	-2.11* (1.01)	-2.10* (1.01)
Trade Disp. 3^{rd} Party	.13 (.07)	.13 (.07)	.10 (.07)	.13 (.07)
WTO	.17* (.08)	.16* (.08)	.12 (.08)	.18* (.08)
WTO Round	.74** (.09)	.76** (.09)	.78** (.09)	.75** (.09)
Distance	-1.10** (.07)	-1.10** (.07)	-1.12** (.07)	-1.10** (.07)
Contiguity	-.72** (.17)	-.69** (.17)	-.70** (.16)	-.74** (.17)
Island	-.43** (.11)	-.42** (.11)	-.40** (.11)	-.41** (.11)
Colony	.28* (.14)	.24 (.13)	.25 (.13)	.26 (.14)
Language	.13 (.13)	.13 (.13)	.11 (.13)	.13 (.13)
Religion	.25** (.07)	.26** (.07)	.23** (.07)	.25** (.07)
Spatial Depend.	.21** (.07)	.22** (.07)	.22** (.07)	.23** (.07)
No. of Obs.	225,642	225,642	225,642	225,642
Number of Failures	1884	1884	1884	1884
Prob $\geq \chi^2$	1948.42 (.00)	1842.27 (.00)	1837.26 (.00)	1809.75 (.00)

(Table 2.5 and Table 2.6), it is evident that control of Corruption, Rule of Law, Regulatory Quality, and Government Effectiveness have a larger impact on the probability of forming a PTA than do indicators capturing Political Accountability. Specifically, a 1-unit increase in Executive Accountability and Political Stability raises the probability of forming a PTA respectively

Table 2.2. The impact of transparency on the formation of preferential trade agreements. Inverse Gamma Frailty Cox Proportional Hazard Model (multi spells spell) clustered by dyads. Notes: robust standard errors are in parentheses. ** significant at 1 per cent, * significant at 5 per cent.

Covariates	Model 1	Model 2	Model 3	Model 4
Corruption	.54** (.04)			
Rule of Law		.54** (.08)		
Reg. Qualit.			.40** (.03)	
Govern. Effect.				.48** (.04)
Trade	.01 (.02)	.01 (.02)	.00 (.02)	.00 (.02)
GDPpc	-.10** (.01)	-.10** (.01)	-.08** (.01)	-.09** (.01)
GDP	.20** (.02)	.19** (.02)	.20** (.02)	.18** (.02)
GDP Growth	-.02** (.004)	-.02** (.004)	-.01** (.003)	-.02** (.003)
Economic Similarity	-.04* (.02)	-.05** (.02)	-.04* (.02)	-.05** (.01)
Alliance	.36** (.04)	.38** (.05)	.33** (.05)	.38** (.05)
Trade Disp.	-1.16 (.58)	-1.18* (.58)	-1.21* (.58)	-1.18* (.58)
Trade Disp. 3^{rd} Party	.06 (.06)	.06 (.07)	.04 (.06)	.06 (.06)
WTO	.17* (.05)	.17* (.05)	.12* (.05)	.18* (.05)
WTO Round	.74** (.09)	.74** (.09)	.76** (.10)	.73** (.09)
Distance	-1.04** (.02)	-1.04** (.02)	-1.05** (.02)	-1.03** (.02)
Contiguity	-.61** (.08)	-.59** (.09)	-.60** (.08)	-.62** (.08)
Island	-.32** (.08)	-.30** (.08)	-.29** (.08)	-.30** (.08)
Colony	.17* (.06)	.14* (.06)	.14* (.06)	.16* (.06)
Language	.20* (.06)	.19* (.06)	.19* (.06)	.20* (.06)
Religion	.15* (.05)	.14* (.05)	.12* (.05)	.13* (.05)
Spatial Depend.	.05 (.03)	-.06 (.03)	-.05 (.06)	-.04 (.03)
No. of Obs.	242,059	242,059	242,059	242,059
Number of Failures	2366	2366	2366	2366

by 34 per cent and 26 per cent, whereas a 1-unit increase in control of Corruption, Rule of Law, Regulatory Quality, and Government Effectiveness raises the likelihood of signing a PTA by respectively 87 per cent, 90 per cent, 61 per cent, and 84 per cent.[10]

[10]These effects are from the single-spell analysis. Results for the multi-spells analysis are, however, very similar.

Table 2.3. The impact of transparency and executive accountability on the formation of preferential trade agreements. Cox Proportional Hazard Model (uni spell) clustered by dyads. Notes: robust standard errors are in parentheses. ** significant at 1 per cent, * significant at 5 per cent.

Covariates	Model 5	Model 6	Model 7	Model 8
Corruption	.58** (.07)			
Rule of Law		.63** (.08)		
Reg. Qualit.			.47** (.07)	
Govern. Effect.				.56** (.07)
Exec. Account.	.07 (.05)	.02 (.05)	.01 (.05)	.07 (.05)
Trade	.03 (.02)	.03 (.02)	.02 (.02)	.02 (.02)
GDPpc	-.12** (.01)	-.12** (.01)	-.10** (.01)	-.12** (.01)
GDP	.21** (.02)	.21** (.02)	.22** (.02)	.20** (.02)
GDP Growth	-.01** (.003)	-.01** (.004)	-.01** (.004)	-.01** (.003)
Economic Similarity	-.07** (.02)	-.07** (.02)	-.06** (.02)	-.07** (.02)
Alliance	.44** (.06)	.50** (.06)	.44** (.06)	.49** (.06)
Trade Disp.	-2.11* (1.01)	-2.14* (1.01)	-2.11* (1.01)	-2.12* (1.01)
Trade Disp. 3^{rd} Party	.11 (.07)	.13* (.07)	.10 (.07)	.11 (.07)
WTO	.15 (.08)	.16* (.08)	.11 (.08)	.16* (.08)
WTO Round	.74** (.09)	.75** (.09)	.78** (.10)	.75** (.09)
Distance	-1.10** (.07)	-1.10** (.07)	-1.12** (.07)	-1.10** (.07)
Contiguity	-.71** (.17)	-.69** (.17)	-.70** (.16)	-.73** (.17)
Island	-.45** (.11)	-.42** (.12)	-.41** (.11)	-.43** (.1)
Colony	.28* (.14)	.24* (.13)	.26 (.13)	.26 (.14)
Language	.14 (.14)	.13 (.13)	.11 (.14)	.13 (.14)
Religion	.25** (.07)	.26** (.07)	.23** (.07)	.24** (.07)
Spatial Depend.	.20** (.06)	.22** (.06)	.22** (.07)	.23** (.07)
No. of Obs.	225,642	225,642	225,642	225,642
Number of Failures	1884	1884	1884	1884
Prob $\geq \chi^2$	1950.78 (.00)	1844.89 (.00)	1841.32 (.00)	182.91 (.00)

Another way to show the impact of the main explanatory variables on the probability of forming a trade bloc is by using the survival curve. Such a curve shows for all the unit of observations the probability of surviving,

Table 2.4. The impact of transparency and executive accountability on the formation of preferential trade agreements. Inverse Gamma Frailty Cox Proportional Hazard Model (multi spells) clustered by dyads. Notes: robust standard errors are in parentheses. ** significant at 1 per cent, * significant at 5 per cent.

Covariates	Model 5	Model 6	Model 7	Model 8
Corruption	.47** (.05)			
Rule of Law		.50** (.05)		
Reg. Qualit.			.36** (.04)	
Govern. Effect.				.39** (.05)
Exec. Account.	.10* (.03)	.07 (.04)	.06 (.04)	.11* (.04)
Trade	.01 (.01)	.01 (.02)	.00 (.02)	.00 (.02)
GDPpc	-.10** (.01)	-.10** (.01)	-.08** (.01)	-.09** (.01)
GDP	.21** (.02)	.19** (.02)	.20** (.02)	.19** (.02)
GDP Growth	-.01** (.003)	-.02** (.003)	-.02** (.003)	-.02** (.003)
Economic Similarity	-.04* (.02)	-.05** (.01)	-.04* (.01)	-.04* (.01)
Alliance	.34** (.05)	.36** (.05)	.32** (.05)	.35** (.05)
Trade Disp.	-.19 (.58)	-1.19 (.58)	-1.22 (.58)	-1.21* (.58)
Trade Disp. 3^{rd} Party	.04 (.05)	.03 (.06)	.10 (.07)	.04 (.06)
WTO	.14* (.05)	.15* (.05)	.11 (.05)	.15* (.05)
WTO Round	.73** (.09)	.73** (.09)	.76** (.10)	.73** (.09)
Distance	-1.04** (.02)	-1.03** (.02)	-1.12** (.07)	-1.03** (.02)
Contiguity	-.59** (.08)	-.58** (.08)	-.60** (.08)	-.60** (.08)
Island	-.34** (.08)	-.32** (.08)	-.31** (.08)	-.33** (.08)
Colony	.17* (.06)	.14 (.06)	.14 (.06)	.16* (.06)
Language	.21* (.06)	.20* (.06)	.20* (.07)	.22* (.06)
Religion	.13* (.04)	.13* (.05)	.11 (.04)	.12 (.05)
Spatial Depend.	-.05 (.03)	-.06 (.03)	-.05 (.03)	-.05 (.03)
No. of Obs.	242,059	242,059	242,059	242,059
Number of Failures	2366	2366	2366	2366

i.e. not signing a PTA, across the 18 years under investigation. Since institutional similarity affect positively the likelihood that pairs of countries form trade blocs, *i.e.* the likelihood of "dying", the survival curve should decrease when the levels of similarity is high, holding all the other control variables at their average value. Figure 2.1 is in line with the expectation.

Table 2.5. The impact of political accountability on the formation of preferential trade agreements. Cox Proportional Hazard Model (single spell) clustered by dyads. Notes: robust standard errors are in parentheses. ** significant at 1 per cent, * significant at 5 per cent.

Covariates	Model 9	Model 10
Exec. Account.	.30** (.05)	
Polit. Stab.		.23** (.05)
Trade	.03 (.02)	.02 (.02)
GDPpc	-.09** (.01)	-.08** (.01)
GDP	.24** (.02)	.26** (.02)
GDP Growth	-.01 (.004)	-.01* (.004)
Economic Similarity	-.06** (.02)	.05** (.02)
Alliance	.45** (.06)	.47** (.06)
Trade Disp.	-2.19* (1.01)	-2.16* (1.01)
Trade Disp. 3^{rd} Party	.08 (.06)	.10 (.07)
WTO	.20** (.07)	.28** (.07)
WTO Round	.76** (.09)	.80** (.09)
Distance	-1.08** (.07)	-1.09** (.07)
Contiguity	-.72** (.07)	-.74** (.16)
Island	-.45** (.11)	-.41** (.11)
Colony	.34* (.14)	.33* (.14)
Language	.07 (.14)	.12 (.14)
Religion	.252** (.07)	.24** (.07)
Spatial Depend.	.24** (.07)	.26** (.06)
No. of Obs.	225,642	225,642
Number of Failures	1884	1884
Prob $\geq \chi^2$	1900.10 (.00)	1924.14 (.00)

Specifically, the graph on the right shows the effect of a change in the control of Corruption variable (the highest among transparency indicators) from the minimum to the maximum level. This graph illustrates that an increase in the value of this variable makes a pair of countries substantially more likely to conclude a PTA. Similarly, the graph on the left plots the substantive effect of the Executive Accountability variable (the highest among political accountability indicators). This effect is smaller than for the control of Cor-

Table 2.6. The impact of political accountability on the formation of preferential trade agreements. Inverse Gamma Frailty Cox Proportional Hazard Model (multi spells) clustered by dyads. Notes: robust standard errors are in parentheses. ** significant at 1 per cent, * significant at 5 per cent.

Covariates	Model 9	Model 10
Exec. Account.	.28** (.03)	
Polit. Stab.		.21** (.03)
Trade	.01 (.02)	.004 (.02)
GDPpc	-.07** (.01)	-.07** (.01)
GDP	.22** (.02)	.23** (.02)
GDP Growth	-.01* (.003)	-.01* (.003)
Economic Similarity	-.04* (.01)	.03* (.01)
Alliance	.33** (.05)	.35** (.05)
Trade Disp.	-1.29* (.58)	-1.28* (.58)
Trade Disp. 3^{rd} Party	.02 (.06)	.05 (.06)
WTO	.18** (.05)	.26** (.05)
WTO Round	.74** (.09)	.80** (.09)
Distance	-1.02** (.02)	-1.03** (.02)
Contiguity	-.62** (.02)	-.63** (.08)
Island	-.34** (.08)	-.30** (.08)
Colony	.20** (.06)	.20** (.06)
Language	.18* (.07)	.19* (.07)
Religion	.10* (.05)	.13* (.05)
Spatial Depend.	-.03 (.03)	-.02 (.03)
No. of Obs.	242,059	242,059
Number of Failures	2366	2366

ruption variable; over the 18 year period, it drops from 1 to 0.8, as compared to 0.6 for the trade and competition variable. Thus, there is evidence that the second hypotheses holds.

Finally, all the control variables have a coefficient sign in line with previous studies, adding plausibility to my results. The only statistically significant variables that have the opposite sign than that expected are GDP per capita and contiguity. According to GDP per capita, there is no evidence

herein that the more developed an economy is, the higher the probability that it will form a trade bloc. A possible explanation may be that developing countries (henceforth, LDCs), which form the majority of this dataset, prefer to implement regionalization rather than unilateral or multilateral trade liberalization. In other words, policymakers choose regional integration as an alternative policy to trade liberalization.[11] Regarding Contiguity, the result shows that the new regionalism is not really *regional*. Indeed, 75 per cent of PTAs signed in the current wave of regionalism are bilateral trade agreements and the majority of these PTAs are between a developed economy and a developing country that are not located usually in the same region.[12]

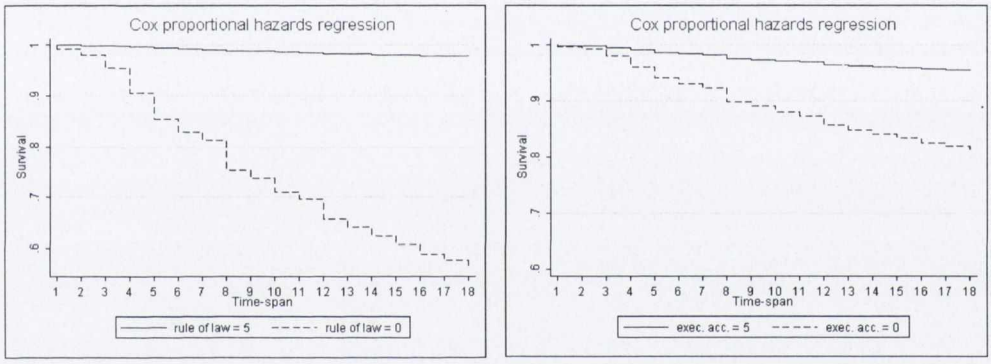

Figure 2.1. Survival curves: comparing Rule of law and Executive Accountability.

2.4.2 Ordered Probit Model

Regarding the ordered probit regression, all the coefficients related to transparency are positive and statistically significant (Table 2.7). This result confirms that countries with have high levels of transparency are more likely to implement regional integration. In the ordered logit model the value of

[11] This argument is addressed in detail in Chapter 7.

[12] For an extensive discussion on the special features of the new regionalism, see Ethier (2005).

the coefficients is not meaningful for describing the impact of the explanatory variables on the dependent variable. Table 2.8 shows the effects of the transparency variables as well as the political accountability variables on the likelihood of PTA formation using Clarify software (King *et al.*, 2000). At this point a caveat is necessary. In making inferences regarding the predicted probabilities, the rare events problem has to be taken into account. Indeed, common conditional logit underestimates the impact of the explanatory variables on the probability of the rare event. In addition, there is the risk that the standard errors are heavily biased with a large number of zeros. Since no rare event ordered logit estimation is available, the analysis will focus on the relative differences among the five types of PTAs rather than on the magnitude of the first differences of the coefficients. In doing so, the third hypothesis can thus be effectively tested.

There is conflicting evidence on the supposition that as the depth of regional integration increases, the impact of transparency on the formation of PTAs rises as well. The effect of transparency is always stronger on the probability of forming a free trade areas compared to the probability of forming a partial agreement. Moreover, the impact of transparency on the likelihood of forming an economic monetary union is always stronger than on the likelihood of forming a custom union and a common market. However, the impact of transparency on the likelihood of forming a common market is lower than the impact of the transparency on the probability of forming a custom union. Moreover, and more importantly, the effect of transparency is stronger in case of FTA formation than in the case of formation of all the other type of PTAs. These results are likely to be driven by the fact that the majority of the current PTAs are indeed FTA. More specifically, in my dataset only 54 dyads signed a custom union and only 30 dyads signed a common market.[13] In addition only 255 dyads signed an economic monetary

[13]The Andean Community; Economic and Monetary Community of Central Africa (CEMAC); Eurasian Economic Community; Gulf Cooperation Council, and Mercosur are the only CUs in my dataset, whereas the Caribbean Community (CARICOM) is the only CM.

Table 2.7. The impact of transparency on the depth of preferential trade agreements. Ordered Probit clustered by dyads. Notes: robust standard errors are in parentheses. ** significant at 1 per cent, * significant at 5 per cent.

Covariates	Model 1	Model 2	Model 3	Model 4
Corruption	.21** (.02)			
Rule of Law		.21** (.02)		
Reg. Qualit.			.16** (.01)	
Govern. Effect.				.20** (.02)
Trade	.01 (.01)	.01 (.01)	.03 (.02)	.01 (.01)
GDPpc	-.04** (.003)	-.04** (.003)	-.03** (.002)	-.04** (.002)
GDP	.08** (.01)	.08** (.01)	.08** (.01)	.07** (.01)
GDP Growth	-.002* (.001)	-.002* (.001)	-.001 (.001)	-.002* (.001)
Economic Similarity	-.02** (.01)	-.02** (.01)	-.02** (.01)	-.02** (.01)
Alliance	.16** (.02)	.17** (.02)	.15** (.02)	.16** (.02)
Trade Disp.	-.50* (.20)	-.50* (.20)	-.52* (.20)	-.51* (.20)
Trade Disp. 3^{rd} Party	.04 (.02)	.04* (.02)	.04 (.02)	.05* (.02)
WTO	.08** (.02)	.08** (.02)	.05** (.02)	.08** (.02)
WTO Round	.27** (.02)	.27** (.02)	.27** (.02)	.26** (.02)
Distance	-.49** (.01)	-.49** (.01)	-.49** (.01)	-.49** (.01)
Contiguity	-.22** (.04)	-.21** (.04)	-.22** (.04)	-.22** (.04)
Island	-.07* (.03)	-.07* (.03)	-.06 (.03)	-.07* (.03)
Colony	.03 (.03)	.03 (.03)	.02 (.03)	.03 (.03)
Language	.13** (.03)	.13** (.03)	.13** (.03)	.13** (.03)
Religion	.07** (.02)	.07** (.02)	.06** (.02)	.07** (.02)
Spatial Depend.	.02 (.02)	.02 (.02)	.02 (.02)	.02 (.02)
Cut 1	-.89** (.12)	-.89** (.12)	-1.03** (.12)	.94** (.12)
Cut 2	-.80** (.12)	-.80** (.12)	.94** (.12)	.85** (.12)
Cut 3	-.13 (.13)	-.13 (.13)	.26** (.12)	.18 (.12)
Cut 4	-.07 (.13)	-.07 (.13)	.20 (.12)	.11 (.13)
Cut 5	-.03 (.13)	-.03 (.13)	.16 (.12)	.07 (.13)
No. of Obs.	242,059	242,059	242,059	242,059
Pseudo R^2	.15	.15	.15	.15
Prob $\geq \chi^2$	3298.18 (.00)	3243.67 (.00)	3263.67 (.00)	3198.76 (.00)

Table 2.8. First differences of Corruption, Rule of Law, Regulatory Quality, and Government Effectiveness. All values are evaluated moving from the minimal to the maximum value of each transparency indicator and holding the other control variables at their average value. 95 per cent confidence intervals are in parentheses.

Depth of Integration	Corruption min → max	Rule of Law min → max	Reg. Qualit. min → max	Govern. Effect. min → max
PA	.44 [.3, .6]	.45 [.3, .6]	.30 [.2, .4]	.40 [.3, .5]
FTA	1.58 [1.1, 2.0]	1.59 [1.1, 2.0]	1.02 [.8, 1.3]	1.38 [1.0, 1.8]
CU	.05 [.03, .08]	.05 [.03, .08]	.03 [.02, .04]	.05 [.03, .07]
CM	.03 [.02, .05]	.03 [.02, .05]	.02 [.01, .03]	.03 [.02, .04]
EMU	.22 [.1, .3]	.23 [.1, .3]	.13 [.09, .18]	.19 [.1, .3]

union against 1416 dyads that formed a free trade area.

2.5 Robustness Check

In this section, the impact of both transparency and political accountability on PTA formation is re-examined using a more refined econometric tool. Specifically, following a similar specification in the literature (Gleditsch and Ward, 2006), the dyads of countries that sign more than one PTA may be analysed through a two-way transition process between different states over time, using a Markov chain model. For simplicity, herein only two possible states are analysed, one or more than one PTA for each dyad.[14]

In a transition model, the probability of the variable y_{it} for observation i at time t is modeled as a function of i's prior history or state at previous time periods *t-1*, *t-2*,... , *t-T* (where T is the origin). If the observations are conditional only on the previous observations, the model is named a first-

[14]Since the number of dyads that sign more than one agreement is already very few, an analysis with more than two states would be a highly zero-inflated model, almost impossible to regress even by ad-hoc packages and with no meaningful results to describe.

order Markov chain. The interest herein lies in the conditional probability distribution given a set of covariates. Two-way transitions for repeatable events or spells of binary outcomes can be modeled using a limited dependent variable model (Beck *et al.*, 2002). A matrix of conditional probabilities given a set of covariates interest X can be derived by estimating:

$$Pr(y_{ij,t} = 1 \mid y_{ij,t-1}, X_{ij,t}) = F[\beta X'_{ij,t} + y_{ij,t-1}, \alpha X'_{ij,t}] \tag{2.3}$$

where F is a logit link and the β vector indicates the effect of covariates in X on the probability of a 1 at time t given 0 at time *t-1*, *i.e.* $Pr(y_{ij,t} = 1 \mid y_{ij,t-1} = 0)$. The effect on the probability of a 1 at time t given a 1 at time *t-1*, $Pr(y_{ij,t} = 1 \mid y_{ij,t-1} = 1)$, is given by the vector of parameters $\gamma = \alpha + \beta$. This model has been applied in democratic transition studies (Gleditsch and Ward, 2006; Przeworski and Limongi, 1997), in peace and conflict studies (Beck *et al.*, 2002), and, more recently, in bargaining models (Kucik and Reinhardt, 2008). In this case, the estimated β coefficients indicate the effect of the covariates on the probability that a dyad forms a PTA, whereas the estimated γ coefficients indicate the effect of the covariates on the probability that the same dyad enters into a second, third, agreement, etc.

The results of the Markov chain model are shown in the Table 2.9 for the Rule of Law variable and confirm the validity of the previous findings in relation to the variables that capture the transparency.[15] Specifically, both the β and the γ coefficients of Rule of Law are positive and statistically significant at 99 per cent level for the first PTA. Using the software Clarify (King *et al.*, 2000), I estimate the first difference of Rule of Law holding all the other variables at their average value. Interestingly, the magnitude of the coefficients of Rule of Law is always higher for the second, third, etc. agreements than. In particular, moving from the minimum to maximum value of the Rule of Law variable, the probability of forming the first PTA increases by 2.1 [1.3, 3.2] percent, whereas the likelihood to sign the second, third, etc. PTA rises

[15]Results are similar for the other three indicators.

by 11.5 [7.0, 16.7] per cent.[16]

While these results add new insights to the analysis, they are not surprising and they are in line with my theoretical framework. Second, third, etc agreements usually deepen an existing one, *e.g.* single European Act in the case of the EU. Negotiating a deeper agreements is more costly than negotiating the first one, since it involves, amongst other, the harmonization of business conditions, creation of supranational decision-making bodies, and regulations on trade-related issues such as labor movement and monetary policy. Hence the need of dampening transaction costs and monitoring costs is crucial in this case. This the reason why transparency plays even a more important role in the formation of the second, third, etc. PTA compare to the formation of the first PTA. A last consideration concerns the fact that the second probit has far less prediction capability compare to the first one. This suggests that there are some degrees of randomness in forming more than one PTA in the same dyad.

To check the robustness of the results, several other analyses have been implemented. Since the dataset is organized as a Time-Series-Cross-Section data, the problem of heterogeneity arises. Many papers allow for unit-specific intercepts, the so-called fixed-effects model. However, in this case the use of a fixed-effect model is problematic due to its inefficiency in estimating the effect of variables that have very little within variance (Plümper and Troeger, 2007). Thus, a random-effect logistic has been run to check the robustness of the results. The author is aware of the fact that a random effect model only helps to solve the degree of freedom problem, *i.e.* observations are not independent and so autocorrelation has to be taken into account, but does not solve any problem of omitted variables bias. However, as Beck and Katz (2007) have recently shown, random-effect models perform quite well in the case of a pooled model. Furthermore, because several coefficients of regressions turned out not to be statistically significant, the estimation is run again excluding these variables. Moreover, I implement the previous analysis

[16]Confidence intervals are in brackets.

Table 2.9. The impact of Rule of Law on the formation of preferential trade agreements. First-Order Markov Chain clustered by dyads. Notes: robust standard errors are in parentheses. ** significant at 1 per cent, * significant at 5 per cent.

Covariates	α	γ
Rule of Law	.58** (.06)	.54** (.08)
Trade	.05* (.02)	-.07* (.03)
GDPpc	-.12** (.01)	-.08** (.01)
GDP	.21** (.02)	.04 (.04)
GDP Growth	-.00 (.003)	-.02** (.009)
Economic Similarity	-.09** (.02)	.04 (.02)
Alliance	.59** (.06)	-.15 (.10)
Trade Disp.	-1.21 (.70)	-1.18 (1.02)
Trade Disp. 3^{rd} Party	.17 (.07)	.05 (.13)
WTO	.16* (.06)	-.06 (.11)
WTO Round	.51** (.06)	1.15** (.12)
Distance	-1.26** (.06)	-.42** (.05)
Contiguity	-.50** (.15)	-.13 (.11)
Island	-.45** (.12)	.19 (.16)
Colony	.10 (.11)	.06 (.10)
Language	.31* (.13)	.02 (.11)
Religion	.34** (.07)	-.28** (.10)
Diffusion	.01** (.001)	-.01** (.002)
No. of Obs.	226,140	15,919
Pseudo R^2	.18	.05
Prob $\geq \chi^2$	1957.10 (.00)	282.57 (.00)

using also direct dyads as well as using Gamma Frailty Cox Proportional Hazard model. Furthermore, since the dataset is heavily zero inflated, I estimate the Markov model by using rare event logit (King and Zeng, 2001). The use of the rare event logit is recommended by the fact that common conditional probit (or logit) underestimates the impact of the explanatory variables on the probability of the rare event. In addition, there is the risk that the standard errors are heavily biased with a large number of zeros. Finally, following the suggestion of Thomas Plümper and Eric Neumayer

(forthcoming) I include year controls in the model for exogenous shocks. In all these cases, the results are roughly comparable with the ones showed previously.

2.6 Conclusion

The main findings of this chapter can be summarized in three points. First, this chapter emphasizes the role of domestic institutions in PTA formation. Specifically, econometric results support the argument that transparency is a crucial driver in explaining the formation of trade blocs. Indeed, all indicators that capture transparency have a positive sign and are statistically significant.

Second, the impact of the transparency on the formation of PTAs has proved to be substantially more important than electoral accountability. This result is significant since it challenges previous studies (Mansfield *et al.*, 2002) that claim that the presence of electoral accountability explains why democracies cooperate more than autocracies internationally. In particular, I show that political and economic transparency more than accountability explains the process of economic integration. However, a further element must be added in discussing the results of this chapter. Indeed, in a widely cited article, Dani Rodrik (2000) claims that participatory political institutions helps to increase the quality of institutions. Although the author does not focus on political and economic transparency, there is evidence that electoral accountability increases the quality of institutions in general, and so also the level of transparency, and so it facilitates cooperation among states.[17] This being true, political accountability would still have an important indirect effect.

Third, the strongest impact of indicators capturing transparency is on the formation of FTAs, confirming only partially the claim that transparency should play a more important role as the depth of integration increases. The

[17]The cross-country analysis carried out by Montinola and Jackman (2002) partially confirms the argument that political competition decreases corruption.

low number of observations in case the of CUs and CMs, and to a lesser extent, of EMUs, forces us to take this last finding *cum grano salis.*

Chapter 3

Institutional Similarity and Economic Integration

Introduction

While there is evidence that politics matter for the formation of trade blocs, the impact on economic integration of institutional similarities among countries is given short shrift in the previous literature.[1] This chapter fills the gap in the field by developing such an explanation and offers a unique perspective in describing regional integration. It posits that, at least under certain conditions, institutional similarity among countries constitutes an important factor in the formation of PTAs by raising the quantity and the quality of information available to potential PTA member states. Specifically, institutional similarity decreases transaction costs, increasing trust between states in the bargaining phase, and dampens adjustment costs, helping states to make credible commitments in the fulfilment phase. Moreover, due the fact that both the bargaining phase and the fulfilment phase become more complex as the depth of integration increases, institutional similarity is expected to have a stronger impact on the formation of common markets or monetary

[1]Feng and Genna's study (2003) is the only such work to address this topic using a comparative analysis of a limited number of trade blocs in the Americas, Pacific Asia, and Western Europe. However, that study has a different research question, different theoretical framework, and different operationalizations of the main variables.

unions than on the formation of partial trade agreements or free trade areas.

The term institutional similarity is used herein to denote whether indicators that describe relevant features of institutions between pairs of countries have a close value in relation to the average of the sample. The focus on this variable follows upon the suggestion of Mansfield and Milner (1999: 607) that the "similarity of states' political institutions influences whether they will form a PTA and its efficacy once established." According to the institutionalist theory, "disagreement about specific form of cooperation is the principal barrier to cooperation" (Keohane and Martin, 1995: 45). Thus, similar institutions provide a possible mechanism to bargain on such disagreements, to coordinate common policies, and to favor cooperative outcomes.

Using a mixture of econometric and game theoretical methods, this study quantitatively tests the impact of two aspects of institutional similarity on international cooperation. Empirical findings support the argument that institutional similarity matters for the formation of PTAs. In particular, similarity in political and economic transparency proves to play an important role in regional integration. However, this is the case only when institutional similarity is combined with high quality institutions. Moreover, there is evidence that institutional similarity has a stronger impact on RTA formation than on BTA formation. Finally, as was the case in Chapter 2, there is mixed evidence that transparency has a stronger impact on trade blocs' formation as the depth of integration increases.

This chapter is structured as follows. The following section develops the theory upon which this study is built. The second part presents a simple cooperation game. The third section derives four testable hypotheses. The fourth part introduces the empirical 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 part controls for the robustness of the results. Finally, some conclusions are drawn.

3.1 Theoretical Puzzle

As Keohane (1988: 380-381) posits, cooperation is a contested concept that is in a dialectical relationship with the concept of discord and these two forces must be understood in conjunction. Taking states' preferences seriously is a good way to do this (Moravcsik, 1997). Forming an PTA is a process that involves at least three countries, so the concept of interdependence must be taken into account. In rational choice theory, states are assumed to be rational and self-interested and to act in such a way as to maximize their utility. Adopting these assumptions, it may be possible to explore the conditions under which cooperation, in general, and regional integration, in particular, take place.

Forming a PTA is consistent with the logic of a two-phase cooperation problem. Indeed, as several authors argue, the decision to form an agreement and the decision to fulfill an agreement are strongly connected (Fearon, 1998; Bearce, 2003). If states anticipate that impediments to monitoring and enforcing an agreement would make any cooperative agreement unstable, they have little incentive to negotiate (Fearon, 1998: 279), so cooperative agreements are unlikely to be formed (Leeds, 1999). In Fearon's words (1998: 270), "problems of international cooperation typically involve first a bargaining problem (akin to various coordination games [...]) and next to enforcement problem (akin to Prisoner's Dilemma game)." As the next two subsections will explain, institutional similarity plays a role in both these phases of cooperation. Two different causal mechanisms have been identified herein. First, institutional similarity increases information and trust among countries, thereby dampening the transaction costs of signing a PTA. Second, institutional similarity increases the ability of states to make credible commitments through reciprocity and flexibility and in doing so to dampen adjustment costs. The two following sections explain this in more detail.

3.1.1 Institutional Similarity and Transaction Costs

States that engage in PTAs bear costs to reap the benefits of increased trade (Baier and Bergstrand, 2004), to decrease the average cost per unit (Mattli, 1999), and to increase bargaining power with respect to third parties (Mansfield and Reinhardt, 2003). Institutional similarity may reduce one of these costs: those associated with transaction. Since the establishment of a PTA is a complex procedure that can be drawn out for a considerable duration, transaction costs are usually non-trivial in the bargaining process of forming such an agreement.[2]

The argument made herein is that institutional similarity reduces transaction costs in two ways: by increasing information and by promoting trust. First, institutional similarity provides reliable and cheap information to states that are bargaining on the formation of a PTA and facilitates the interactions among these states. As Williamson (1979: 234) argues, the efficient processing of information dramatically reduces transaction costs. Not only does the increase of information dampen the contractual expenses that states sustain during the formation of PTA, but it further reduces the duration of the bargaining period. In turn, this decreases bargaining costs, and so increases the probability that a PTA will be formed.

Second, institutional similarity augments trust, defined as "a belief that other agents would act in a predictable way and fulfill their obligations without special sanction" (Coleman, 2002: 2). The presence of common norms creates a favorable institutional environment, designated as "the set of fundamental political, social, and legal ground rules that establish the basis for production, exchange, and distribution" (Davis and North, 1971: 71). This allows actors to predict the behavior of potential members of a trade bloc and consequently affects or generates belief in their trustworthiness (Farrel

[2]Members of the Andean Pact, now known as the Andean Community of Nations, began the bargaining process for the formation of a FTA in 1969, but did not sign it until 1993 (with the exception of Peru, which only joined in 1997).

and Knight, 2003). Mutual trust among states is particularly important in a bargaining process because it allows bargaining at reasonable transaction costs (Williamson, 1993; Platteau, 1994). Indeed, increasing trust leads to a further decline of transaction costs by providing a larger amount of information to members.

3.1.2 Institutional Similarity and Credible Commitments

States take into account monitoring costs as well as bargaining costs. Indeed, if the costs of enforcing an PTA are (or are perceived to be) too high, states may be tempted to give up signing an agreement or to move slowly on its implementation.[3] Institutional similarity mitigates the problem of compliance by affecting the ability of states to make credible commitments among member countries. In doing so, institutional similarity dampens the adjustment costs that countries have to sustain domestically when they form a PTA. Adjustment costs are generally defined as the short-term costs of transition from one state (no trade agreement) to another (trade agreement). Indeed, adjustment costs are expected to depend on the level of flexibility of an agreement that influences the domestic costs of cooperation. In turn, the level of flexibility is related with the capability of states to make credible commitments. Thus, the argument sustained herein (and described formally in the next section) is that institutional similarity, influencing the capability of states to make credibly commitments, affects the terms and the conditions included in a trade agreement, lowering the adjustment costs that countries incur. In sum, institutional similarity impacts upon reciprocity and flexibility, which, as Axelrod (1984) posits, may encourage the emergence of cooperation.[4] Two dimensions are likely to influence the willingness of a state to enter a PTA: similarity in political accountability and similarity in political transparency.

[3]Although Simmons (1998) distinguishes between implementation, *i.e.* adopting new domestic rules, and compliance, *i.e.* actual behavior, the two terms are used synonymously herein. Indeed, for trade liberalization agreements, changing domestic economic regulations is the behavior that constitutes compliance.

[4]Note that the same term flexibility may imply different concepts, *e.g.* flexibility in states' behavior or flexibility in the rules of the agreement.

First, similarity in political accountability is related to similarity in audience costs for policy vacillation (Fearon, 1994). Specifically, the higher a state's political accountability, the higher the audience costs that countries have to sustain in the case of defection from an international arrangement. Thus, states that have a high degree of political accountability, measured by high level of executive accountability, of government effectiveness, and a high level of political stability, tend to be slow and methodical regarding major foreign-policy commitments and to exhibit a significant status quo bias (Leeds, 1999). Conversely, assuming that interests of the two states are aligned, states with low political accountability exhibit a high degree of flexibility, allowing them to respond easily to the actions of their international counterparts and to suffer less from a change in the international environment (Leeds, 1999). As a result of these differences, it may be expected that countries with similar political accountability are more likely to form PTAs with one another than with a country that has a different level of political accountability. In other words, when countries decide to form an PTA, they are likely to target member partners that are similar in political accountability so that they sustain lower adjustment costs.

Second, similarity in transparency of political process is related to similarity in domestic conditionality, *i.e.* procedures that condition the extent of cooperation on domestic circumstances (Svolik, 2006). Specifically, in certain circumstances cooperation can be undermined by an excessively high cost of compliance. Thus, states that face fluctuating costs of compliance over time design agreements that account for political pressure to defect in such a way as to make cooperation most politically viable. Again, the core of the mechanism is information and adjustment costs. Indeed, an essential element of conditional cooperation on domestic circumstances is the need for cooperating states to communicate credibly about those circumstances to each other. If states are not able to observe each other's domestic circumstances, the benefit of institutional flexibility may be compromised by an incentive to misrepresent private information in order to achieve a more

favorable outcome (Svolik, 2006). Under asymmetric information, similarity in political transparency among states, measured by level of corruption, rule of law, and regulatory quality, leads them to form PTAs featuring similar domestic conditionality, which in turn leads to low adjustment costs. For instance, countries lacking in transparency tend to face agreements with a high penalty for using the escape clause, which may not appeal to countries with elevated transparency since they lose some of the gains of cooperation as a result. Thus, a country with high political and economic transparency would agree to form a PTA with a country with low political transparency only after the latter implements domestic reforms to increase its transparency. This is likely to generate large adjustment costs that outweigh the benefit of a PTA.

In sum, the theoretical results that are anticipated here and developed formally in the next section suggest that institutional similarity among countries dampens transaction costs by increasing information and promoting trust among states. In turn, lower transaction costs decrease bargaining costs and, because the bargaining process is less costly and unstable for each state, the likelihood of forming a PTA increases. Moreover, as institutional similarity increases, states are more likely to make credible commitments during the phase of implementing a PTA. In turn, this decreases the adjustment costs that states have to sustain to fulfill the agreement, increasing the probability of regional integration.

3.2 A Model of Cooperation

The game represented in Figure 3.1 is a simplified version of the cooperation process between two states. The decision to focus on only two states is justified by the fact that the bargaining process is explored between pairs of countries, though the present paper deals only with PTAs. Indeed, the insights derived from a game with only two states can be easily generalized for a larger number of countries. Moreover, the game distinguishes between the two phases, bargaining and enforcement, as do other models in the field

(Leeds, 1999). Although the model describes two steps of cooperation, it should be noted that the steps overlap insofar as states already bear in mind the enforcement issues of a PTA during the bargaining phase. Thus, states anticipate potential problems or divergent interests and do not conclude an agreement without having either successfully resolved said obstacles or having effectively safeguarded themselves against the same. For instance, it is not credible that a country that has high political accountability would decide to form a PTA with a country that has low political accountability without including rigid clauses in the agreement to avoid flip-flops in the latter's foreign policy.

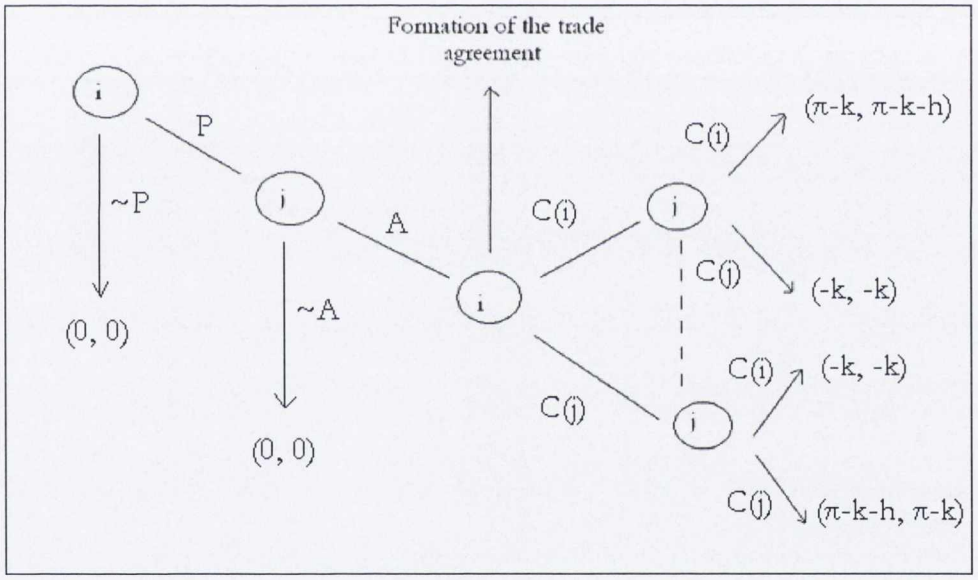

Figure 3.1. The cooperation game. π equals benefit from forming a PTA; h adjustment costs for adopting the partner's agreement terms; k equals bargaining costs.

This game is a two-player game of complete information;[5] the payoffs re-

[5] A game is one of complete information if all factors of the game are common knowledge. Specifically, each player is aware of all other players, the timing of the game, and the set of strategies and payoffs for each player.

ceived by each player from each outcome are common knowledge. The game is not, however, a game of perfect information.[6] Thus, players are occasionally uncertain about the choices of their counterparts. This is what makes the game interesting, allowing the study and understanding of the impact of strategic uncertainty on the probability of regional integration. The process of cooperation is presented in two steps. First, the two states, i and j, make the decision to form an PTA; i decides whether or not to propose cooperation (P or $\sim$P) and j decides whether to accept or to reject it (A or $\sim$A). Second, regarding the implementation of trade cooperation, states have to agree with the terms of this cooperation, bearing in mind the adjustment costs connected thereto. In other words, each state has to decide which clauses are to be included in the agreement and what degree of flexibility is to be granted by the arrangement. The conditions set in the arrangement are assumed to be a function of domestic institutions, measured by the level of political accountability and political and economic transparency, of one of the two countries. For instance, a high level of political and economic transparency allows countries to design agreements with elevated flexibility, since they are credibly capable of communicating the domestic circumstances in which they would be unable to fulfill the agreement.

In this model, the agreement if fulfilled if and only if both states agree to cooperate under the same conditions; otherwise, no cooperation is sustainable in the enforcement phase. Thus, the final outcome of cooperation either satisfies completely the preference of country i or country j (or both cooperate under i's conditions $= C(i)$ or both cooperate under j's conditions $= C(j)$). The statement is admittedly a somewhat crude simplification of the bargaining process, which is likely to be a compromise among different interests. However, this assumption rests on the belief that some crucial terms of the agreement are non-negotiable because the risks related to them are perceived to be too high. Some historical examples may, indeed, support

[6] A sequential game is one of imperfect information if a player does not know exactly what actions other players took up to that point. Graphically, a player does not know in which node is.

this hypothesis; Germany, for instance, agreed to give up control of monetary policy in favor of the European Central Bank only after having ensured the constitutionalization of its rules and its independence, shaped on the Deutsche Bank model (Brentford, 1998).

The payoffs of the game depend on three elements. First, π_i represents the payoff country i derives from having established an PTA, *e.g.* lower transaction costs or scale economies. Although π_i is a function of several different factors, such as economic size of a country or level of economic development, for the purposes of simplifying the analysis it is herein assumed that $\pi_i = \pi$ for all i. Second, the term h_i equals the economic and political costs that country i has to sustain to make the necessary adjustment in order to meet the clauses in the trade agreement. For instance, in the aforementioned case of a state with low political accountability, h_i may be the cost of implementing some constitutional reforms to raise the political accountability so that said state's audience costs become compatible with those of the member country with high political accountability. Again, it is assumed that $h_i = h$ for all i and $0 < h < 1$.

More importantly for the purposes of this model, it is also assumed that $h = f(a - b)$ where a and b are a measurement of formal domestic institutions of respectively country i or country j. This assumes that the adjustment costs are a monotonically increasing function of institutional dissimilarities between countries i and j, since this leads to a different capability to make credible commitments, as previously explained. Indeed, since institutional dissimilarity leads to different preferences in designing a trade agreement, it is logical to assume that the adjustment costs increase as the gap in initial level of political accountability and political and economic transparency between i and j rise. Third, k is the bargaining costs that countries i and j have to sustain in relation to an PTA. As for h, $k_i = k$ for all i, $0 < k < 1$, and with $\pi > k$.

In sum, each state has to decide not only whether or not to form a PTA,

but also if to then fulfill the agreement under its own conditions or those of the other member state.[7] Forming a PTA increases the benefit for each state, but also imposes some adjustment costs from the previous status quo, generated by accepting the terms of the other member country. These costs are related to states' capability to make credible commitments during the enforcement phase and are already taken into account at the moment to sign the trade agreement, influencing the probability of regional integration. The most preferred scenario for each state is to coordinate under its own conditions, so that it is able to maximize the benefit of the trade agreement. The worst scenario is failing to reach an agreement, having supported the bargaining costs. This model is similar, but not identical, to other international relations models of coordination.[8]

The formal solution of this simple model is reserved for Appendix A. Herein, two important considerations can be made. First, if the costs of bargaining and adjustment outweigh the perceived benefit of regional integration, states' dominant strategy is to give up trade cooperation. This result contests the claim of a large body of international relations literature that cooperation is a socially efficient outcome relative to the status quo. In the model, this is true only if limiting the analysis to the bargaining phase. Indeed, if the enforcement phase is taken into account as well, the model shows formally that there are scenarios in which non-cooperation is the optimal strategy and that cooperation is not a Pareto-dominant outcome. Second, regional integration is an increasing function of π and a decreasing function of h, as the mixed strategies equilibrium demonstrates in the Appendix.[9] Thus, any decrease in the adjustment costs raises the likelihood of regional integration or similarly, and most importantly for the purposes of this paper, any decrease of the initial gap between countries' formal domestic institutions

[7]Remember that it is assumed that the formation of a trade agreement arises if and only if the two states choose the same conditions.

[8]For similar versions of this model, see Krasner (1991) and Drezner (2007).

[9]The mixed strategy equilibrium captures the whole problem of cooperation, in absence of any reasons to focus on one or the other pure-strategy equilibrium (Johnson and Calvert, 1998).

increases the probability of the formation of a PTA. Indeed, it is worthwhile to stress that states are uncertain whether (and which) obligations of the agreement will be met. They know only the probability of a PTA being formed and fulfilled and that this probability increases as h decreases.

3.3 Hypotheses

Combining the formal insights with the considerations made above on the role of institutional similarity, the following hypothesis can be stated:

HP1: Institutional similarity between dyads of countries is expected to increase the probability of forming a preferential trade agreement.

Moreover, this hypothesis has three interesting corollaries that are worth testing. The first corollary links this theoretical framework with the insights gained in the previous chapter. Specifically, institutional similarity is expected to have a stronger impact on the formation of PTAs when it is associated with high quality institutions. Indeed, in this favorable scenario, countries face particularly low transaction costs and monitoring costs because of the combining effect of institutional similarity and quality of institutions. Thus, a second hypothesis can be stated as follows:

HP2: The impact of institutional similarity on the probability of forming a preferential trade agreement is higher when it arises in conjunction with high quality institutions.

The second corollary concerns a consideration on the depth of integration. Since the emphasis of the argument presented previously rests heavily on the bargaining and the adjustment costs, it is expected that both depend on the extent of integration that the agreement aims to achieve (Mansfield *et al.*, 2008). Specifically, as the depth of integration increases, the expected bargaining costs and adjustment costs rise as well, since the more extensive integration is likely to cover more sectors and a larger segment of the

society. Thus, the bargaining and enforcement processes for the formation of a PTA are more costly and more complex as the depth of integration increases. In turn, all things being equal, in both phases institutional similarity is expected to matter more for the formation of a deep PTA than for the formation of a shallow PTA. Thus, the following third hypothesis can be stated:

HP3: As the depth of regional integration increases, the impact of institution similarity on the formation of a preferential trade agreement is expected to rise as well.

The third corollary concerns the difference between plurilateral, or regional, trade agreements (henceforth, RTAs) and bilateral trade agreements (henceforth, BTAs) that, as already said, has been largely disregarded by previous studies. Since the emphasis in the bargaining process is on transaction costs, the number of actors negotiating the formation of a PTA is likely to affect the magnitude of such costs. As Oye (1986: 19) posits, as the number of actors increases, transaction and information costs rise. Moreover, there is a positive relationship between number of players and length of negotiations and, as already explained, there is a transaction cost associated with each period of delay (Cramton, 1991: 1221). Accordingly, the bargaining process for the formation of a PTA is more costly, more complex, and longer than the bargaining process for the formation of a BTA. Thus, all things being equal, in the bargaining phase both quality of institutions and institutional similarity are expected to matter more for the formation of PTAs than for the formation of BTAs. Thus, the following fourth hypothesis can be stated:

HP4: The impact of institution similarity is likely to be stronger on the formation of a regional trade agreement than on the formation of a bilateral trade agreement.

3.4 Empirical Model

In order to test the previous hypotheses, the following two models have been built:

$$y_{ij,t} = \beta_1 X_{ij,t-1} + \beta_2 U_{ij,t-1} + \beta_3 W y_{ij,t-1} + \epsilon_{ij,t}. \tag{3.1}$$

$$y_{ij,t} = \beta_1 X_{ij,t-1} + \beta_2 Z_{ij,t-1} + \beta_2 X_{ij,t-1} \times Z_{ij,t-1} + \beta_3 U_{ij,t-1} + \beta_4 W y_{ij,t-1} + \epsilon_{ij,t}. \tag{3.2}$$

Where Y is the dependent variable, X is the matrix of the covariates that capture institutional similarity, Z is the matrix of variable that capture the quality of institutions, X × Z is the interaction term between the two previous variables, U is the vector of control variables, Wy_{t-1} is the term that controls for spatial dependence, and ϵ is the error term. For testing hypothesis one, three, and four I use the additive model described in Equation 1, whereas to test hypothesis two, I use the constitutive model described in Equation 2. The three specifications of the dependent variable, all the explanatory variables included in the empirical model, and the spatial term have been described in Chapter 1 and Chapter 2.

To operationalize the concept of institutional similarity, I use the absolute value of the difference of each of the variables, named *quality of institutions* in Chapter 1, between pairs of countries. A large distance implies substantial difference among states in their institutions, whereas a small distance implies a high level of institutional similarity.[10] To ease the interpretation I take the negative value of the distance. Hence, a positive sign of coefficients of similarity indicators would verify the previous hypotheses. Table 3.1 summarizes the sample means and standard deviations for each of these

[10]For an extensive discussion on different measurements of distance in social science, see Benoit and Laver (2006).

six variables. The last two rows show dyads of states that are respectively above and below the mean for each institution, *i.e.* the dyads of country that have respectively more dissimilar or more similar institutions than the sample average. Finally, since the correlation among these indicators is quite high (Table 3.2), I estimate them separately to avoid the multicollinearity problem.

Table 3.1. Summary of the six indicators: dyads of countries at various levels of institutional similarity.

	Similarity Corrupt.	Similarity Rule of Law	Similarity Reg. Qual.	Similarity Ex. Acc.	Similarity Pol. Stab.	Similarity Gov. Effect.
Mean	-1.10	-1.09	-1.03	-1.11	-1.08	-1.10
Std. Dev.	.89	.83	.80	.79	.81	.86
High Similarity	Ethiopia	Georgia	Turkmenistan	Afganistan	Spain	Denmark
	El Salvador	Gambia	Zaire	Cuba	Mali	Korea
Low Similarity	Estonia	New Zealand	Fiji	Algeria	Egypt	Ecuador
	Oman	Senegal	Mongolia	Japan	Slovakia	Paraguay

Table 3.2. Correlation among the six variables that measure the institutional homogeneity.

Similarity	Similarity Corrupt.	Similarity Rule of Law	Similarity Reg. Qual.	Similarity Ex. Acc.	Similarity Pol. Stab.	Similarity Gov. Effect.
Corrupt.	1					
Rule of Law	.84	1				
Reg. Qual.	.59	.65	1			
Ex. Acc.	.53	.56	.56	1		
Pol. Stab.	.45	.49	.49	.46	1	
Gov. Effect.	.85	.86	.68	.55	.44	1

To estimate Model 1, I use a Cox Proportional Hazard Model,[11] Ordered Probit, and Multinomial Logit. To estimate Model 2, I use a logistic model that has a more immediate interpretation of the interaction term than that afforded by the Cox model. In this last estimation, to account for the duration dependence of the dependent variable, natural cubic splines (with three knots) are included.[12] In carrying out these analysis, I take into account

[11]The rationale of this choice has been motivated rigorously in Chapter 1.

[12]For the purposes of saving space, neither splines nor time dummies are reported in the econometric analysis.

also further PTAs signed by the same dyad, *i.e.* dyads do not drop from the dataset after a failure.[13] Finally, as already mentioned in Chapter 2, due to panel heteroskedasticity or serial correlation, I use Huber standard errors in every estimation.

3.5 Empirical Findings

3.5.1 Cox Proportional Hazard Model

The results shown in Table 3.3 and Table 3.4 strongly support the first hypothesis. Indeed, all the six coefficients related to institutional similarity have negative sign, as expected, indicating that as dyads of countries become more similar, the probability of regional integration increases. Furthermore, all of them but political stability are statistically significant at a 99 per cent level.

Regarding the interpretation of the coefficients of the main explanatory variables, a 1-unit increase in similarity in control of Corruption raises the likelihood of signing a PTA by 22 per cent, whereas a 1-unit increase in similarity in Rule of Law raises the probability of signing a PTA by 24 per cent. Similarly, a 1-unit increase in similarity in Executive Accountability raises the likelihood of signing a PTA by 22 per cent, whereas a 1-unit increase in similarity in Government Effectiveness and Regulatory Quality raises the probability of signing a PTA by respectively 20 per cent and 35 per cent.

Similarity in the level of political and economic transparency proves to be the variable that has the strongest impact on the probability of the formation of a PTA. Figure 3.2 shows graphically how two variables capturing transparency (Rule of Law and Regulatory Quality) impact upon the survival curve. A possible explanation of this finding rests on the fact that, due to the emphasis of the new regionalism on trade-related issues domestic conditionality is expected to be taken into account seriously by states bar-

[13]To tackle the multi spells problem, I use Cox Proportional Hazard model with the inverse Gaussian Frailty extension (see Chapter 2).

Table 3.3. The impact of institutional similarity on the formation of preferential trade agreements. Cox Proportional Hazard Model with the inverse Gaussian Frailty extension clustered by dyads. Notes: robust standard errors are in parentheses. ** significant at 1 per cent, * significant at 5 per cent.

Covariates	Model 1	Model 2	Model 3
Similar. Corruption	.25** (.03)		
Similar. Rule of Law		.28** (.03)	
Similar. Reg. Qualit.			.43** (.03)
Trade	.02 (.02)	.02 (.02)	.00 (.02)
GDPpc	-.06** (.01)	-.06** (.01)	-.07** (.01)
GDP	.23** (.02)	.23** (.02)	.23** (.02)
GDP Growth	-.01** (.004)	-.01** (.003)	-.01** (.003)
Economic Similarity	-.02 (.01)	-.02 (.02)	-.02 (.01)
Alliance	.39** (.05)	.39** (.05)	.36** (.06)
Trade Disp.	-1.27 (.58)	-1.29 (.58)	-1.29 (.58)
Trade Disp. 3^{rd} Party	.22* (.06)	.22* (.06)	.22* (.06)
WTO	.29** (.05)	.28** (.05)	.18* (.05)
WTO Round	.78** (.10)	.78** (.10)	.77** (.10)
Distance	-1.03** (.02)	-1.02** (.02)	-1.03** (.02)
Contiguity	-.73** (.08)	-.73** (.08)	-.70** (.08)
Island	-.24** (.08)	-.23** (.08)	-.23** (.08)
Colony	.23* (.05)	.22* (.06)	.20* (.06)
Language	.10 (.06)	.09 (.06)	.10 (.05)
Religion	.10 (.05)	.10 (.05)	.10 (.05)
Spatial Depend.	-.00 (.03)	.00 (.03)	-.02 (.03)
No. of Obs.	242,059	242,059	242,059
Number of Failures	2366	2366	2366
Prob $\geq \chi^2$	1948.42 (.00)	1842.27 (.00)	1837.26 (.00)

gaining a trade bloc. Indeed, as the depth of integration increases in terms of sectors regulated by the PTA, flexibility is expected to be quite important to respond to unanticipated events within the context of a well-designed institutional system. In turn, the necessity of setting up efficient breach clauses to overcome the asymmetric information problem is likely to be decisive for

Table 3.4. The impact of institutional similarity on the formation of preferential trade agreements. Cox Proportional Hazard Model with the inverse Gaussian Frailty extension clustered by dyads. Notes: robust standard errors are in parentheses. ** significant at 1 per cent, * significant at 5 per cent.

Covariates	Model 4	Model 5	Model 6
Similar. Ex. Acc.	.28** (.03)		
Similar. Pol. Stab.		.06 (.03)	
Similar. Gov. Effect.			.22** (.03)
Trade	.01 (.02)	.01 (.02)	.02 (.02)
GDPpc	-.06** (.01)	-.05** (.01)	-.06** (.01)
GDP	.23** (.02)	.22** (.02)	.22** (.02)
GDP Growth	-.01* (.003)	-.01** (.003)	-.01** (.003)
Economic Similarity	-.03 (.01)	-.03 (.01)	-.02 (.01)
Alliance	.36** (.05)	.39** (.05)	.40** (.05)
Trade Disp.	-1.32 (.58)	-1.28 (.58)	-1.29 (.58)
Trade Disp. 3^{rd} Party	.11 (.06)	.22* (.06)	.20* (.06)
WTO	.26** (.05)	.30** (.05)	.29** (.05)
WTO Round	.76** (.09)	.79** (.09)	.77** (.09)
Distance	-1.02** (.01)	-1.02** (.02)	-1.02** (.02)
Contiguity	-.69** (.08)	-.69** (.08)	-.72** (.08)
Island	-.23** (.08)	-.25** (.08)	-.23** (.08)
Colony	.24* (.05)	.24** (.05)	.23* (.05)
Language	.09 (.06)	.12 (.06)	.10 (.06)
Religion	.07 (.05)	.13* (.05)	.10 (.05)
Spatial Depend.	-.00 (.03)	.01 (.03)	.01 (.03)
No. of Obs.	242,059	242,059	242,059
Number of Failures	2366	2366	2366
Prob $\geq \chi^2$	1948.42 (.00)	1842.27 (.00)	1837.26 (.00)

states' decision to cooperate. As explained above, similarity in political and economic transparency is related to similar preferences in terms of level of flexibility and safeguard clauses in the arrangement. Specifically, states that are homogeneous in terms of political and economic transparency are expected to have to sustain small costs of compliance to adjust their domestic

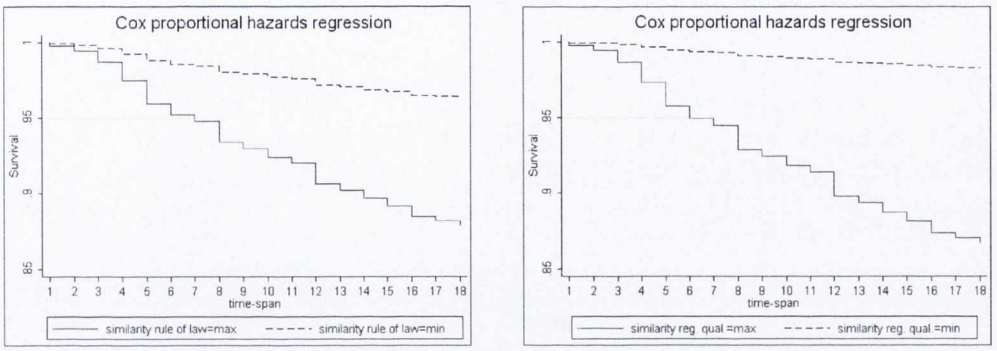

Figure 3.2. Survival estimates: Rule of Law and Regulatory Quality.

institutions to follow the terms of the trade agreement.

Regarding the other control variables, the signs of all the coefficients are in line with the other studies in the field for both Model 1 and Model 2. The only statistically significant variables that have the opposite sign than that expected are GDP per capita and contiguity.[14]. Regarding the spatial term, I implement some further analyses, since the fact that this variable is not statistically significant runs against previous finding (Egger and Larch, 2006; Manger, 2005b).[15] First, I run the same estimation with single failure, *i.e.* dyads drop from the dataset after forming the first PTA. In this case, in line with results obtained in Chapter 1, the spatial term has a positive sign and is statistically significant at a 99 per cent level. Second, I include the variable Diffusion, which captures the total number of PTAs signed by the dyads until *t-1* and also in this case the variable has a positive sign and is statistically significant at a 99 per cent level.[16] These results reassure us that there is empirical evidence of a domino effect regarding proliferation of PTAs.

[14]For an extensive discussion on the results of these two variables, see Chapter 2.

[15]It must be taken into account that my time-span differs from previous studies.

[16]For a similar approach, see Mansfield *et al.* (1999; 2002).

3.5.2 Logistic Model

To test the second hypothesis, I run a logistic model (Table 3.5) with the interaction term between institutional similarity indicators and the quality of institutions variables (Equation 2).[17] Coefficients of interaction terms are statistically significant at a 99 per cent level, leading to a rejection of the additive model. However, the interpretation of these terms is not straightforward. As Brambor *et al.* (2006: 72) point out, the coefficients on constitutive terms cannot be interpreted as unconditional marginal effects. Similarly, Brambor *et al.* (2006) also stress that it is incorrect to argue that a positive and significant coefficient on the constitutive term X indicates that an increase in X is expected to lead an increase in Y. Thus, to appropriately interpret results in Table 5, I use graphical support. Specifically, following the suggestion of Brambor *et al.* (2006: 73) to choose meaningful marginal effects, I anchor the value of institutional similarity (X) to zero, *i.e.* maximum similarity between countries in dyad. Then, I study the marginal effect of institutional similarity on PTA formation as indicators capturing the quality of institutions (Z) change their value from zero (minimum) to five (maximum).

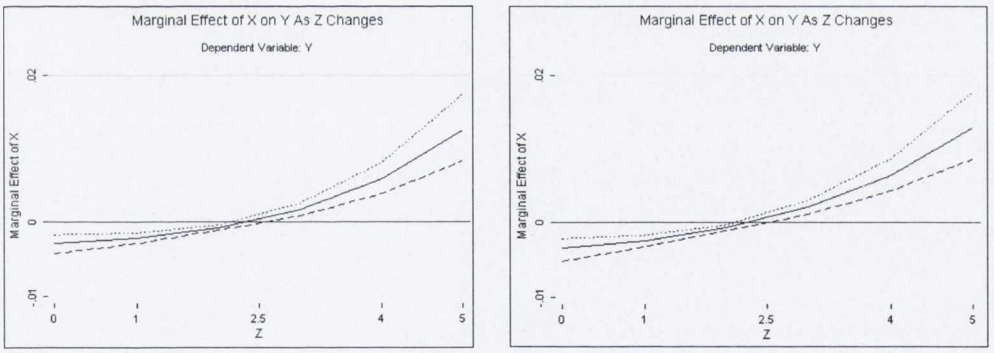

Figure 3.3. Interaction term between institutional similarity and the quality of institutions: control of Corruption and Rule of Law.

[17] I report the estimation only of variables whose interaction terms are statistically significant.

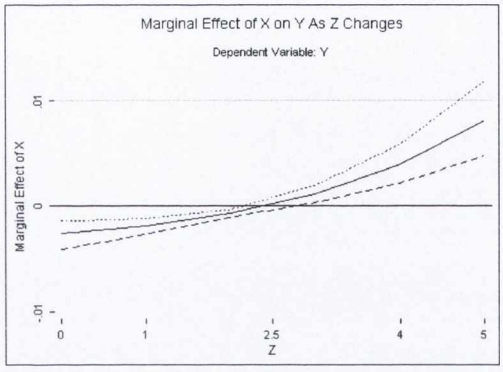

Figure 3.4. Interaction term between institutional similarity and the quality of institutions: Government Effectiveness.

The effects of the interaction terms shown in Figure 3.3 and Figure 3.4 are very interesting. Specifically, the impact of high institutional similarity on PTA formation is positive (and statistically significant) only when the quality of institutions is high, *i.e.* above the mean. Conversely, the effect of high institutional similarity on PTA formation is negative (and statistically significant) for those dyads that have low quality institutions *i.e.* below the mean. Admittedly, the impact is quite low in both cases.[18] This result confirms only partially the second hypothesis and sheds new light on the causal mechanism that links institutional similarity and international cooperation. In particular, it seems to suggest that the reduction of transaction costs and monitoring costs arises only when institutional similarity is associated with high quality institutions. Moreover, it implies that countries that have low quality institutions, which are usually developing countries, are forced to form PTAs mainly with each other and so are not able to cooperate with the full set of countries in the world. This may happen either because developed economies do not agree to form a PTA with developing countries or because the latter face prohibitively high adjustment costs for entering into a PTA with the former countries. The analysis suggests the presence of a threshold

[18] 1440 dyads have similarity in corruption equals to zero; 1030 dyads have similarity in rule of law equals to zero; 893 dyads have similarity in regulatory quality equals to zero.

Table 3.5. The combining effect of institutional similarity and the quality of institutions on the formation of preferential trade agreements. Logistic regression clustered by dyads with three knots spline. Notes: robust standard errors are in parentheses. ** significant at 1 per cent, * significant at 5 per cent.

Covariates	Model 7	Model 8	Model 9
Similar. Corrupt.	.34** (.04)		
Similar. Rule of Law		.37** (.04)	
Similar. Gov. Effect.			.28** (.04)
Corrupt.	.03 (.03)		
Rule of Law		.01 (.03)	
Gov. Effect.			.03 (.03)
Similar. Corrupt. × Corrupt.	-.15** (.03)		
Similar. Rule of Law × Rule of Law		-.16** (.02)	
Similar. Gov. Effect. × Gov. Effect.			-.12** (.02)
Trade	.03** (.01)	.03** (.01)	.03** (.01)
GDPpc	-.04** (.003)	-.03** (.003)	-.03** (.003)
GDP	.08** (.01)	.08** (.01)	.07** (.01)
GDP Growth	.001 (.001)	.001 (.001)	.001 (.001)
Economic Similarity	-.02** (.005)	-.02** (.005)	-.02** (.005)
Alliance	.15** (.02)	.15** (.02)	.16** (.02)
Trade Disp.	-.47* (.20)	-.48* (.20)	-.49* (.20)
Trade Disp. 3^{rd} Party	.04 (.02)	.04 (.03)	.04 (.03)
WTO	.10** (.02)	.10** (.02)	.11** (.02)
WTO Round	.41** (.03)	.41** (.03)	.41** (.03)
Distance	-.51** (.02)	-.51** (.02)	-.51** (.02)
Contiguity	-.21** (.04)	-.20** (.04)	-.21** (.04)
Island	.09* (.03)	.08* (.03)	.08* (.03)
Colony	.05 (.03)	.05 (.03)	.04 (.03)
Language	.15** (.03)	.09** (.02)	.15** (.02)
Religion	.07** (.02)	.08** (.02)	.06** (.02)
Spatial Depend.	.08** (.02)	.09** (.02)	.09** (.02)
No. of Obs.	242,059	242,059	242,059
Pseudo R^2	.18	.18	.18

in terms of quality of institutions under which cooperation among countries is constrained by domestic obstacles and so cannot be fully developed.

Finally, it should be noted that variables capturing the quality of institutions cease to be statistically significant once the interaction term is included. This result is produced by multicollinarity, which leads to large standard errors on the model parameters. In other words, due to multicollinearity there is not enough information in the data to estimate the model parameters accurately and the standard errors rightfully reflect this (Brambor *et al.*: 2006, 70).

3.5.3 Ordered Probit Model

Regarding the ordered logit regression, since results are quite similar among the six indicators, I run only three specifications of the Equation 1. Table 3.6 shows that all three coefficients related to institutional similarity are negative, as expected, indicating that as dyads of countries become more similar, the probability of regional integration increases. Moreover, they are all statistically significant at 99 per cent level. As for the logistic model, in the ordered logit model the value of the coefficients is not meaningful for describing the impact of the explanatory variables on the dependent variable. Table 3.7 shows the effects of the institutional similarity variables on the likelihood of a PTA's formation using the software Clarify (King, 2000).[19]

The ordered logit analysis shows that as the depth of regional integration increases, the impact of institutional similarity on the formation of PTAs produces mixed results. The effect of institutional similarity is always stronger on the probability of forming a free trade area compared to the probability of forming a PTA. However, as in Chapter 2, the impact of institutional similarity on the likelihood of forming a custom union, a common market, and economic monetary union is always weaker than on the likelihood of forming a free trade area. The explanation for these findings has been provided in

[19]The same caveat on the magnitude of the first differences as from Chapter 2 holds.

Table 3.6. The impact of institutional similarity on the depth of preferential trade agreements. Ordered Probit clustered by dyads. Notes: robust standard errors are in parentheses. ** significant at 1 per cent, * significant at 5 per cent.

Covariates	Model 2	Model 3	Model 4
Similar. Rule of Law	.11** (.01)		
Similar. Reg. Qualit.		.16** (.01)	
Similar. Ex. Account.			.12** (.01)
Trade	.01 (.01)	.01 (.01)	.01 (.01)
GDPpc	-.02** (.002)	-.03** (.002)	-.02** (.002)
GDP	.09** (.01)	.09** (.007)	.09** (.01)
GDP Growth	-.002* (.001)	-.002 (.001)	-.002 (.001)
Economic Similarity	-.01 (.01)	-.01* (.005)	-.01* (.005)
Alliance	.17** (.02)	.16** (.02)	.16** (.02)
Trade Disp.	-.56** (.20)	-.56** (.20)	-.58** (.20)
Trade Disp. 3^{rd} Party	.11** (.02)	.11** (.02)	.10** (.02)
WTO	.10** (.02)	.07** (.02)	.09** (.02)
WTO Round	.26** (.02)	.27** (.02)	.26** (.02)
Distance	-.49** (.01)	-.49** (.01)	-.49** (.01)
Contiguity	-.26** (.04)	-.26** (.04)	-.25** (.04)
Island	-.04 (.03)	-.04 (.03)	-.04 (.03)
Colony	.02 (.03)	.03 (.03)	.03 (.03)
Language	.12** (.03)	.11** (.03)	.11** (.03)
Religion	.06** (.02)	.05** (.02)	.04* (.02)
Spatial Depend.	.03 (.02)	.03 (.02)	.03 (.02)
Cut 1	-1.32** (.13)	-1.42** (.12)	-1.34** (.13)
Cut 2	-1.22** (.13)	-1.33** (.12)	-1.25** (.13)
Cut 3	-.55** (.13)	-.66** (.13)	-.59** (.13)
Cut 4	-.49** (.13)	-.59** (.13)	-.52** (.13)
Cut 5	-.45** (.13)	-.55** (.13)	-.48** (.13)
No. of Obs.	242,059	242,059	242,059
Pseudo R^2	.15	.15	.15
Prob $\geq \chi^2$	31905.40 (.00)	3262.33 (.00)	3104.12 (.00)

the previous chapter and is probably related to the low number of custom unions, common markets, and economic monetary unions compare to free

Table 3.7. First differences of Rule of Law, Regulatory Quality, and Executive Accountability. All values are evaluated moving from the minimum to the maximum value of each transparency indicator and holding the other control variables at their average value. 95 per cent confidence intervals are in parentheses.

Depth of Integration	Similar. Rule of Law min → max	Similar. Reg. Qualit. min → max	Similar. Ex. Account. min → max
PA	-.11 [-.13, -.9]	-.14 [-.16, -.12]	-.11 [-.12, -.8]
FTA	-.33 [-.38, -.28]	-.43 [-.48, -.38]	-.33 [-.38, -.28]
CU	-.009 [-.012, -.006]	-.011 [-.015, -.009]	-.009 [-.012, -.006]
CM	-.005 [-.007, -.003]	-.007 [-.009, -.004]	-.005 [-.007, -.003]
EMU	-.03 [-.04, -.02]	-.04 [-.05, -.03]	-.03 [-.04, -.02]

trade areas. In sum, the third hypothesis is only partially verified.

3.5.4 Multinomial Logit Model

To test the fourth hypothesis, I run a multinomial logistic regression, distinguishing between bilateral trade agreements and plurilateral (or regional) trade agreements.[20] Results are shown in Table 3.8 and Table 3.9.[21] There is strong evidence that institutional similarity has a stronger impact on the formation of RTAs than on the formation of BTAs. Indeed, the effect of similarity in Rule of Law on RTA formation is almost four times higher than on BTA formation. Moreover, similarity in Executive Accountability is statistically significant at a 99 per cent level only in RTA formation whereas it is not statistically significant in the case of BTA formation. These findings confirm the fourth hypotheses. A regional integration agreement involves a larger number of actors than a bilateral arrangement and so the more complex the bargaining and the enforcement phases are, the higher the importance of institutional similarity for bolstering cooperation among member countries. Finally, as for the ordered probit, coefficients of control variables have the

[20]The assumption of the independence of irrelevant alternatives (IIA has been conformed by the Small-Hsiao test (1985).

[21]As for the ordered probit analysis, since results are quite similar among the six indicators, I run only two specifications of the Equation 1. Results for other variables are available upon request.

Table 3.8. The impact of similarity in Rule of Law and Executive Accountability on the type of preferential trade agreements. Ordered Probit clustered by dyads. Notes: robust standard errors are in parentheses. ** significant at 1 per cent, * significant at 5 per cent.

Covariates	Model 2		Model 4	
	RTA	BTA	RTA	BTA
Similar. Rule of Law	.16** (.04)	.37** (.04)		
Similar. Ex. Account.			.07 (.05)	.47** (.04)
Trade	-.01 (.02)	.09** (.02)	-.01 (.02)	.09** (.02)
GDPpc	-.11** (.01)	-.06** (.001)	-.11** (.01)	-.05* (.001)
GDP	.52** (.03)	.01 (.03)	.52** (.03)	.01 (.03)
GDP Growth	-.02** (.005)	.01** (.003)	-.02** (.005)	.01** (.004)
Economic Similarity	.11** (.02)	-.08** (.02)	.10** (.02)	-.09** (.002)
Alliance	.04 (.09)	.53** (.06)	.03 (.09)	.49** (.06)
Trade Disp.	-35.81** (.13)	-.24 (.58)	-32.82** (.13)	-.28 (.58)
Trade Disp. 3^{rd} Party	.56** (.11)	-.08 (.08)	.50** (.11)	-.12 (.08)
WTO	.69** (.10)	.23** (.06)	.70** (.10)	.21** (.06)
WTO Round	.24 (.13)	1.53** (.09)	-.24 (.13)	1.52** (.09)
Distance	-1.43** (.05)	-1.05** (.06)	-1.43** (.05)	-1.05 (.06)
Contiguity	-1.65** (.22)	-.40** (.11)	-1.62** (.22)	-.35** (.11)
Island	-.43* (.18)	-.17 (.11)	.44* (.18)	-.17 (.11)
Colony	-.29* (.13)	.14 (.10)	-.28* (.13)	.17 (.10)
Language	-.82** (.22)	.42** (.10)	-.81** (.21)	.40** (.10)
Religion	.03 (.10)	.21** (.06)	.03 (.10)	.16* (.06)
Spatial Depend.	.004 (.06)	.28 (.05)	.01 (.07)	.29** (.05)
No. of Obs.	242,059		242,059	
Pseudo R^2	.19		.19	

expected sign, with the exception of the two aforementioned variables.

3.6 Robustness Check

Several robustness checks have been implemented. First, as in Chapter 2, I estimate different specifications of the models from Equation 1 and Equation 2, using a first-order Markov chain model. This is another way of dealing

Table 3.9. First differences of similarity in Rule of Law. All values are evaluated moving from the minimum to the maximum value of each transparency indicator and holding the other control variables at their average value. 95 per cent confidence intervals are in parentheses.

Depth of Integration	Similar. Rule of Law
	min → max
BTA	-.05 [-.08, -.02]
RTA	-.38 [-.44, -.32]

with the multi failure problem. Second, as I did in the previous chapter, I run the Cox model with single spell.*i.e.* with only a single occurrence of PTA formation.[22] Third, since the dataset is organized as a Time-Series-Cross-Section data, a random-effect logistic has been run to control for the problem of heterogeneity. Fourth, because several coefficients of regressions turned out not to be statistically significant, the estimation is run again excluding these variables. Fifth, I implement the previous analysis using also direct dyads. Sixth, I use a Cox Proportional Hazard Model with Gamma Frailty. Finally, I include year controls in the model for exogenous shocks. In all these cases, the results are roughly comparable and available upon request.

3.7 Conclusion

Despite a tendency in the world economy towards a single global market, there are several factors that prevent international trade from being as widespread as economists claim it should be on the basis of theoretical hypotheses. Multilateralism seems to be in poor condition, as evidenced by the failure of the WTO round in Doha (2006). Scholars refer to these resistances as the "mystery of the missing trade" (Trefler, 1995: 1029). Beyond the existence of some formal barriers to trade, such as transport costs, informal trade barriers survive as well. As Deardorff (2001) and Rauch (2001) posit, intangible

[22]In other words, I analyze only the formation of the first PTA for each pair of countries. Dyads drop from the dataset after having signed the first PTA.

factors are deeply involved in international trade. This chapter has tried to show that resistance to economic integration can be partially reduced by institutional similarity.

The main findings can be summarized in five points. First, the results support the argument that institutional similarity matters for the formation of PTAs. In all the regressions, the variables that capture similarity in the domestic institutions have a positive sign and at least three of them have turned out to be statistically significant. Second, the effect of similarity in political transparency on regional integration has proved to be stronger than the impact of political accountability on the formation of PTAs. Third, institutional similarity plays an important role in regional integration only if combined with high quality institutions. Thus, these two elements must be jointly included in models that study economic cooperation in general, and PTA formation in particular. Fourth, the impact of institutional similarity on the formation of plurilateral (or regional) trade agreements is larger than on the formation of bilateral trade agreements. Finally, there is no strong evidence that the depth of regional integration is sensitive to institutional similarity.

Chapter 4

The New Regionalism and Policy Interdependence

This chapter has been written with Andreas Dür, University of Salzburg. Therefore, differently from the other chapters I will use "we" rather than "I".

Introduction

A casual overview of major trade policy developments over the last two hundred years suggests that preferential trade policies are contagious.The Cobden-Chevalier agreement between France and the United Kingdom (1860) was the first of a large number of preferential trade agreements that were concluded in the second half of the nineteenth century (Lazer, 1999; Pahre, 2008). In the interwar years, major European powers moved in parallel to establish sizeable preferential trading systems with their colonies. The 1960s saw the spread of regional trade agreements that clearly were a response to the creation of the European Economic Community (1958). Finally, as already said, since the early 1990s many countries across the world have adopted preferential trade policies, leading to the sharp increase in the number of preferential agreements in existence that is known as the new regionalism (Mansfield and Milner, 1999).

Several potential explanations exist for these developments. For one, the two previous chapters showed that political and economic transparency, institutional similarity, and the combination of these two factors are important drivers of the new regionalism. Another important body of literature argues that the proliferation of preferential trade agreements may be the result of a "domino effect".[1] In this view, the negative externalities from the conclusion of an agreement make excluded countries scramble for new agreements (Gruber, 2000; Lazer, 1999; Manger, 2005a; Mansfield, 1998; Oye, 1992). In short, a variety of explanations exist that at first sight provide plausible accounts of the empirical observations outlined above.

In this chapter, building on this last explanation, we argue that the proliferation of preferential trade agreements over the last two decades has been a result of excluded countries trying to avoid the negative consequences of trade diversion. What we add to this explanation is a logic that makes explicit the political processes at the domestic level that impel the domino effect. The puzzle is that before facing commercial discrimination, excluded countries are satisfied with the status quo, but once they feel the negative effects of a preferential trade agreement from which they are excluded, their trade-policy orientation changes. What are the underlying domestic political processes that drive this change in trade-policy orientation? The response of what we call the protection-for-exporters argument is that exporters lobby more against certain losses of foreign market access than in favor of potential opportunities, hence causing a shift in the balance between exporters and import-competitors once a country faces discrimination abroad. A shift in the balance between these two interests, in turn, should lead to changes in the trade policies pursued, that is, governments should now implement trade policies whose objective is the protection of exporter interests.

We test the protection-for-exporters argument against alternative explanations in a quantitative analysis of the proliferation of preferential trade agreements. The findings provide strong support for our argument. The

[1]For this term, see Baldwin, 1993; 1997.

choice by different countries to enter preferential trade agreements is indeed interdependent; and the interdependence increases as the negative externalities from existing agreements increase.

The chapter hence is of relevance to the literature on regionalism in the world economy (Braun and Gilardi, 2006; Franzese and Hays, 2008; Gleditsch and Ward, 2000). At the same time, we also make a contribution to a growing literature on policy diffusion and policy interdependence (Jensen and Lindstaedt, 2009; Neumayer and Plümper, 2009). Increasingly, scholars of international political economy realize that dyads do not act in isolation, and try to model the interdependence among them. Policy interdependence, for example, has been shown to be a driving force of the diffusion of bilateral investment treaties (Elkins *et al.*, 2006). We add to this literature by taking seriously a recent call for accepting that "space is more than geography" when operationalizing the impact that a dyad's decision to pursue a trade agreement has on other dyads (Beck *et al.*, 2006). In particular, we introduce a new way of measuring the degree of dependence among two observations, which includes attention to extra-dyadic relationships.

In the following, we first briefly outline the existing literature on the spread of preferential trade agreements. This discussion shows that a large number of different explanations for the new regionalism exist. We then establish our argument that focuses on attempts at maintaining and regaining market access as driving factor behind the sharp increase in the number of preferential agreements over the last twenty years. After discussing our data and approach to testing the argument, we present our empirical findings. In the conclusion, we stress the implications of our findings for studies on the new regionalism and policy interdependence. We also suggest that the mechanism that we propose here may not be limited to the trade realm, but may capture the spread of policies and the contagious effect of international cooperation in other fields.

4.1 The Protection-For-Exporters Argument

The argument that we set out to explain the spread of trade agreements over the last two decades builds on the reaction-to-discrimination logic and in particular on the "domino theory of regionalism" (Baldwin, 1993). At its most general, this theory postulates that preferential trade policies hurt outsiders by way of trade diversion.[2] Outsiders then feel compelled to react, either by joining a preferential trade agreement or by setting up an alternative one. Over time, this leads to the spread of preferential trade agreements.

This idea has been developed in most detail by Baldwin (1993; 1997). Baldwin starts from a political economy model according to which governments maximize a function of interest-group donations, general welfare, and support from groups that oppose membership for non-economic reasons. To explain why governments react to losses rather than maximize gains, Baldwin assumes that losers from policies lobby more than do winners because winners cannot profit from their gains in a competitive setting. He legitimizes this assumption by arguing that if returns to investments increase in a sector, more firms will be attracted to that sector, increase competition, and cause gains to be lost again. Consequently, there is no incentive to lobby for gains; exporters will become active only when facing losses, such as those stemming from foreign preferential trade policies. This logic, however, does not apply to the many sectors with (relatively) high entry barriers. In these sectors, firms do not have to fear the short-term entry of challengers, irrespective of whether the industry is declining or profitable.

The argument that we propose resolves this problem. It assumes the existence of two trade policy constituencies, exporters and import-competitors. Exporters benefit from better foreign market access and import-competitors from continued protection of their sector against foreign competition. While

[2]For the concept of trade diversion, see Viner, 1950. A more recent discussion of trade diversion and other economic consequences of the creation of a preferential trade agreement is provided by Panagariya, 2000.

the direct link between trade barriers and imports ensures that import-competitors are highly mobilized in defense of their interests, we expect exporters in most circumstances to be politically inactive. The reason is that they face uncertainty with respect to the potential benefits from engaging in lobbying for better foreign market access. For one, exporters tend not only to have little information about, but also to underestimate the potential opportunities they may be missing in a foreign market (Srinivasan and Bhagwati, 2001: 14). Moreover, even if they are aware of a missed opportunity, they face uncertainty about the willingness of a foreign government to reduce its trade barriers in exchange for concessions.[3] The uncertainty is even further enhanced by the fact that trade negotiations tend to go on over quite a substantial time, making it challenging to know the competitive situation of an exporter at the time the agreement enters into effect. As a result, it is difficult for an exporter to predict whether she or rather another exporter from the same country will reap the potential benefits of better foreign market access. In the case of plurilateral or multilateral agreements, the benefits of trade liberalization may even go to an exporter from another country.

In short, uncertainty strongly inhibits exporters' lobbying for gains. Only few exporters consequently manage to become politically active, ensuring that the balance of domestic interests is biased in favor of import-competing interests. It seems reasonable to expect that a government, independent of whether it is democratically legitimized or not, will take into account this balance of domestic interests when formulating its trade policy, even if domestic interests do not perfectly translate into government policies.[4]. The balance of domestic interests is an important consideration for decision-makers because organized interests that are dissatisfied with government policy will try to mobilize the public, thus threatening decision-makers' grip on power. The

[3]There is also the uncertainty of whether they will be able to convince their own government to pursue their preferences, but this uncertainty is shared by import-competitors.

[4]This assumption is common to a large number of studies in the field of International Political Economy (Chase, 2005; Gilligan, 1997; Milner, 1988)

expectation hence is for governments to pursue policies that satisfy import-competing interests, even if they do not close their markets completely; there always are some offsetting pressures from the broad public that cares about economic efficiency and producers who depend on imports. For the puzzle at hand, the prediction is for few regional trading arrangements to come into existence under these circumstances.

Exporters' incentives to mobilize are substantially different when facing losses, caused, for example, by the creation of a preferential trading arrangement among foreign countries that leads to trade diversion.[5] In this situation, rather than having to invest in monitoring foreign markets to gather information about export opportunities, they can simply react in a fire-brigade manner to any losses they experience from the trade policy choices of foreign countries. Moreover, they can be quite certain about the consequences of their lobbying activity. If they manage to achieve the re-establishment of the market conditions that existed before the creation of the preferential trade agreement, they should be able to regain their share of that market. Exporters' uncertainty of lobbying against losses, consequently, is lower than the uncertainty of lobbying for gains. The expectation derived from this argument is that a stronger lobby effort by exporters should be visible in response to losses than in pursuit of potential gains.[6]

Substantial anecdotal evidence exists for such changes in the balance of domestic interests in response to discrimination abroad. For example, in Japan import-competing interests, which oppose preferential trade agree-

[5]The effect that we set out here does not depend on trade diversion exceeding trade creation, since the benefits from trade creation will accrue to a set of actors within the preferential trade agreement.

[6]The same expectation of mobilization against losses can be derived from prospect theory. See Fannis, 2004 and Kahneman and Tversky, 1979. According to prospect theory, actors are more willing to engage in risky behaviour if they expect losses. While in this paper we cannot empirically test prospect theory against our uncertainty-based argument for lobbying against losses, we find the latter approach theoretically more appealing in the context of other actors (governments) that are assumed to act rationally.

ments, dominated trade politics throughout the 1990s. Their influence was only broken when Japanese exporters mobilized in response to losses abroad (Manger, 2005a; Solis, 2008). In particular, they became active in lobbying against discrimination in Mexico and Chile, two countries that had signed agreements with both the United States (U.S.) and the EU. In Mexico, similarly, while import-competing interests dominated throughout the 1980s, this changed in response to the discrimination that emanated from the conclusion of the U.S.-Canada Free Trade Agreement in 1988 (Gruber, 2000: 95-121).

To the extent that governments are receptive to such changes in the relative balance of different interests in a country, the mobilization of exporters should lead to a shift in the country's trade policy. Now not only being attentive to the interests of import competitors, but also concerned about the protection of exporter interests, the country should enter into negotiations for a trade agreement with the country in which exporters face losses of market access. In the cases presented above, Japan concluded preferential trade agreements with Mexico (2004) and Chile (2007), and Mexico joined the U.S. and Canada in the creation of the North American Free Trade Agreement (1992). The strength of the protection-for-exporters effect depends on the amount of trade diversion that an agreement between two countries causes for an excluded country. The larger the trade diversion, the more politically active exporters should become, and the more eager the government of an excluded country should be to sign an agreement with the member country in which it faces discrimination. The argument thus can be formulated in form of the following hypothesis:

Hypothesis: The probability of a preferential trade agreement between two countries increases as the number of preferential agreements in which each of them participates and the discriminatory trade effects of these agreements increases.

To clarify this hypothesis, preferential trade agreements should not have an effect on the trade policy choices of third countries unless they generate

trade diversion. If we were to see that preferential agreements spread to countries that do not suffer from trade diversion, this would be an indication that an alternative diffusion mechanism is at play, a question that we take up below.

Any explanation relying on a domino effect begs the question of what the initial stimulus for the domino effect is, that is, what makes the first domino piece fall. Many reasons have been mentioned for the creation of a preferential trade agreement (Pomfret, 2001: 326-40). The explanation that is most in line with the protection-for-exporters argument is that in some cases, governments may be able to design an agreement that imposes costs on third countries rather than domestic import-competing interests (Grossman and Helpman, 1995: 680). In such a case, in the absence of opposition from import-competitors, governments may find it beneficial to conclude an agreement. An initial agreement may also come about between adjacent countries, as in such a case exporters' uncertainty about the potential benefits of trade liberalization is likely to be smallest. For some of the initial agreements, an explanation may also require consideration of exogenous factors, such as the geopolitical interests of countries.

Countries could also be expected to conclude preferential trade agreements because they expect to benefit from the external effect that we describe here. In fact, there are some historical examples of countries using preferential trade agreements to put pressure on third countries. Some evidence, for example, implies that the Asian and Pacific countries may have used the threat of preferential liberalization as part of the Asia Pacific Economic Cooperation (APEC) to force the EU into accepting the conclusion of the Uruguay Round (Richardson, 1993). The empirical record, however, suggests that in most cases decision-makers do not anticipate the external consequences of a preferential trade agreement. In some cases, they even were surprised by these effects. Few people, for example, predicted that the deepening of European integration in the 1980s would have such a major pull effect on third countries, leading to the creation of the European Economic

Area and the negotiation of a series of Mediterranean agreements. Hanson (1998) suggests that in general little attention was given to the external aspects of the Single Market Program.

An aspect of the protection-for-exporters argument that we have ignored so far is why a member country of a preferential agreement should accept the conclusion of a trade agreement with an excluded country. As the member country recently concluded a preferential agreement, its domestic interests should be unlikely to lobby in favor of another agreement. Import-competitors will be particularly sensitive about a further agreement at a time when they suffer from the consequences of the initial agreement, while exporting interests will be preoccupied with exploiting the new market opportunities. Our argument is that the member country will accept an agreement only if its exporters face discrimination in the excluded country and hence are also politically active (the inverted logic) or if the excluded country is so eager to reach an agreement with the member country that it is willing to make major concessions. Although we have formulated our argument using the example of bilateral agreements, the logic also applies to plurilateral preferential agreements. For exporters in third countries, a plurilateral agreement has a similar effect as a bilateral agreement, with the only difference being that it threatens access to several markets at the same time. A plurilateral agreement between countries A, B, D, and E therefore is likely to have a major pull effect on excluded country C, if the latter faces discrimination in at least one of the member countries. The precise reaction of country C to this plurilateral agreement will depend on its export interests. If it only faces discrimination in A, it will conclude a bilateral agreement with that country.[7] If it faces discrimination in more than one market, however, it may decide to join the existing agreement.

What we do not consider in this paper is that a country may react to discrimination in ways other than signing a trade agreement with one or sev-

[7]This option is not available if the existing agreement is a customs union, as is the case for the EU.

eral of the member countries of a preferential agreement. For one, it may threaten retaliation against countries that engage in preferential trade policies. When the European Union moved towards a deepening of integration in the late 1980s, the U.S. responded with threats to all proposals that had the potential of imposing costs on its exporters. The Deputy Secretary of State, John C. Whitehead, for example, referred to the U.S.'s "potent retaliation ability", which it may use to counter discrimination in the EC.[8] Such threats can only be used by structurally powerful countries, however. Weaker countries responded to the Single Market Program with requests for bilateral agreements, a response that we capture with the argument presented here.

A second possible reaction to discrimination is a call for multilateral trade liberalization. Again the U.S. reaction to European integration best illustrates this tactic. The creation of the European Economic Community in the late 1950s caused concern among American exporters. Instead of signing a preferential agreement with the new trading entity, the U.S. used the Kennedy Round of world trade negotiations (1964-67) to reduce the discrimination resulting from the European move. Finally, a government may decide to compensate exporters that face costs from trade diversion by way of a subsidy. World trade rules, however, impose strict limits on the use of subsidies; moreover, governments violating these rules have to fear the imposition of countervailing duties, which are explicitly allowed by WTO rules.[9] Disregarding these alternative tactics, which may all be driven by the aim of protecting exporter interests in the face of foreign discrimination, leads us to underestimate the external effect of preferential trade agreements.

4.2 Data and Operationalization

While a few qualitative case studies have shown the plausibility of the argument about countries responding to discrimination from preferential trade

[8]Quoted in National Journal, 29 October 1988, 2729.

[9]Countervailing duties can also be imposed by, and against, countries that are not members of the WTO.

agreements, only very few studies have tried to quantitatively test the idea.[10] What is more, the existing quantitative studies are characterized by a series of shortcomings. Early quantitative studies, for example, did not explicitly model the spatial interdependence at the heart of the theoretical argument. More recent studies that do so either restrict the analysis to a small sample of countries or use a very rough proxy for the potential trade diversion caused by an earlier agreement.[11] By establishing an authoritative list of trade agreements, designing a test that captures the trade diversion logic that underlies our argument as closely as possible, controlling for alternative diffusion mechanisms, and cross-checking our results while treating the EU as a single actor, we substantially go beyond this literature with respect to both data and operationalization.

Before starting the description of the main variables and in particular of the spatial term, Figure 4.2 shows the value of the Moran index for each country in the world. Specifically, dark clusters are regions in which there are countries that have signed a large number of PTAs and that they are surrounded by other countries that have signed several PTAs. This is the case of Europe (plus Russia), part of Africa, and part of Latin America. Thus, as appear clear, there is strong evidence of the presence of spatial correlation among countries, *i.e.* observations that are close one another spatial are correlated.[12]

The dependent variable in our analysis is the number of years since 1989 that two countries have gone without signing a preferential trade agreement. We opted for the year of signature rather than the year of entry into force of an agreement, as signing an agreement is an important indication that governments respond to exporter lobbying. The year of signature is also im-

[10]Among the few quantitative studies are Egger and Larch, 2008; Mansfield, 1998; Rieder, 2006.

[11]Rieder, 2006 restricts the analysis to 25 developed countries and Egger and Larch (2008) rely on distance as a proxy for trade diversion.

[12]The Moran index has a value of .28, indicating that spatial correlation among countries in the dataset is statistically significant at 99 per cent level.

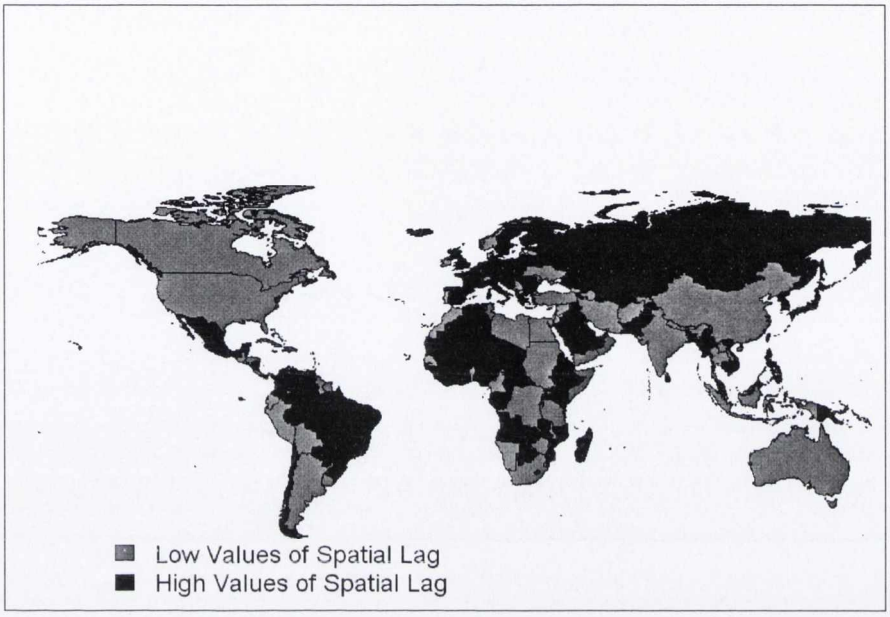

Figure 4.1. Spatial correlation of the number of preferential trade agreements as in 2007.

portant for the effect that agreements have, since it is in this moment that exporters in third countries should become worried about the expected negative consequences for them.

We do not consider second or third agreements signed between two countries.[13] This is a significant restriction especially for European dyads, many of which have participated in a stepwise deepening of integration. In addition, many bilateral agreements between the European Union and third countries across Europe were later converted into accession treaties. All Central and Eastern European countries, for example, signed bilateral free trade agreements with the EU in the early 1990s. As a result of our decision to limit ourselves to the analysis of the first agreement between two countries, we fail to consider the accession of ten of these countries to the EU in

[13]Mansfield *et al.* (2002: 494) took the same approach of excluding "agreements strengthening or superceding an existing PTA".

2004. While such a deepening of integration can have effects similar to those captured by our theoretical argument (and can be a reaction to preferential trade agreements among third countries), we decided to exclude these cases from our analysis to secure unit homogeneity, as the political economy of deepening an agreement may be different from the political economy of an initial agreement. More generally, by opting for a dichotomous dependent variable, we abstract from the fact that some preferential agreements are more far-reaching, and hence potentially more trade-diverting, than others.

Our database also includes all agreements effectively implemented between 1945 and 1989 that were still in existence in 1990. The reason for this is that the decision to limit ourselves to the analysis of the first agreement between two countries requires us to drop country pairs from the analysis that already formed part of an effective preferential trade agreement in 1990. We do not consider a few agreements that formally were in existence in 1990 but had not been effectively implemented. Examples are the Latin American Integration Association, which did not lead to any significant preferential tariff reductions, and the Economic Community of Central African States (ECCAS, 1983), which was suspended right after having been signed because of military conflict in the area. Such agreements, which only exist on paper, should neither contribute to the domino effect we are interested in nor inhibit participating pairs of countries from signing new agreements. The agreements that we consider to be effectively implemented as of 1 January 1990 are: the EU; the European Free Trade Association (EFTA); the agreements between the EU and EFTA countries; the agreements between the EU and Cyprus, Israel, and Malta; the agreements between the U.S. and Canada and Israel; the Caribbean Community; and the South African Customs Union. The 238 dyads that participated in these agreements are excluded from the analysis.

4.2.1 Policy Diffusion: Protection for Exporters, Emulation, and Geopolitical Rivalry

The model that we estimate includes a spatial lag of the dependent variable, weighted by the competitive distance between two countries, several alternative spatial lags, and control variables for both the dyad under consideration and potential external shocks. We thus estimate the following equation:

$$y_{ij,t} = \beta_1 X_{ij,t-1} + \beta_2 W y_{ij,t-5} + \epsilon_{ij,t}. \tag{4.1}$$

where $y_{ij,t}$ is the number of years without a preferential trade agreement between two countries, β_1 and β_2 are the coefficients, X is a vector of control variables, $Wy_{ij,t-5}$ is a vector of spatial lag terms, and $\epsilon_{ij,t}$ is the error term. In line with earlier research, we estimate this equation with a Cox proportional hazards model, with standard errors adjusted for clustering on dyads.[14] The advantage of using the Cox model, among the various survival models on offer, is that it does not require us to make assumptions about the shape of the underlying survival distribution (Golub, 2008) makes a strong case for the advantages of the Cox model as compared to parametric models such as Weibull and Gompertz. As is common practice in recent research on the statistical analysis of panel data with a binary dependent variable, we base significance tests on Huber (robust) standard errors (Beck, 2008: 486). These standard errors can take account of possible heteroskedasticity (serial correlation) or intra-group correlation of the data.

The main independent variable is an $N \times N \times t$ spatial weight matrix. A spatial weight matrix measures the impact of a policy change in a dyad on all other dyads. It uses specific factors, such as spatial proximity or degree

[14]Survival analysis is the appropriate approach because we are dealing with right-censored data. See also Beck, 2008. The study by Elkins *et al.* (2006) on the diffusion of bilateral investment agreements is also based on the Cox model. Darmofal (2009) provides an extensive analysis of the use of survival models with spatial effects.

of economic interdependence, to weigh the importance of a policy change in one unit for other units. In our case, the policy change is whether a dyad signed an agreement between one and five years ago. The variable is lagged by one year to avoid simultaneity bias. This may lead to an underestimation of the spatial effect, if countries already react to other countries' announcement of negotiations of preferential trade agreements. An example of this would be Bolivia that currently is reluctant to sign a free trade agreement with the EU, but may still jump on the bandwagon of other Andean countries signing trade agreements with the EU as it fears exclusion from these agreements. With our operationalization, if the EU signs agreements with all four Andean countries at the same time, we fail to capture the policy interdependence that shaped the outcome. The reason for the five-year cut-off point is that after some time, the external effect of a preferential trade agreement should disappear, with exporters either having been successful in convincing their government to reach an agreement with the members of a preferential trade agreement or having adapted to the new situation.[15] In 1990, consequently, the only agreements that enter on the right-hand side of equation 1 are the U.S.-Canada (1988) and U.S.-Israel (1985) agreements. In 2007, by contrast, all agreements signed between 2002 and 2006 are considered to have an impact.

We weigh the influence of the policy change on other dyads in a way that as closely as possible approximates the theoretical logic underlying the protection-for-exporters argument. Our hypothesis leads us to the expectation that the pressure on excluded country C to respond to a preferential trade agreement between countries A and B (D, E, ...) by signing an agreement with A should depend on the amount of trade diversion it faces in A. The amount of trade diversion, in turn, is mainly determined by the amount of exports from C to A and the degree of competition between the exports

[15] As reported below, we check the robustness of our results when changing this value to three and seven years respectively. The five-year cut-off point is also consistent with the operationalization used by Egger and Larch, 2008.

of C and B in the market of country A.[16] First, the impact of a preferential agreement should be particularly severe for countries with major export interests in one of the member countries. The reason is that the larger the share of exports concerned, the larger the potential costs, and the larger also the political power of the exporters concerned. We use dyadic exports as a share of C's total exports to capture this effect. A potential problem with this is that export shares are partly endogenous to our argument. The share of exports of country C going to country A should decrease as the latter signs a preferential trade agreement with country B, at least as long as countries B and C are in competition on market A. We deal with this potential endogeneity problem by lagging the trade data by one year.

Second, the extent to which the exporters of the excluded country directly compete with those from a member country of a preferential trade agreement in the market of the other member country is an important determinant of trade diversion. We measure the degree to which two countries compete on the same market by disaggregating trade flows to the sector and then correlating the direction of trade flows. Specifically, We calculate the distance between countries according to their export products, using information from the World Bank's World Development Indicators (WDI) that describes a country's export mix. These indicators tap the value of exports in sectors such as food, fuel, agricultural raw materials, ores and metals, and arms. We calculate the correlation between countries for each year across seventeen such indicators. The result is a measure, ranging from -1 to +1, of the similarity between countries according to the products they export.[17] For computational reasons, we rescale it from 0 to 2. For example, the EU

[16]Trade diversion also depends on the height of trade barriers in the countries participating in the preferential trade agreement. Preferential trade agreements should impose higher costs on exporters in third countries, and thus lead to a stronger mobilization of export interests, the higher the tariff differential between insiders and outsiders. As trade barriers are very difficult to measure, we omit this variable in the present analysis. We also ignore the relative size of the two competing countries. This is partly rectified by the specific operationalization of the Trade and Competition variable introduced below.

[17]For a similar approach, see Elkins *et al.*, 2006.

should have reacted to the North American Free Trade Agreement by signing an agreement with Mexico, as it exports similar goods to that country as does the U.S. In fact, this is what happened in March 2000. That it did not sign an agreement with the U.S. also supports our logic, as the EU's exports to the U.S. do not compete with those from Mexico.

In form of a formula, the spatial weight for the undirected dyad AC is:[18]

$$Trade\ Compet._{AC} = min\left(\sum_{B,D,\ldots}^{n} \left[Exp._{AC} \times Competitor_{A;B,D,\ldots} \right], \sum_{B,D,\ldots}^{n} \left[Exp._{CA} \times Competitor_{C;B,D,\ldots} \right] \right) \tag{4.2}$$

where the competitive distance AC is greater than 0 if countries A and C are connected. In this formula, n is the number of agreements that country A (C) signed with countries B, D, and so on between one and five years ago.[19] We use the smaller of the two directed values as value for the undirected dyad.[20]

Figure 4.3 illustrates how this variable may change for a dyad by looking at the country pair Chile-U.S. Initially, the signature of the U.S.-Canada agreement (1988) and of NAFTA (1992) should have increased the pressure on Chile to sign an agreement with the U.S. In fact, shortly after the conclusion of NAFTA, there was talk about Chile becoming a member of that agreement (Haggard 1997, 40). At that time, however, the U.S. was not sufficiently interested in an agreement with Chile. Because of the small share of

[18]The spatial matrices have been calculated using the software MATLAB 7.0 employing a program designed by the authors for this purpose. Although frequently done in the literature (Franzese and Hays, 2008: 580), we do not row-standardize our weighting matrix because of theoretical reasons (we are interested in the absolute pressure on a dyad, independent of the pressure on another dyad) and because row-standardization may impact inference (Plümper and Neumayer, 2008: 16-20).

[19]The mean of this variable is .001 and the standard deviation is .04. Its minimum vale is zero and its maximum value is 8.91.

[20]Because of outliers, we use the natural logarithm of this variable in our models below. This does not change the results reported below, however.

U.S. exports going to Chile, even the agreements between Chile and EFTA and Chile and MERCOSUR did not entice the U.S. to pursue an agreement with Chile. Only when in 2002 Chile signed a trade agreement with the EU, a major competitor of the U.S., the pressure on the U.S. increased to an extent that made it willing to conclude an agreement with this South American country in 2003.

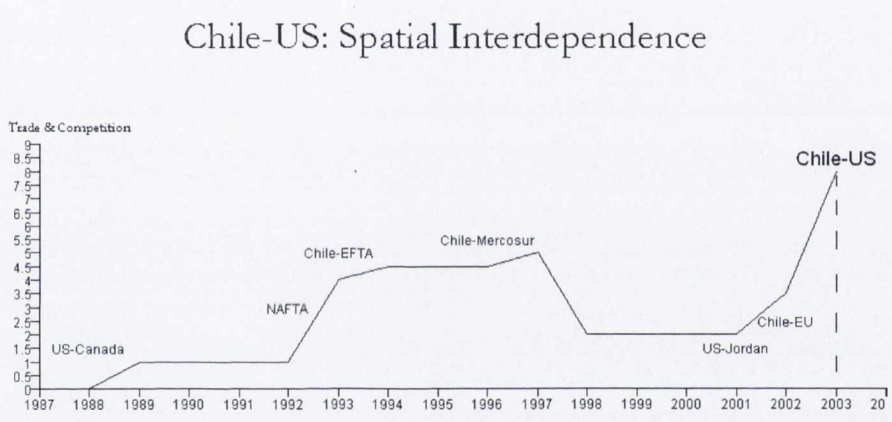

Figure 4.2. The spatial weight for the undirected dyad Chile-U.S.

As indicated above, besides reaction to trade diversion, several alternative causal mechanisms could drive the diffusion of trade agreements. In the empirical analysis below, we control for the possibility that diffusion is a result of emulation or security externalities. Emulation is most likely among countries that are culturally close.[21] The expectation thus is that the probability of a preferential trade agreement between countries A and C increases, the higher the number of preferential agreements that A and C participate

[21]The literature on policy diffusion distinguishes between rational learning and emulation. See Elkins *et al.* (2006: 831-32) and Simmons *et al.* (2006). We do not do so in this paper, as a clear measure of the "success" of preferential trade agreements, which is necessary for an evaluation of the learning argument, is missing.

in and the smaller the cultural distance between A and C. Building on work by Zachary Elkins, Andrew Guzman and Beth Simmons, we construct three different spatial weight matrixes measuring cultural proximity to capture this effect (Elkins *et al.*, 2006: 831). For all of these alternative diffusion mechanisms, we use the smaller of the two directed values to represent the undirected dyad. Each of the matrixes uses a different proxy for cultural distance: whether two countries share the same predominant language, predominant religion, and a common colonial past. We also control for the possibility of diffusion resulting from security externalities. To capture this effect, we calculate a spatial weight matrix that increases the probability of countries A and C signing an agreement if country B, with which C has had a military conflict since World War II, signed a preferential trade agreement with another country in the last five years. Finally, we include several control variables that have been already described in Chapter 1.

4.3 Findings

We first estimate a model including all dyads in the dataset, using a Cox proportional hazards model, with robust standard errors adjusted for clustering on dyads. The findings are strongly supportive of our argument (see the first column in Table 4.1). The coefficient for the Trade and Competition variable has the right sign and is statistically significant at the 99 per cent level. Some of the variables capturing the alternative diffusion mechanisms are also statistically significant. Countries seem to be influenced in their decision to conclude agreements by the agreements concluded by other countries with the same language and colonial heritage. Religion is the only of these three variables capturing the emulation argument that is not statistically significant at least at the 95 per cent level. Neither is the geopolitical rivalry argument supported by the empirical examination. In the post-Cold War world, it seems, countries do not react to agreements concluded by countries that may pose a military threat.

Figure 4.4 (on the left side) shows the effect of a change in the Trade and Competition variable from the minimum to the maximum level. This

graph illustrates that an increase in the value of this variable makes a pair of countries substantially more likely to conclude a PTA. Figure 3 (on the right side) plots the substantive effect of the spatial colony variable (the highest one among the variables capturing competing argument). This effect is smaller than for the control of corruption variable; over the 18 year period, it drops from 1 to 0.8, as compared to 0.2 for the Trade and Competition variable. Thus, not only Trade and Competition is statistically, but also its effect on the probability of forming a PTA is quite remarkable.

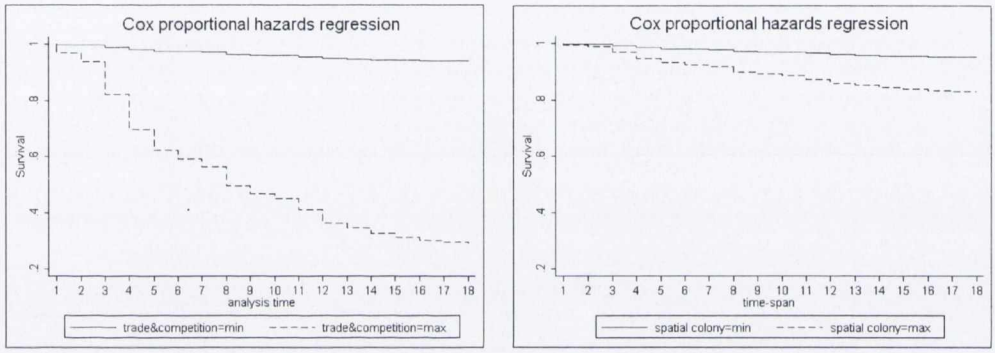

Figure 4.3. Survival estimates: comparing the protection-for-exporters and alternative diffusion mechanisms.

Table 4.2 shows the 20 dyads that display the highest value of the Trade and Competition variable. Only three of these pairs do not have a PTA or are not currently negotiating a PTA, *i.e.* Afghanistan and Belgium, Armenia and Switzerland, and Netherlands and the US. The reason why we do not see an agreement between Netherlands and the US is easy to explain. Only the EU, and not Netherlands alone, can sign a PTA with the US and this may be quite problematic to bargain due to the conflicting interests on several issues. Fourteen of the remaining dyads have signed a PTA during the period under investigation, whereas three of them are currently negotiating an agreement, *i.e.* Armenia and Belgium, Armenia and Germany, Burundi and France. Although this is not admittedly an orthodox way to show the power of prediction of a model, it helps to give an idea of which pairs of countries are affected the most by the *domino effect*.

Table 4.1. The impact of Trade and Competition on the formation of preferential trade agreements. Cox regression with robust standard errors adjusted for clustering on dyads. Notes: robust standard errors are in parentheses. ** significant at 1 per cent, * significant at 5 per cent.

Covariates	Main Model	Without north-north dyads
Trade and Competition	1.34** (.48)	1.58** (.42)
Spatial Language	.10** (.03)	.11** (.03)
Spatial Colony	.14** (.03)	.15** (.03)
Spatial Religion	-.04 (.03)	-.04** (.03)
Spatial Rivalry	.06 (.07)	.07 (.07)
Trade	.06** (.02)	.08** (.02)
GDP	.32** (.02)	.34** (.02)
GDP Growth	-.01 (.003)	-.01 (.004)
Alliance	.52** (.07)	.55** (.07)
Democracy	.52** (.07)	.14** (.02)
Trade Disp.	-1.68** (.5)	-.42 (.50)
Trade Disp. 3^{rd} Party	.01 (.06)	-.01 (.06)
WTO	.25** (.07)	.25** (.08)
WTO Round	.64** (.11)	.59** (.11)
Distance	-1.15** (.07)	-1.15** (.07)
Contiguity	-.76** (.17)	-.76** (.17)
Island	-.38** (.10)	-.38** (.10)
Colony	.26* (.12)	.27* (.12)
Language	-.05 (.16)	-.06* (.16)
Religion	.26** (.08)	.26** (.08)
No. of Obs.	222,956	222,956
Number of Failures	1595	1595
Prob $\geq \chi^2$	2319.65 (.00)	2322.56 (.00)

Turning to the remaining variables, many of those that have been shown to be important in previous research also turn out to be significant in this model, giving added plausibility to our findings. Looking first at the variables capturing economic conditions, as expected a pair of countries with a strong trade link is more likely to form a trade agreement. Furthermore,

Table 4.2. List of the 20 dyads that display the highest values of the Trade and Competition variable.

Dyad	Trade and Competition value	PTA
Afganistan-Belgium	.731	No
Armenia-Belgium	2.23	No (under negotiation)
Armenia-Switzerland	.458	No
Armenia-Germany	.608	No (under negotiation)
Austria-Poland	.460	Yes (1994)
Burundi-France	.437	No (under negotiation)
Bulgaria-Moldova	.468	Yes (2004)
Cezch Republic-Sweden	.384	Yes (1994)
Egypt-Saudi Arabia	.533	Yes (1994)
Finland-Poland	.922	Yes (1992)
Greece-Lebanon	.537	Yes (2003)
Malawi-South Africa	.569	Yes (1992)
Malaysia-Singapore	.583	Yes (2007)
Nicaragua-United States	.384	Yes (2004)
Netherlands-Poland	.732	Yes (1992)
Netherlands-Slovenia	.402	Yes (1997)
Netherlands-Turkey	.070	Yes (1997)
Netherlands-United States	.230	No
Netherlands-South Africa	.936	Yes (2000)
United Kingdon-Poland	.460	Yes (1992)

pairs of countries with relatively large economies are more likely to sign an agreement. By contrast, the previous finding that a lack of economic growth makes countries sign an agreement is not supported, with the effect being very small and not statistically significant (Mattli, 1999).

Security concerns also seem to play a role in the formation of preferential trade agreements, as countries that form part of the same alliance are more likely to sign a trade agreement. Moreover, democratic pairs of countries are more prone to conclude an agreement, thus confirming previous research (Mansfield *et al.*, 2002). This is an important confirmation of this earlier

finding, as the original study only had data up until 1992. Equally intuitive are most of the findings with respect to the geographic control variables. As expected, distance reduces the likelihood of an agreement. Moreover, islands are less likely to sign an agreement than other countries. Surprisingly, however, contiguous countries are less likely to form an agreement than countries that do not share a common border. The reason for this finding may be that contiguity does not add anything beyond what the variables distance and trade cover, both of which are correlated with contiguity.

Most of the variables capturing the influence of the international trading system on two countries' decision to conclude an agreement also have the expected impact. Countries are more likely to sign an agreement in parallel to negotiating at the WTO level. Moreover, two member countries of the WTO are more likely to conclude an agreement than pairs that include at least one non-WTO member. A little surprising is that a trade dispute between two countries makes them less likely to conclude an agreement (but this finding is not robust to the changes we introduce below). A finding that we could not replicate is that a trade dispute with a third party increases the likelihood of a country signing an agreement (Mansfield and Reinhardt, 2003). This variable is not statistically significant in any of the variations of the model. Finally, two of the three variables capturing the cultural distance between two countries are statistically significant. Overall, thus, this model provides major support for our reasoning.

We further examine the plausibility of the protection-for-exporters argument by tackling the observable implication that the reaction-to-discrimination effect should be stronger for North-South and South-South than for North-North pairs of countries.[22] There are two reasons for this expectation. On the one hand, trade barriers are higher in developing than in developed countries. Moreover, developed countries' trade barriers tend to be highest for imports of (labor-intensive) goods from developing countries. Both of these factors increase the potential for trade diversion from North-South and South-South

[22] *North* and *South* refer respectively to developed country and developing countries.

agreements. On the other hand, trade between developed countries is characterized by intra-industry trade, for which trade diversion may be less important. To test this observable implication, we estimated the model presented before excluding all North-North dyads (see the middle column in Table 1). While the results are very close to those presented before, and thus provide for an important robustness check, the coefficient on the Trade and Competition variable increases only slightly. An explanation for this finding may be that the greater depth of integration achieved in many North-North agreements offsets the impact of lower trade barriers on trade diversion. The finding may also be influenced by the fact that trade data for developing countries is less reliable than for developed countries. Again, Figure 4.5 shows the impact of the Trade and Competition and spatial colony variables on the probability of forming a trade bloc by using the survival curve.

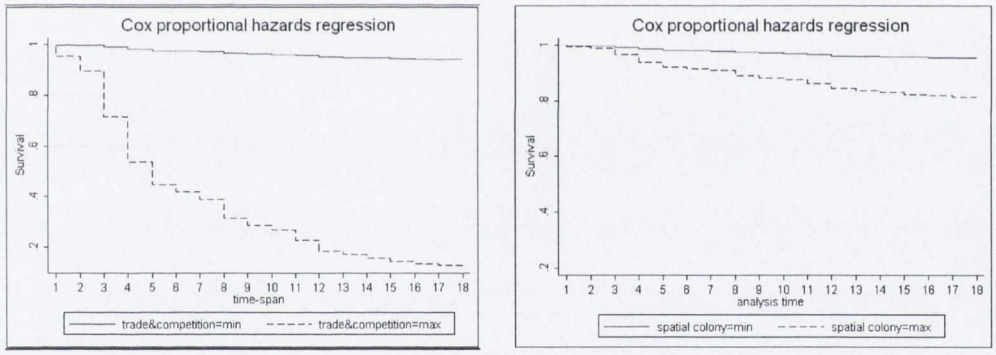

Figure 4.4. Survival estimates: comparing the protection-for-exporters and alternative diffusion mechanisms. Note: only North-South dyads and South-South dyads.

4.4 Robustness Check

We undertook a series of tests to examine the robustness of our results to changes in operationalization. First, we estimated a model in which we included both the spatially and temporally lagged and an only temporally

lagged dependent variable. The only-temporally-lagged variable is the sum of the number of agreements signed by the two countries prior to time *t*. Doing so serves two purposes. On the one hand, it allows us to assess whether diffusion is simply driven by the increasing number of preferential trade agreements that exist in the world, a finding that would run counter to our argument. On the other hand, this test permits us to check for potential endogeneity resulting from the inclusion of a lagged dependent variable as an independent variable in our model (Plümper and Neumayer 2008: 7). The findings presented in Table 1 are robust to these changes. The coefficient capturing the effect of the spatial lag, albeit smaller than in the models presented before, is still statistically significant at the 95 per cent level, and at the 99 per cent level if the competing diffusion arguments are excluded from the model.

Second, we estimated the models presented above including a dyad-level frailty term (Gamma distributed) to control for unobserved heterogeneity between groups (Box-Steffensmeier and Jones, 2004: 142). For all three models, the results are very similar to those presented in Table 1. Third, rather than taking the sum of the pressures on the two countries as in equation 2, we estimated the model using the smaller of the two directed values. It could be argued that when a small country faces strong pressure to conclude an agreement with a large country, the latter may not find such an agreement attractive unless it faces itself some pressure to conclude an agreement with the smaller country. In the case illustrated in Figure 2, for example, Chile was quite eager to conclude an agreement with the U.S. immediately after the signature of NAFTA, but no agreement came about because the U.S. failed to respond positively. The results are robust to this test, with the Trade and Competition variable remaining statistically significant at the 0.01 level. Fourth, we used the inverse of the geographical distance between A and B as a proxy for the amount of trade between the two countries. The advantage of this is that the quality of geographic data is very good, while data on dyadic trade flows is problematic. Moreover, distance has been shown to be a very important determinant of trade flows. This is a result of the fact that trade

costs increase with geographic distance. By relying on distance we also avoid potential endogeneity problems arising with trade flows. Implementing this: change does not change our results. Fifth, we estimated models in which we assume that preferential trade agreements have an impact on third countries for, respectively, between one and three and between one and seven years after their signature. These changes control for the robustness of our initial hunch of a five-year effect. In both cases, the results are similar to those reported above, with the main effect remaining statistically significant. Finally, following the suggestion of Thomas Plümper and Eric Neumayer (2008: 7) we include year controls in the model, without this changing the results.[23]

4.5 Conclusion

The protection-for-exporters argument that we have presented leads to the expectation that exporters increase their level of political activity in response to discrimination abroad. The resulting change in the balance of domestic interests makes countries pursue preferential trade agreements, leading to a domino effect. In this reading, the new regionalism is driven by countries responding to trade diversion. A country forms an agreement with another country if it competes on that market with third countries that already have preferential access. We have designed a quantitative test of this argument that captures the trade diversion logic as directly as possible. The findings are very supportive; the formation of preferential trade agreements is indeed an interdependent process and seems to be largely driven by countries responding to the negative externalities of existing agreements.

In future research, the present analysis could be extended in several respects. For one, it would be interesting to take into account the various other options that the governments of excluded countries may rely on to protect the interests of their exporters. For example, they may decide to form a

[23]Since with year controls our model would contain 40 covariates, in this test we dropped all the covariates that were not statistically significant in the main model, the variables related to the world trading system, and the variables that capture cultural distance.

rival agreement, rather than sign an agreement with a member country of a preferential trade agreement. The classic case for such a rival agreement is the formation of the European Free Trade Association (1960) in response to the creation of the European Economic Community (1958). Moreover, it would make sense to consider that some dyads may deepen their agreements in response to other dyads concluding agreements, and that the deepening of an agreement may have a similar effect as the signing of the initial agreement. The Single Market Program, for example, which led to the removal of remaining barriers to intra-European trade, arguably increased the interest among Mediterranean countries in signing a trade agreement with the EU.

Finally, it seems plausible that preferential trade agreements, and especially those that include investment provisions, threaten both trade and foreign direct investment flows. The North American Free Trade Agreement, for example, not only created problems for Japanese companies exporting to Mexico, but also for Japanese companies interested in investing in that country (Manger, 2005). Two extensions of the empirical analysis presented here would capture this effect. On the one hand, by looking at investment flows, it should be possible for a subset of countries to calculate the potential for investment diversion resulting from a preferential trade agreement. On the other hand, since investment diversion is most likely in cases in which an agreement includes an investment chapter, being able to specify exactly which agreements do so would help tackle this point. A future study thus may provide an even more comprehensive examination of the protection-for-exporters argument presented here.

The paper also has broader implications for the study of international relations and international political economy. It presents a causal mechanism that explains how the policies of one country can influence the balance of domestic interests in another country. An analogous effect could be hypothesized to be at work whenever the policies of a country have negative externalities for another country. More specifically, cooperation between two or among a few countries that discriminates against third countries should

have a comparable pull-effect as the one captured in this paper for the case of preferential trade agreements. The European Higher Education Area, which aims at making European higher education more attractive, provides an illustration of this point. In this case, by making some university systems more attractive for international students than others, cooperation among a subset of European countries had a strong pull effect on third countries that initially had not signed the Bologna declaration (1999). Also outside of the trade realm, the spread of international agreements thus may be driven by a similar logic to the one espoused here.

Chapter 5

Explaining Formation and Design of EU Trade Agreements

Introduction

What political factors explain the decision by the European Union to enter into a preferential trade agreement with a developing country? While the previous chapters analyze the entire set of countries, this chapter focuses on the most successful trade bloc in the international system, the EU, and on its foreign trade relationships. Indeed during the current wave of the new-regionalism, the EU has been central to the proliferation of preferential trade agreements (PTAs).[1] For instance, of the 109 notifications of PTAs to the World Trade Organization as of 1^{st} January 1995, no less than 76 were with the EU or between European partners (Pelkmans and Brenton, 1999). This EU emphasis on PTAs has been explained in part by the fact that rather than being limited to trade policy, bilateral agreements serve as crucial instruments of the EU's foreign policy (Brenton and Manchin, 2003; Messerlin, 2001). Specifically, EU bilateralism is the principal tool through which the EU shapes the structure of the international system in general, and the political and economic system of developing countries (LDCs) in particular. However, this is just one side of the story. From the perspective of LDCs,

[1]Here, the term "preferential trade agreement" and the term "bilateral trade agreement" are used synonymously.

several studies emphasize that EU PTAs may also act as a development tool (Woolcok, 2004; Whalley, 1998; Winters, 1995; Rodrik, 1989). Indeed, by joining a PTA with the EU, LDCs can gain access to one of the largest and richest markets, lock in political and economic reforms, and improve their competitiveness in the global economy.

Despite the magnitude of EU bilateralism and its importance for the international trade system, to date, most works have focused almost exclusively on economic drivers, such as economic size and level of economic development of LDCs (Pelkmans and Brenton, 1999). A number of recent studies on the EU have explored the role of key interest groups in the formation of PTAs (Aggarwal and Fogarty, 2007; Bechtel and Tosun, forthcoming; Dür, 2007). However, from the perspective of governance, the EU requires PTAs to serve as a means of successfully compelling LDCs to adopt and implement certain rules (Schimmelfennig and Sedelmeier, 2004). If conditionality is not effective due to enforcement problems, EU PTAs are lacking as instrument of foreign policy and as a tool of development. A vast body of literature (Svolik, 2006; Koremenos *et al.*, 2001; Rosendorff and Milner, 2001) suggests that cooperation problems may be mitigated by states' domestic features and by the design of the arrangement. Accordingly, the EU's decision to pursue PTAs is affected not only by internal factors, such as the political conflict among interest groups in Brussels, but also by domestic features of LDCs that in turn influence the design of EU bilateralism. As EU Trade Commissioner Mandelson has noted, the EU must construct ambitious bilateral trade agreements "with carefully chosen partners" (2006: 2).

In line with previous *large-n* studies on PTA formation (Mansfield *et al.*, 2002; 2008), I address empirically the rationale for the EU's bilateralism with a focus on the role of domestic institutions. Using political economy perspective, I argue that political and economic transparency in a LDC affects both the likelihood of forming a PTA with the EU as well as the design of the trade agreement. First, it influences PTAs formation because high transparency makes it easier for the EU to monitor the fulfillment of the

agreement. Second, it affects the design of the PTAs, by leading to high degree of discretionary provisions, allowing the EU to correctly identify causes of deviations on the part of LDCs. This argument, based on a combination of information revelation and flexibility due to improved monitoring, is tested using a newly compiled dataset covering 138 developing countries from 1990 to 2005.

The chapter is structured as follows. The following section develops the theoretical framework. The third section derives two testable hypotheses. The fourth part introduces the empirical model and the methodology used to test the hypotheses. The fifth section presents the empirical results. The sixth section contains robustness checks. The final section draws some conclusions.

5.1 Background

5.1.1 EU regionalism and Conditionality in Trade Policies

The new wave of regionalism features arrangements that involve not only the reduction of barriers and what is generally defined as merchandise trade, but also arrangements that regulate trade-related areas. Agreements on issues such as services, investment, intellectual property, and temporary movement of labor are becoming common in PTAs. In this regard, the EU has been the most important driver. In a broad sense, the EU offers access to its large markets for goods in exchange for access to service markets in LDCs, the LDCs' acceptance of rules governing investment and intellectual property rights, and their improvement of human rights (Global Economic Prospect, World Bank, 2005). In the literature this is known as a conditional agreement. Examples of conditionality include the Copenhagen conditions, in which the EU required former communist countries to achieve stability of institutions guaranteeing democracy, human rights, and minority rights, to create a functioning market economy, and to cope with competitive pressure and market forces (Grabbe, 1999) and the Barcelona Process, which set the

rules of the economic cooperation between the EU and the Mediterranean countries (Baert, 2003).

As recent studies have pointed out (Maur, 2005; McQueen, 2002; Holland, 2002), political conditionality has become one of the key issues between the EU and LDCs. The EU demands greater accountability by having the LDCs adopt of a series of related principles that are then evaluated by the EU, such as good governance, democracy, human rights, and a free market (Holland, 2002: 112). Conditionality can be categorized in several ways: between political and economic aspects; internal and external supervision; and positive and negative sanctions. Political conditionality links rewards with both the expectations and the executions of policy in an LDC that promotes the goals of democracy, human rights, and good governance. Economic conditionality links rewards with the adoption and promotion of specific microeconomic and macroeconomic policies, such as structural adjustment programs and liberation. Typically, both political and economic conditionality are intensively monitored by the EU (Holland, 2002: 119). Positive and negative forms of conditionality assure benefits for future required action with the threat of disciplinary sanctions in the case that specific policy guidelines are broken.

The underlying rationale for the EU using political and economic conditionality in negotiating bilateral trade agreements with third countries has three aspects. First, the EU aims to promote its rules with the partner country, dictating a hegemonic harmonization of regulatory policies (Baldwin, 2000; Lawrence, 1995). As the former EC Trade Commissioner Pascal Lamy (2004) puts it, "we always use bilateral trade agreements to move things beyond WTO standards. By definition, a bilateral trade agreement is WTO-plus" In other words, the EU exports its own designed policies to gather bargaining power vis-à-vis the US at a multilateral level, *e.g.* in a WTO round. The competition between the US and the EU on regulatory liberalization has been recognized by Zoellick (2001; 5), former US Trade Representative, who argues that "[free trade agreement] extends beyond the market because each of these agreements is setting the rules for the future.

[...] The rules others (read the EU) are making without us (read the US) will determine the future."

Second, by exporting its own regulatory standards, the EU strengthens the international competitiveness of its firms. Specifically, the application of EU regulations by a third country creates a competitive advantage for European producers, making it more difficult for other producers, *e.g.* US producers, to sell their products. In this regard, the European Commission (2001) strives "to promote [...] regulatory approaches [...] compatible with international and European practices in order to improve market access and competitiveness of European products."Third, the EU aims to stabilize individually unsettled neighbors by connecting them more closely to the European bloc, and to encourage regional stability through integration (Maur, 2005: 1578). Good governance, for instance, has become a fundamental prerequisite for sustainable development (Holland, 2002: 121).

5.1.2 LDCs: Credibility and Adjustment Costs

Despite some limitations on the choice of their own domestic policies, there are several benefits for an LDC when concluding a trade agreement with the EU. First, and most importantly, forming a bilateral trade agreement with the EU enhances their policy credibility (Whalley, 1998; Winters, 1995). According to Winters, "entering a PTA entails political sunk costs, and if it requires liberal or sound policies to make sense, entry provides the government with a signal device, for only a government with liberal intentions would sign" (2002: 133). Thus, in the presence of asymmetric information about the government, a PTA with the EU can improve credibility (Gray, 2009). Although the benefits of North-South PTAs are still a matter of debate among scholars, there is a wide consensus that by signing these agreements LDCs bolster their reputation in the global economy and send a positive signal to investors and companies (Ethier, 1998; Rodrik, 1989) Moreover, Maur (2005: 1578) argues that improving their existing regulatory framework using the EU template helps LDCs to correct market failure so that they are able to

cope at lower costs in the international system. Finally, according to McQueen (2002: 1383), an agreement with the EU can significantly dampen transaction costs and grant greater certainty of a regulatory framework in trade, not only with the EU, but also in trade with the rest of the world.

Increasing policy credibility and political and economic certainty and decreasing transaction costs are necessary conditions to attract investment and multinational corporations. In turn, attracting foreign capital and foreign companies allows LDCs access to knowledge, markets, and networks. In particular, financial support and technical assistance may bolster reforms resulting in a further improvement of credibility and political and economic certainty. Recent studies (Chakrabarti, 2001; ; Globerman, 2002; Medvedev, 2006; Velde and Bezemer, 2004) have indeed shown that PTA membership is associated with a positive change in net FDI inflows and financial aid and that this positive change is stronger if an LDC enters a bilateral trade agreement with a developed economy. For instance, according to Benedict de Saint-Laurent, director of ANIMA, a network of inward investment agencies for Mediterranean countries, political and economic partnership with the EU has prompted economic, financial, and fiscal reforms in these countries, which opened up their economies significantly (Economist, 12^{th} - 18^{th} July 2008, page 75).

According to the above explanations, both the EU and LDCs have a clear preference for forming a PTA. However, carrying out the reforms that the EU demands through political and economic conditionality involves adjustment costs, and it may be reasonably expected that not every LDC is always ready to sustain such costs. More specifically, under circumstances where product and factor prices adjust immediately and resources can be reallocated without cost, the optimal policy would be the simultaneous removal of all distortions. However, in the real world things are more complicated. Indeed, resources cannot be reallocated instantaneously without incurring costs in different sectors of the economy (Nsouli *et al.*, 2005: 741). Moreover, different markets adjust to policy changes and price signals at different

speeds. For instance, the response of the production structure, investment, and ownership patterns to economic reforms tends to be much slower than the response to financial policies and reforms in such areas as privatization, tax, and trade.

There are several adjustment costs that an economy may face due to conditionality-driven reforms.[2] First, since labor and capital are sector specific and thus not readily transferable between sectors, economic reforms may generate short-term costs in term of unemployment and income distribution effect (Little *et al.*, 1970; Gavin, 1996). Second, when the budgetary cost of reforms is high, as may be expected when an LDC wants to honor EU economic conditionality, a reform process may result in inflationary pressure (Dewatripont and Roland, 1992; 1994). Third, there is a general consensus that trade liberalization may lead to loss of government revenues, which are an important part of an LDC's budget, as trade taxes are reduced or eliminated (Baunsgaard and Keen, 2005). In turn, to maintain macroeconomic stability and to avoid a severe imbalance of payment, governments may be forced to cut social security and welfare or to raise taxes (Ebrill *et al.*, 1999). Thus, in this scenario, the majority of the population may show a status quo bias that makes reforms unfeasible at both political and economic levels.

To conclude, three considerations are crucial for understanding the negotiations between the EU and LDCs in the context of conditionality. First, adjustment costs are not trivial in the decision of a developing economy to join a PTA with the EU and may actually offset the benefits of joining it. For example, the negotiations between the EU and the African Caribbean Pacific countries (henceforth, ACP) to form a trade agreement have been deadlocked since 2002. This stalemate is due to the fact that the EU refuses to recognize regional differences across the ACP. Indeed, African and Pacific countries face significantly larger adjustment costs in meeting the EU's conditions than Caribbean countries do, making it difficult for them to join a

[2]For an extensive analysis of the relationship between adjustment costs and economic growth, see Agenor (2004).

PTA with the EU (Oxfam briefing paper, 2008: 6).[3] Second, conditionality-driven reforms introduce an element of *uncertainty* into a LDC's economic system, which may create political pressure for protection at home. For instance, 300,000 small Algerian firms currently at risk from the competition of European commodities are lobbying protectionist trade policy to their own government (Magharebia, 23^{rd} January 2008). Third, in relation to LDCs, a bilateral trade agreement with the EU is likely to produce important distributional effects, which creates concerns about the division of long-term gains from the agreement. For instance, case-studies on Mediterranean countries show that unskilled workers are often harmed by trade agreements with the EU (Francois *et al.*, 2005; Ghesquiere, 1998). In turn, groups that face major economic losses are likely to be highly mobilized against economic reforms that threaten their interests.

5.2 Transparency and Flexibility in EU Trade Bilateralism

While the EU wants to maximize conditionality, for an LDC there is a clear trade-off. On one hand, LDCs benefit from signing a PTA with the EU in terms of enhancing its credibility in the global economy. On the other hand, LDCs face high adjustment costs in carrying out the reforms that the EU dictates through economic conditionality. This trade-off creates two different, albeit related, problems: one problem concerns the enforcement phase of the agreement; the second problem concerns the design of the agreement. On one hand, knowing the LDCs' conflicting preferences, the EU will be willing to sign a bilateral trade agreement with an LDC only if the EU has reasons to believe that it will be able to effectively monitor the enforcement of its conditionality. On the other hand, facing uncertainty and adjustment costs, LDCs will agree to sign a PTA with the EU only if the design of the agreement allows them to sustain cooperation under circumstances when defection would be necessary because of excessively high costs of compliance.

[3]Fijian Minister Tavola stated that "as things stand now, the agreement is threatening to overwhelm our fragile economies" (cited in P. Dhondt, "Trade: Small Nations doubts about EU get bigger", Inter Press Service.

Each of these two problems are addressed and developed in further detail in the two following sections.

5.2.1 Credible Commitments and Transparency

As already said, the decision to form an agreement and the decision to fulfill an agreement are strongly connected (Bearce, 2003; Fearon, 1998). If the EU anticipates that impediments to monitoring and enforcing an agreement would make a cooperative agreement unstable, it has little incentive to negotiate (Fearon, 1998: 279), and thus such a cooperative agreement is unlikely to be formed (Leeds, 1999). In other words, in relation to the formation of an agreement with the EU, LDCs face a classic time-inconsistency problem that, in turn, creates a credibility problem. Indeed, in line with LDCs' previously described preferences, time-inconsistent policies would lead to higher utility than time-consistent policies. Specifically, LDCs that make an agreement with the EU to receive something, *i.e.* to gather credibility in the international economic system, against the promise of some domestic reforms according to EU conditionality would be tempted not to implement these reforms or to implement them only partially or slowly.[4]

Since a LDC has this incentive to renege upon a PTA, the EU must have instruments to detect and sanction opportunistic behavior. As a large body of cooperation literature claims, monitoring is as necessary and important as sanctioning, since "applying the proper sanctioning strategy is difficult when compliance is difficult to monitor" (Morrow, 1994: 387). More specifically, in the absence of the capability of monitoring and sanctioning,

[4]It may be argued that is more harmful for a LDC's reputation to not honor an agreement than to not sign it in the first instance. However, empirical evidence does not support this argument. Several studies (Anastasakis and Bechev, 2003; Steunenberg and Dimitrova, 2007) show that despite a strong wave of North-South agreements, there is a mixed record on compliance with such agreements. These findings seem to imply that LDCs prefer to secure North-South PTAs and to obtain the "seal of approval" from developed economies, especially the EU and the US, though they are not always ready to honor every clause of these agreements.

commitments would not be credible and the EU would have no incentive to reach an agreement with LDCs. We argue that transparency in economic and political institutions can provide the necessary monitoring and enforcement functions. When the political and economic system is transparent, governments will face greater difficulties hiding their actions and avoiding the cost of opportunism. Moreover, when government's preferences are unveiled by transparent political institutions, commitments may be credible even in the presence of time-inconsistency problems (Broz, 2002). Finally, transparency in governments' actions is an effective way to bolster the reputation of LDCs, which is crucial in the case of time-inconsistency problems (Rodrik, 1992).

Concerning EU bilateralism the importance of transparency in LDCs' political and economic institutions is supported by two further considerations. First, as explained in the Introduction, the EU has signed several bilateral agreements that constitute major instruments of foreign policy (Lamy, 2002). Thus, it is crucial for the EU to minimize the costs of monitoring this large number of PTAs. In other words, the EU has a strong interest in picking trading partners that are relatively easy to supervise. Second, the EU quite closely monitors the implementation of political and economic reforms pursued by its trade partners. For instance, the European Commission periodically produces Screening Reports that assess the progress of each trade partner in relation to the 34 sectors in which EU conditionality is specified. These controls are quite problematic to implement in countries with opaque institutions.

In sum, since signing a PTA with the EU creates a time-inconsistency problem for LDCs, I argue that in forming a PTA the EU is more likely to target countries that have high political and economic transparency relative to other developing countries. In highly transparent countries, indeed, the EU is able to monitor effectively whether or not these countries follow its forms of conditionality, which is assumed to be the main rationale for EU regionalism. Hence, the first hypothesis can stated as follows:

H1: The probability of the EU and a LDC forming a PTA increases with the political and economic transparency of this third country.

5.2.2 Flexibility

As explained above, in implementing the conditionality dictated by the EU, LDCs face adjustment costs that increase uncertainty and distributional problems at the domestic level. In turn, uncertainty and distributional concerns increase the strength of the support for protection at home. Previous studies (Koremenos, 2005) suggest that all trade agreements are high-uncertainty agreements, since they are subjected to dramatic changes in the distribution of gains from period to period.[5] We argue that uncertainty is particularly high in cases of EU bilateralism, since these PTAs are tightly linked to the implementation of important economic and political reforms. A recent body of literature (Fearon 1998; Kucik and Reinhardt, 2008; Koremenos, Lipson, and Snidal 2001) emphasizes the uncertainty that states face about the future costs of compliance in a repeated-game context. In line with these works, I claim that uncertainty may endanger the prospects for a bilateral trade agreement in the present, although potential benefits are high for both actors.

To overcome this problem, almost every international agreement allows members the opportunity to temporarily escape contractual commitments without incurring excessive retaliation from other partners or without be compelled to renegotiate costs once they have been forced to withdraw from the agreement. These escape clauses are often referred as flexibility provisions. According to Milner and Rosendorff (2001: 830), flexibility is "any provision of an international agreement that allows a country to suspend the concessions it previously negotiated without violating or abrogating the

[5]In addition to the uncertainty addressed herein, PTAs are usually quite sensitive to exogenous and unanticipated shocks, such as unexpected price or supply shift or technological changes in production. However, I do not discuss this further element of uncertainty, since it is not limited to EU bilateral agreements.

terms of the agreement." As such, flexibility may encourage states to enter into cooperative agreements and sustain those commitments over time (Kucik and Reinhardt, 2008; Slapin, 2009). *Efficient breach* clauses are also crucial in the case of EU bilateralism. Specifically, flexibility allows sustaining cooperation under circumstances when defection by LDCs' governments would be necessary because the costs of compliance are too high.

There are two main provisions that are used in trade agreements to allow flexibility: anti-dumping protection and especially safeguard clauses.[6] The problem with flexibility is that domestic politics constitute private information, as do domestic political changes. Thus, there could be an incentive for LDCs to misrepresent their private information in order to achieve a more favorable outcome in the bargaining process with the EU. If the EU perceives that monitoring the domestic politics of a third country would not be feasible or would be too expensive, it will not allow the inclusion of the flexibility clauses in the agreement in the first place. Indeed, the higher the political and economic transparency of the third states, the lower the asymmetries of information are and, in turn, the more the third state is credibly capable of communicating about "exceptional circumstances" that may occur domestically to undermine its capacity for compliance. In this favorable scenario, the EU is expected to form a bilateral agreement that includes flexibility clauses.

In sum, since LDCs sustain high adjustment costs and face uncertainty of distribution gains from period to period, it would be too costly to accept EU conditionality for LDCs without including efficient breaches in the agreements. However, I argue that the degree of flexibility included in a bilateral agreement is a function of political and economic transparency of LDCs. In-

[6]All EU trade agreements include safeguards (Woolcock, 2007: 7). There are three forms of safeguards. Permanent safeguards take the form of a reaffirmation of the EU's rights under the WTO. Transition safeguards are those that grant the EU (and its preferential partners) rights to impose import controls should the FTA lead to an unexpected rapid increase in imports during its implementation. Finally, there are special safeguard measures that the EU uses for sensitive sectors such as agriculture, and offers as special and differential treatment for developing countries.

deed, since LDCs have an incentive to overstate their costs of compliance at any time, in the absence of transparency the EU cannot distinguish between the use of an escape clause due to serious difficulties or due to opportunistic behavior. This follows naturally from Bayesian updating, as the sources of any given defection can be seen as coming from either forced emergency measures or opportunism, and is in line with previous studies in the field (Svolik, 2006).[7] Hence, the second hypothesis can be formulated as follows:

H2: The degree of flexibility of a PTA between the EU and a LDC increases with the political and economic transparency of this third country.

5.3 Empirical Analysis: Models and Case Selection

In the previous sections, EU bilateralism has been described as a process of selection related to domestic institutional features of LDCs. Due to this selection character of the causal mechanism, some estimation problems occur. Specifically, flexibility is observable if and only if a PTA is signed, thereby generating a selection bias problem. In order to deal with these issues and to test the previous hypotheses, I use the following specification of Heckman selection model known as a HECKIT (Grier *et al.*, 1994):

$$Outcome\ Equation : y_{ij,t} = \alpha X_{it} + \varepsilon_1 \tag{5.1}$$

$$Selection\ Equation : z_{ij,t} = \beta_1 Y_{ij,t} + \beta_2 W z_{i,t-1} + \varepsilon_2. \tag{5.2}$$

Where y and z are the dependent variables of the outcome equation and selection equation, respectively, X is a matrix of an LDC's features that influence the level of a PTA's flexibility, Y is the matrix of the explanatory

[7] In the case of opportunism, the EU can adopt certain forms of retaliation against the LDCs, *e.g.* reducing or suspending financial aid (McQueen, 2002), raising tariffs in sensitive sectors (Maur, 2005), or making more severe use of rules of origin (Chase, 2008; De Melo *et al.* 2004).

variables that affect LDCs and the EU's decision to form a PTA, and Wz_{t-1} is a spatial weight matrix constructed from the number of preferential trade agreements in the sample. Moreover, α, β_1, and β_2 are vectors of parameters, and ε_1 and ε_2 are i.i.d. error terms with a constant mean and finite variance.

5.3.1 Outcome Equation

The dependent variable (DV) of the outcome equation is the variable PTA Flexibility. Since the operationalization of flexibility is intrinsically problematic, this variable is specified using two different indices. Although I acknowledge the difficulties in providing a systematic measurement of flexibility, the fact that the two specifications are highly correlated with each other (r = .6) indirectly proves the robustness and coherence of my operationalization. The first indicator is constructed following Epstein and O'Halloran's (1999: 90-112) measurement of executive discretion.[8] It is the discretion in applying legal provisions that a trade agreement leaves to each member country. More specifically, PTA Flexibility I is the proportion of provisions in the trade agreement that delegate policy authority to member states. It is a continuous variable that ranges between 0 and 1 and varies a great deal among different PTAs. Appendix B provides a more detailed explanation of the method that has been implemented to obtain this variable.

The second index is constructed using manual coding of the two aforementioned sources of flexibility: safeguard clauses and anti-dumping provisions.[9] Regarding safeguard clauses, I look at the conditions under which LDCs are allowed to use escape clauses. For instance, some PTAs allowed LDCs to suspend cooperation when "serious difficulties produce major social problems" (Algeria-EU, 2002), whereas other PTAs include flexibility provisions in relation to sensitive sectors in LDCs, *e.g.* the steel industry (Hungary-EU, 1992). The higher the number of conditions under which cooperation may be

[8] Another application of this method was implemented by Franchino (2001) to describe the delegating power of the EU.

[9] Kim and Hicks use a similar coding scheme to measure the depth of coverage, *i.e.* synonymous with flexibility in their study, regarding 57 PTAs signed by Asian countries.

suspended, the higher the degree of flexibility. Regarding anti-dumping provisions, I code whether the agreement includes only anti-dumping provisions or also incorporates countervailing duties and provisions against subsidies imposed by member countries. The rationale for considering these provisions as discretionary provisions is that a country can take advantage of them to suspend cooperation in the case of high costs of compliance.[10] Thus, the higher the number of sectors, *e.g.* tariffs, duties, and subsidies these clauses cover, the higher the degree of flexibility. We group these two conditions in an index that captures the level of flexibility of a PTA and it ranges between 0 and 1. Appendix C provides a more detailed explanation of the method that has been implemented to obtain this variable. This second specification of the dependent variable of the Outcome Equation is name PTA Flexibility II.

The main independent variables of the Outcome Equation measure political and economic transparency. Specifically, I focus on two dimensions of transparency that are of primary interest herein since they are in line with the causal mechanisms previously suggested: predictability of domestic rules and procedures and efficiency of the political system.[11] Due to the difficulties of capturing domestic institutions, political and economic transparency has been operationalized in three different ways: using the level of Corruption, of Government Effectiveness, and of Rule of Law.

Other control variables are Colony, Trade, GDP Growth, and US PTA. The first two variables have been already described, but let's spend few words regarding the last two covariates. GDP Growth captures whether a LDC is risk-adverse, which has proved to be an important variable in explaining flexibility (Koremenos, 2005). Specifically, countries that experience low economic growth are supposed to be more risk-acceptant than countries that

[10] As Prusa argues, "anti-dumping laws have nothing to do with economically harmful practices; rather, anti-dumping is just a cleverly designed form of protectionism" (2005: 683-684).

[11] For a similar specification of transparency, see Helbe *et al.*, 2009.

experience an economic upturn.[12] US PTA scores 1 if an LDC has signed a PTA with the US in $t-1$ or before. It may be expected that a LDC, which has a PTA with US, has a stronger bargaining power in negotiating an agreement with the EU, since it has already gained the access to a very important market. Thus, that LDC should be able to sign a PTA with high degree of flexibility.

5.3.2 Selection Equation

The dependent variable of the selection equation is the dichotomous variable, PTA. The EU signed 24 preferential trade agreements between 1990 and 2005.

Even in the case of the Selection Equation, the main independent variables are variables that measure political and economic transparency that have been described in the previous section. We include several control variables that prove to be important drivers of PTAs formation in general, *i.e.* not specific to EU bilateralism. Regarding economic control variables, GDP and Trade. Regarding the political variables, Alliance, Colony, and Democracy.[13] Finally, the rationale for including US PTA also in the Selection Equation is that the EU may react to a PTA signed by the US with a LDC, *e.g.* Mexico, not to lose trade with this country (Dür, 2007) or to push its own regulatory standard in the international system (Drezner, 2007). Finally, Distance is included as well to control for the geographical component of PTAs. Table 5.1 summarizes the descriptive statistics.

Mirroring the theoretical framework, the empirical analysis follows a two-stage process. In the first stage, I endogenize the EU's decision to select a

[12]The argument is that leaders who anticipate losing office due to economic downturn are more likely to implement adventurous policies. Koremenos (2005) uses a different operationalization of risk-aversion, distinguishing between mid-growth and low-high growth. We have also tried her specification, which turns out not to be statistically significant.

[13]The results reported below do not change when using other data sources, such as the Polity IV score. The correlation between these two measurements of democracy and the three indicators of transparency is around .4.

Table 5.1. Descriptive statistics of the variables. Note: source of the variables is reported in Table 1.4.

Variable	Mean	Std. Dev.	Number of Obs.
PTA Dummy	.01	.1	2146
Spatial PTA	.01	.008	2146
PTA Flexib. I	.36	.14	165
PTA Flexib. II	.42	.09	165
Corruption	2.13	.65	2146
Rule of Law	2.12	.68	2146
Govern. Effect.	2.14	.65	2146
Trade	11.90	3.60	2146
Trade Dep.	.005	.014	2146
GDPpc	2.53	4.02	2146
GDP	2.33	1.53	2146
Alliance	.05	.21	2146
GATT/WTO	.60	.49	2146
Dispute W.T.P.	.05	.22	2146
Trade Disp.	.01	.12	2146
Colony	.75	.43	2146
Democracy	4.26	2.04	2146
EU Cand.	.13	.33	2146
US PTA	.02	.12	2146
Distance	8.56	.64	2146
GDP Growth	2.77	7.36	2146
Landlocked	.23	.42	2146
Island	.12	.32	2146

LDC using the level political and economic transparency as main explanatory variable. The estimated probability of selection is then used as a regressor in the second stage for analysing the impact of political and economic transparency on the degree of flexibility included in the trade agreement. The causal mechanism previously set implies that political and economic transparency allows LDCs bargaining more flexible PTAs with EU. However, since the degree of flexibility of a PTA has an impact upon the probability of its being signed, excluding countries that do not have a PTA with EU would

cause a severe estimation bias that might lead to wrong inferences. Thus, the econometric logic of the Heckman model nicely fits this theoretical conundrum. Indeed, it allows conditioning the estimated mean function in the second stage on the selection process of first stage. Moreover, it takes into account that for a LDC the probability of being selected by the EU affects the likelihood to sign a PTA that includes flexibility provisions. Furthermore, to account for the duration dependence of the dependent variable in the selection model, natural cubic splines (with three knots) are included.[14] Finally, since the dataset is a panel, to control for potential heteroskedasticity across countries, the robust Huber-White sandwich estimator is employed.

As mentioned above, the model is tested for a large number of countries. The unit of observation (country-year) consists of all un-directed dyads between the EU and LDCs that have available data on institutional indicators. This model is known as unbalanced panel in the literature. Un-direct dyads have been chosen since the first country in the dyad is considered the country that is targeted, whereas the second is the EU. The statistical analysis includes 138 countries in the first step. In the second stage, I exclude countries that did not sign a PTA from the dataset leading to a sample population of 23 countries. The period under observation spans from 1990 to 2005. This leaves me with 2146 observations (country-years) in the first stage and 165 observations in the second stage.

5.4 Empirical Findings

As previously stated, the first stage of the Heckman model tests whether or not LDCs form a PTA with EU, analyzing the universe of cases. Results for the two specifications of PTA flexibility are very similar. In both cases, all three operationalizations support the argument that high political and economic transparency of an LDC increases the probability of forming a PTA with the EU with the coefficients having the right sign and being statistically

[14] In the interest of conciseness, splines are not reported in the econometric analysis.

significant at the 99 percent levels (see Table 5.2 and Table 5.3). Moreover, the sign of all the control variables, which are statistically significant in the models, is in line with previous studies giving added plausibility to the findings.

Since in the probit model the value of the coefficients is not meaningful, looking exclusively at the sign and the significance of the coefficient does not allow us to know the effect of the main explanatory variables on the probability of forming an PTA. Thus, the predicted probabilities are showed in Table 5.4 below. Since results are similar for the two specifications of the dependent variable, I focus the analysis only on the first. The impact of the three variables on the probability of forming a PTA is noteworthy. Rule of Law proves to have the strongest effect, moving from a standard deviation below the mean to a standard deviation above the mean increases the likelihood of having a trade agreement between the EU and a LDC by 7.7 $(0.5, 25.4)$ per cent. Corruption and Government Effectiveness increases the likelihood of having a trade agreement between the EU and a LDC respectively by 5.7 $(0.1, 24.8)$ per cent and 5.7 $(0.03, 24.8)$ per cent, moving from a standard deviation below the mean to a standard deviation above the mean. Moreover, moving from the minimal value to the maximum value, the probability of forming a PTA increases by 19 (0.2, 70.1) per cent in case of Corruption, by 24 (0.18, 69.6) per cent in case of Rule of Law, and by 16 (0.1, 62.8) per cent in case of Government Effectiveness. The magnitude of these results is quite remarkable especially if compared to the impact of other control variables, such as Distance and Alliance (Table 4).

Since a probit model is implemented in the first stage, this allows verifying the number of PTAs correctly predicted. In the context of McFadden's motivation of qualitative choice models, if the predicted probability of a PTA for a country pair exceeds one-half, this suggests that I should observe a PTA for the country pair. The model predicts 19 of the 23 country pairs with PTAs with a sensitivity of 80 per cent. The model predicts some agreements (*e.g.* between the EU and Turkey) that the Baier and Bergstrand (2004)

Table 5.2. The formation of bilateral trade agreements with the EU, Heckman Model - PTA Flexib. 1. Standard errors are in parentheses. ** significant at 1 per cent, * significant at 5 per cent, † significant at 10 per cent.

Covariates	Model 1	Model 2	Model 3
II Stage: PTA Flexib 1.			
Corruption	.08** (.02)		
Rule of Law		.10** (.02)	
Govern. Effect.			.11** (.01)
Colony	-.16** (.02)	-.16** (.02)	-.17** (.02)
GDP Growth	.006* (.002)	.006** (.02)	.004† (.02)
Trade	.01** (0.003)	.007* (0.003)	.005* (0.002)
US PTA	.12* (0.06)	.13† (.07)	.11† (.06)
ϱ	.38** (.09)	.37** (.09)	.37** (.09)
σ	.14** (0.006)	.14** (.006)	.13** (.006)
λ	.05** (0.01)	.05** (.01)	.05** (.01)
Rho $\geq \chi^2$	12.58 (.00)	12.04 (.00)	12.37 (.00)
I Stage: PTA Formation			
Corruption	.48** (.14)		
Rule of Law		.67** (.14)	
Govern. Effect.			.48** (.16)
GDP	.06 (.06)	.09 (.07)	.06 (.06)
Alliance	.79** (.22)	.81** (.22)	.85** (.22)
Democracy	.14** (.04)	.14** (.04)	.15** (.04)
Colony	-.19 (.20)	-.16 (.20)	-.21 (.20)
US PTA	1.64** (.25)	1.61** (.25)	1.64** (.25)
Trade	.14** (.05)	.13** (.04)	.14** (.05)
Distance	-.43** (.07)	-.50** (.07)	-.43** (.07)
Spatial PTA	64.76** (12.96)	66.38** (12.63)	64.09** (12.48)
Number of Observations	2146	2146	2146
Number of Censored Observation	165	165	165
Log likelihood	1007.27 (.00)	1123,11 (.00)	12183.63 (.00)

model, which has a similar specification, did not predict. Four PTAs between the EU and LDCs were not predicted: Algeria, Egypt, Lebanon and Syria. Finally, my qualitative choice model also allows us to identify for

Table 5.3. The formation of bilateral trade agreements with the EU, Heckman Model - PTA Flexib. 2. Standard errors are in parentheses. ** significant at 1 per cent, * significant at 5 per cent, † significant at 10 per cent.

Covariates	Model 4	Model 5	Model 6
II Stage: PTA Flexib 2.			
Corruption	.11** (.02)		
Rule of Law		.12** (.02)	
Govern. Effect.			.12** (.01)
Colony	-.07** (.02)	-.07** (.02)	-.08** (.02)
GDP Growth	-.001 (.001)	.001 (.001)	-.001 (.001)
Trade	.01** (.003)	.01** (.003)	.01** (.002)
US PTA	.17** (.03)	.17** (.04)	.15** (.03)
ϱ	.19† (.10)	.17† (.10)	.18† (.10)
σ	.09* (.007)	.09* (.01)	.08* (.008)
λ	.02* (.009)	.02* (.009)	.02* (.008)
Rho $\geq \chi^2$	3.48† (0.06)	2.85† (.09)	3.53† (.06)
I Stage: PTA Formation			
Corruption	.46** (.15)		
Rule of Law		.66** (.14)	
Govern. Effect.			.45* (0.16)
GDP	.05 (.06)	.08 (.07)	.04 (.06)
Alliance	.72** (.23)	.73** (.23)	.78** (.23)
Democracy	.16** (.04)	.16** (.04)	.16** (.04)
Colony	-.21 (.21)	-.18 (.19)	-.21 (.19)
US PTA	1.57** (.25)	1.56** (.26)	1.55** (.25)
Trade	.16** (.05)	.14** (.05)	.15** (.05)
Distance	-.45** (.07)	-.51** (.07)	-.44** (.08)
Spatial PTA	65.78** (13.08)	67.26** (12.79)	65.16** (12.74)
Number of Observations	2146	2146	2146
Number of Censored Observation	165	165	165
Log likelihood	7264.63 (.00)	7882.99 (.00)	7069.45 (.00)

which country dyads bilateralism might be considered insufficient. Following Baier and Bergstrand (2004: 57), bilateralism is designated *insufficient* if a PTA is predicted but does not yet exist. Of 115 country dyads without a

Table 5.4. Changes in the predicted probabilities of PTA formation evaluated at different values of Corruption, Rule of Law, Government Effectiveness Alliance, and Distance. All values are evaluated at the minimal value of the other control variables. Predicted probabilities of Alliance and Distance are calculated in Model 3. 90 per cent confidence intervals are in parentheses.

Economic and Political Transparency	$[\mu - \sigma, \mu + \sigma]$	[min, max]
Corruption	5.7 (.1, 24.8)	18.9 (.2, 70.1)
Rule of Law	7.7 (.5, 25.4)	24 (.18, 69.6)
Govern. Effect.	5.7 (.03, 24.8)	16.2 (.1, 62.8)
Alliance	0.3 (.02, 1.4)	3 (.1, 11.2)
Distance	-.2 (-.6, -.01)	-.7 (-2.1, -.08)

PTA, 2 pairs were not predicted correctly: Ukraine and Serbia.[15] Table 5.5 summarizes these finding graphically.

The second stage of the Heckman model tests the impact of political and economic transparency on the degree of flexibility of a PTA, analyzing a self-selected sample. Even in the outcome equation, all three operationalizations support the argument that high political and economic transparency of an LDC increases the level of flexibility of a PTA between the EU and a LDC with the coefficients having the right sign and being statistically significant at the .01 levels. Government Effectiveness proves to have the strongest effect; if government effectiveness rises by 1 unit, the degree of flexibility of a PTA increases by 11 per cent. In case of Rule of Law and Corruption, if these variables increase by 1 unit, the level of flexibility of a PTA rises respectively by 8 per cent and 7 per cent.[16] Among the other control variables, which are

[15]Serbia and the EU have signed a free trade zone for industrial and agricultural products on April 29, 2008.

[16]The inclusion of a lagged dependent variable in the selection equation implies that I are estimating a difference equation. Consequently, all coefficients and the quantities of interest computed from these point estimates need to be interpreted as *one period effects*. How a shock in one of the exogenous variables affects the long-term equilibrium is a question which I cannot answer be merely looking at the coefficients.

Table 5.5. Cases correctly predicted by the models, cases not predicted, and case of insufficient bilateralism.

PTAs correctly predicted	PTAs not predicted	Insufficient Bilateralism
Bulgaria	Algeria	Ukraine
Chile	Egypt	Serbia
Czech Republic	Lebanon	
Estonia	Syria	
Croatia		
Hungary		
Jordan		
Latvia		
Lithuania		
Mexico		
Morocco		
Poland		
Romania		
Slovakia		
Slovenia		
Tunisia		
Turkey		
Macedonia		
South Africa		

statistically significant, US PTA, GDP Growth, Trade, and Colony have the expected sign in the first specification of flexibility. Conversely, GDP Growth is not statistically significant when PTA Flexibility II is used. To conclude, results demonstrate the superiority of the Heckman model over competing specifications. Specifically, since ϱ, which measures the correlation between the errors of the first and second stage, differs significantly from 0, a Heckman model is the only efficient and unbiased estimator in light of the theoretical framework developed in this paper.

5.5 Robustness Checks

To check the robustness of the empirical results, a series of changes to the base models were made. First, and most importantly, the theoretical nexus between transparency and PTA formation may be hampered by endogeneity and, as a result, so may the relationship between transparency and flexibility. Specifically, since EU conditionality implies the implementation of good-governance policies, it may be expected that LDCs transparency increases as a result of these virtuous reforms suggested by the EU.

Following Baier and Bergstrand (2004), I delete the time-dimensional information and run a pure cross-section of both selection equation and outcome equation. To ensure predetermined values, I use the earliest data on time-varying variables available, namely from 1990.[17] Moreover, I use a different operationalization of transparency. Following the suggestion of Rosendorff and Vreeland (2008), I use missing data on standard economic and social indicators as indicators of transparency. Namely, I evaluate 54 data series from the World Development Indicators such as balance of payments, government finance, social indicators and trade. Our resulting transparency indicator shows the share of series for which there is data available in a given country in 1990, *i.e.* the higher the value, the more transparent the country.[18] Due to a low number of observations, the Heckmam model does not converge in the cross-section analysis. Thus, I estimate the outcome equation using a Tobit model and the selection equation using a probit regression. Results below (Table 5.6 and Table 5.7) show that both hypotheses hold also in the case of a cross-section analysis, *i.e.* transparency and corruption are statistically significant in both models and have a positive sign.[19]

Second, I estimated the models using a direct dyads dataset. Third, I

[17] A cross-section analysis also ensures that results are not spurious. The possibility of correlated errors is not trivial in this case since both the likelihood of forming a PTA and the level of transparency increases over time.

[18] The average values of this variable is .63 and its standard deviation is .16.

[19] Results do not change if I use Rule of Law or Government Effectiveness instead of Corruption.

Table 5.6. The formation of bilateral trade agreements with the EU, Probit Model - PTA Flexib. 1. Standard errors are in parentheses. ** significant at 1 per cent, * significant at 5 per cent, † significant at 10 per cent.

Covariates	Model 7	Model 8
Transparency	9.47** (2.80)	
Corruption		1.28** (0.41)
GDP	.33* (.14)	.41** (.16)
GDPpc	-.04 (.11)	-.06 (.04)
Alliance	.19 (.53)	.31 (.83)
Democracy	.07 (.10)	.10 (.09)
Trade	-.002 (.04)	.04 (.06)
Distance	-1.93* (.31)	-1.91** (.28)
Costant	7.93** (2.74)	10.90** (2.28)
Number of Observations	138	138
Pseudo R^2	.69	.60
Wald $Chi^2(7)$	49.52 (.00)	60.07 (.00)

included year dummies and other control variables that I did not include in the main model to account for common external shocks, such as financial crises. Fourth, I dropped the variables that are not statistically significant in the main model. Finally, I included some additional control variables that may affect the likelihood of forming a preferential arrangement: GDP per capita, trade dispute, landlocked, island, and potential EU candidate. This last variable scores 1 if a LDC i is an EU potential candidate; 0, otherwise. Potential EU candidates, *e.g.* former communist countries, often sign a bilateral trade agreement before joining the EU a few years later. For all these cases, the results are roughly comparable to these previously presented.

5.6 Conclusion

In this chapter, I have made three primary contributions to the IPE literature. First and foremost, I have offered an empirical argument to explain the formation and the design of bilateral trade agreements between the EU

Table 5.7. Flexibility and Transparency, Tobit Model. Standard errors are in parentheses. ** significant at 1 per cent, * significant at 5 per cent, † significant at 10 per cent.

Covariates	Model 9	Model 10
Transparency	2.17** (.45)	
Corruption		.33 (.08)
Colony	-.43** (.11)	-.37** (.11)
GDP Growth	-.008† (.005)	-.007 (.006)
Trade	.02* (.01)	.02 (.01)
US PTA	.73** (.09)	1.11** (.12)
Constant	-1.74** (.40)	-1.14** (.29)
σ	.34** (.06)	.43** (.05)
Number of Observations	138	138
Uncens. Obs.	24	24
Pseudo R^2	0.45	0.26
F(5,133)	29.81 (.00)	27.19 (.00)

and LDCs. Specifically, political and economic transparency in LDCs allows the EU to distinguish whether a defection is a result of serious domestic circumstances or opportunistic behaviors. This is a crucial finding given the importance of flexibility in the cooperation literature. Indeed, as several recent studies have shown (Svolik, 2007; Kucik and Reinhardt, 2008), formal provisions for breaking treaty commitments may counter-intuitively boost cooperation relative to what would otherwise be possible. Second, I show that domestic variables are important drivers in the formation of trade agreements. Specifically, high economic and political transparency of LDCs makes them more likely to reach a trade agreement with the EU. In this sense this paper is in line with the findings of recent studies that have stressed the importance of domestic institutions in economic cooperation (Mansfield *et al.* 2002; 2007; 2008). Third, I provide consistent and generalizable measurements of flexibility that may be used in analysis of other international organizations outside of the realm of trade agreements.

Finally, the study has interesting policy implications. It suggests that North-South PTAs may act as a complementary tool of development, but not as a substitute for endogenous political and economic reforms. Specifically, in order to be appealing economic partners for major economies in general, and the EU in particular, LDCs have to reach a certain level of quality of institutions through transition to a market-economy. The initial steps of this transition have to be implemented endogenously and are crucial for further developments. Indeed, the quality of institutional framework - the level of transparency herein - conditions LDCs' ability to be selected as trade partners by a major economy, *e.g.* in this paper, the EU. Moreover, LDCs' political and economic transparency conditions the degree of flexibility at their disposal to pursue specific development objectives in the light of specific circumstances. In sum, LDCs seem to perform in a Markovian multi-state process in which the transition to a higher state of development is a function of the ability to reach a certain threshold in terms of quality of institutions.

Chapter 6

US Bilateralism: Sending the Right Signal (At the Right Moment)

Introduction

While bilateralism has always been an instrument of foreign policy for the EU, the US embraced this tool only very recently. Indeed, US trade policy has shifted dramatically in the last two decades. The nation that was the advocate of global multilateralism has signed eighteen bilateral trade agreements in the last twenty years and is currently negotiating ten preferential trade agreements (henceforth, PTAs). If all these negotiations culminate in agreements, they will cover more than 40 percent of US merchandise trade (Schott, 2004b: 8). All these initiatives but two (with Canada and Australia) involve LDCs. The magnitude of this phenomenon is quite impressive considering that the US has little to gain commercially from these PTAs, since US barriers are already low and LDCs usually provide only a small market for US goods. Moreover, although they entail distinct advantages, PTAs are not innocuous for an LDC; they result in important limitations in the choice of an LDC's own domestic policies. Thus, the reasons why both the US and LDCs desire to form a PTA are not entirely self-evident and necessitate a systematic explanation.

This chapter fills the gap in the previous literature by answering two re-

lated research questions: What are the main drivers of US bilateralism? And similarly, what is the rationale for developing countries to propose a trade agreement with the US? To address these questions, I model a two-stage bargaining process that captures the preferences of both the US and LDCs. In the first stage, the LDC has to decide whether or not to propose a PTA; if it does, the US may enter the negotiations or refuse.[1] In the second stage, which is the actual negotiation phase, the US dictates strict conditions to LDCs and, if and only if they fulfill these conditions, an agreement is signed. From this simple theoretical framework, I argue that the desire of LDCs to implement *economic reforms* is the main driver of US bilateralism. On one hand, an LDC decides to propose PTA negotiations with US if the former's political elites have serious intentions to pursue economic reforms. Indeed, by entering into negotiations with the US, LDCs gain bargaining power vis-à-vis those domestic interest groups that oppose any economic change. On the other hand, the US signs a PTA only with those countries that agree to implement specific economic reforms that are in line with US interests. Only after having observed explicit changes in laws and regulations in accordance with its "suggestions" is the US keen to form a bilateral agreement with an LDC. These hypotheses are tested quantitatively using a battery of econometric tools and a newly compiled database covering 142 countries from 1990 to 2007.

My findings also have important policy implications. First, by setting this aggressive bargaining strategy the effectiveness of US conditionality is very high, since LDCs are not able to defect without losing the opportunity to reach a deal. As a result, assuming that US conditionality is business oriented, US companies have a clear advantage over competitors from other developed economies in the markets of an LDC that is part of a PTA. Second, by acting as a "bad cop", the US provides crucial indirect assistance to those governments that are serious about economic reforms. In particular,

[1]Legally speaking, US trade negotiators are not permitted to approach their counterparts to arrange the formal start of PTA negotiations. As Feinberg (2003) notes, the US is essentially reactive to entreaties of trading partners.

with US support, these governments are able to liberalize their markets in a way that they could not do otherwise and so gain a competitive advantage vis-à-vis other LDCs.

The chapter is structured as follows. The following section develops the theoretical framework on which this study is built. The second part introduces the empirical model and explains the methodology that has been used to test the hypotheses. The third section shows the empirical results of the econometric analysis. The fourth part controls for the robustness of the results. The last section draws some conclusions.

6.1 Background and Theory

While it is commonly thought that the support of LDCs' economic reforms is one important rationale of US bilateralism (Schott, 2004b), only anecdotal evidence been used to support this claim, and no empirical study has yet investigated this crucial argument. The causal mechanism that has been proposed in supporting the relationship between economic reforms and PTA formation relies on signaling theory. Roughly speaking, a signalling theory suggests that LDCs may unveil governments' preference and intentions by liberalizing their economies. More specifically, for a given LDC x, pursuing economic reforms serves as a costly signal of intent to comply with the terms of an eventual agreement.[2] In turn, after having observed this signal, the US is expected to form a PTA with country x, which is likely to be a reliable partner, *i.e.* a "good type", to use a game theoretic label.

The signaling theory has been widely used in international political economy to explain a country's decision to enter into international agreements. For instance, Neumayer and Spess (2005: 1572) argue that an LDC signs bilateral investment treaties to "signal its willingness to protect foreign direct

[2]The assertion that the signal must be costly is still controversial in the IPE literature. For an unorthodox view on this topic, see Urpelainen, mimeo.

investment." Moreover, in relation to international climate policy, the European Union publicly committed to unilateral emission reductions to send a signal of credible leadership (Schreurs and Tiberghien, 2007). The signalling theory has important applications also in explaining the formation of PTAs in general (Ederington and McCalman, 2002; Mansfield *et al.*, 2002; Ravenhill, 2003) and of US bilateral trade agreements in particular. For instance, Feinberg (2003: 1020) argues that the US signs bilateral trade agreement to "reward and support market-oriented reformers", as the bilateral trade agreements reached with Chile and Singapore show (Weintraub, 2004).

Despite its popularity, signaling theory raises several concerns in the context of North-South PTAs. First, a signal must be credible. Implementing reforms to send a signal to the US is relatively easy. What is difficult is to sustain these reforms over time. Thus, pursuing economic reforms without securing them to policy anchors increases significantly the probability of a reversal and in doing so, renders the signal meaningless. For example, despite the effort to ease restrictions on FDI during the 1970s, *e.g.* the Law on Foreign Investment in 1973, Mexico was unable to attract long term investments due to the lack of credibility of its government in sustaining these reforms (Blomström, 1986). Second, an uncertainty problem arises. There is a large variety of reforms that can be implemented and hence also a large variety of signals that can be sent. Thus, it is crucial for LDCs to know which policies concern the US the most not to incur sunk costs by pursuing irrelevant economic reforms. In other words, to be effective a signal must be the right one. Third, signals are difficult to capture empirically. Indeed, policies implemented to improve the economic performance of an LDC may be mistakenly interpreted as signals. For instance, August Pinochet is likely to have pursued trade liberalization in the 1970s and 1980s to bolster economic growth rather than to send a signal to US administration.

Herein the core issue is the dynamic nature of PTA formation. Specifically, forming a PTA with the US consists of two separate, albeit related, choices: an LDC asks to start negotiations and the US agrees to sign the

agreement. To tackle properly these theoretical issues, I pitch the argument more directly. I model the formation of a PTA between an LDC and the US as a two-stage process. In the first step, labeled *pre-negotiation*, an LDC proposes to enter into negotiations with the US to sign a PTA. The US may accept or decline. If the US declines, the game is over; if the US accepts, the game moves to the second step. In the second step, labeled *negotiation*, the US sets some conditions to sign the PTA and then an agreement is reached if, and only if, the LDC accepts these conditions. This two-stage framework is illustrated in Figure 6.1.[3]

A dynamic empirical model has a crucial advantage with respect to the previous issues: it allows an estimation of the *timing* of signals. Specifically, by splitting the population of countries into two parts, *i.e.* these that entered into negotiations with the US and these that do no, it is possible to know at which point (if any) a signal is able to credibly communicate policy preferences of political elites in LDCs. Moreover, on one side, this framework enables the identification of which signals are more effective in unveiling such preferences.

6.1.1 First Stage: Pre-Negotiation

To understand why a fully rational and self-interested LDC would want to propose a PTA to the US it is necessary to weigh the costs and benefits of the arrangement. From the LDC's perspective, forming a bilateral trade agreement with the US has several benefits. First, a PTA with the US allows LDCs to gain access to the largest market in the world. This is particularly true for small LDCs whose exports depend heavily on the US market. Furthermore, it enhances LDCs' policy credibility vis-à-vis direct competitors

[3]Several other dynamic models have been implemented recently in international political economy. In relation to democratic transition, see Gleditsch and Ward (2006), Przeworski and Limongi (1997), and Svolik (2008). Regarding international trade, see Kucik and Reinhardt (2006).

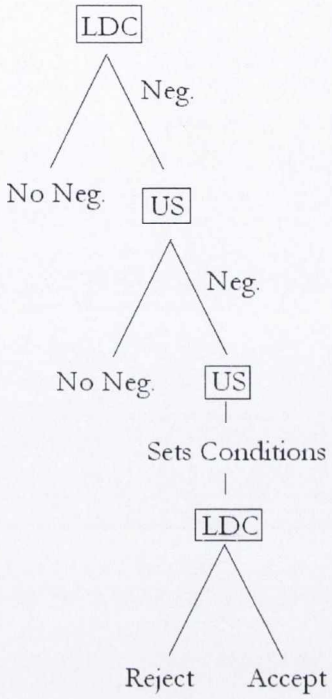

Figure 6.1. An empirical model of PTAs formation in extensive form.

in relation to scarce investment resources (Whalley, 1998; Schiff and Winters, 1996). For instance, an increase in credibility may be associated with a positive change in net FDI inflows toward LDCs (Medvedev, 2006). Finally, by correcting market failure a PTA with the US can significantly dampen transaction costs and grant greater certainty of a regulatory framework in trade and trade-related sectors (Maur, 2005). These reasons may be summarized with the concept of "competitive liberalization" (Bergsten, 1996; 2002; 2005), which explains how policymakers try to out-reform their competitors in an effort to both secure preferential access to key markets and to improve the investment climate in their own markets.

The downside of forming a PTA with the US is related to the adjustment costs that LDCs have to face to meet the standards of the agreements.

The following section will explore in more detail some key sectors in which a PTA with the US produces high costs of compliance. Here, I only want to stress that the occurrence of adjustment costs implies that there will be losers in LDCs as a result of a PTA with the US. For instance, Salazar-Xirinichas and Granados (2004: 258) identify traditional and agribusiness activities, small and medium enterprises oriented toward the domestic market, and trade unions in some public enterprises as potential economic groups that are likely to suffer from the formation of CAFTA. Similarly, Leith and Whalley (2004: 352) argue that a PTA between SACU and the US will increase the South African unemployment rate since the region's comparative advantage is based on natural resources and those natural resources and capital appear to be complementary inputs.[4]

Interest groups that face major economic losses are likely to be highly mobilized in defending their interests and in avoiding any economic reforms. Political elites in LDCs already anticipate these problems in this phase of negotiation. Put simply, they will not propose an agreement and will not start to negotiate with the US if they feel that these political costs will be too high or if they are not serious about implementing significant economic reforms. On the other hand, if LDCs' governments want to embark upon a process of economic liberalization, signing a PTA with the US is an effective way to push unpopular policies. Indeed, political elites may use PTAs with the US as a stick and carrot instrument.[5]

The carrot concerns the fact that LDCs' governments may persuade some key interest groups that benefit from the trade agreements to back economic reforms and to cooperate in approving them. Conversely, the stick relies on the credibility of commitment theory; political leaders in LDCs may benefit from tying their hands and the hands of future governments. The reason why this holds is that once an LDC has entered into a PTA with the US,

[4]For an extensive analysis on the SACU countries, see Alleyne and Subramanian (2001).

[5]A similar argument is developed by Drazen (2002) and Vreeland (2005) to explain why countries decide to enter into an IMF arrangement.

failure to enact policy change becomes more costly. The US may charge LDCs through both fines and trade sanctions (Weintraub, 2004: 89).[6] Moreover, failing to comply may result in a loss of credibility vis-à-vis foreign (not only US) investors. Finally, beyond the stick-carrot mechanism, there is a further argument that explains the benefit for LDCs of joining a PTA with the US. Drazen and Limao argue (2008) that by signing a PTA and by self-restraining, LDCs governments improve their bargaining position relative to lobbies. Specifically, forming a PTA allows LDCs to pursue economic reforms dictated by the US (so-called conditional agreements) under the threat of retaliation if that commitment is broken. This argument is similar but not identical to previous arguments, since it is not based on the time-inconsistency problem (Drazen and Limao, 2008: 624).[7]

LDCs governments are expected to use the opportunity to sign a PTA with the US in order to deliver economic reforms that they could not push through otherwise. More specifically, controlling for other factors, an LDC will be more likely to propose a PTA to the US, if the LDC's political leaders desire to implement drastic economic reforms and if they plan to pursue them during the negotiation phase of a PTA. In other words, due to the difficulties inherent in pursuing good long-run policies through painful short-term adjustments and pressures of rent seeking (Alesina and Drazen, 1991; Rodrik, 1996), political elites in LDCs use PTA negotiations as a policy anchor to secure drastic economic reforms. Although this holds only stochastically, there is evidence to support such an argument. Coming back to the previous example of Mexico, Salinas' government implemented important economic reforms during the negotiation phase of NAFTA. These reforms were extremely unpopular and could have been carried out only due to the strong intervention of the US (Francois, 1996).[8]

[6]Failing to comply on labor standard costs Chile up to 15 million dollars a year, adjusted for inflation (Weintraub, 2004: 87).

[7]For a detailed explanation of the model see, Drazen and Limao (2008).

[8]The IMF also played an important role in the case of Mexican economic liberalization.

So far I have considered only the LDCs' motivations to start negotiating a PTA with the US. However, taking into account the dynamic nature of a bilateral trade agreement, which is the result of the joint decision by two countries, to enter into PTAs negotiation the US has to have reasons to accept the proposal of LDCs. Building upon the previous literature (Evenett and Meier, 2008; Feinberg, 2003), there are three main cleavages along which the US selects trade partners to begin negotiations: economic considerations, security goals, and issues related to domestic politics. First, the US is more likely to sign a PTA with bigger and richer economies, since the benefits from the agreement are higher in this case (Baier and Bergstrand, 2004). Second, the US is more likely to target countries that are long-standing US security interests (Feinberg, 2003: 1028). As Ambassador Portman (2006) says "we have a larger interest in political stability [...] Thus, our FTAs are not always strictly commercially base." Third, the US is more likely to enter into negotiations when both the president and the congress belong the same party, since the process of ratification is easier and quicker (Evenett and Meier, 2008: 34). For instance, the Bush administration was very proactive in terms of PTA negotiations also because of the Fast Track Authority that was granted to the president by Congress. This was possible only because the Republican Party had the majority in Congress from 2000 to 2006.

6.1.2 Second Stage: Negotiation

In this stage, there is a wide consensus among scholars that bargaining power is clearly unbalanced (Schott, 2004b). First, the different economic size of the US and any LDC is dramatic and, as distinct from other international forums, no other major economy can counterbalance US economic hegemony. Moreover, US barriers and tariffs are already low in most sectors (Feinberg, 2003: 1036), which implies that the US has less of a need to form a PTA than an LDC. Thus, US bilateralism is characterized by the so-called "asymmetric reciprocity", *i.e.* trading partners have to make more concessions than the

US does.[9] Finally, the fact that the US initiates negotiations, but reacts to LDCs' proposals to form PTAs bolsters its bargaining power (Evenett and Meier, 2008: 40). As Chief Agricultural Negotiator Alan Johnson (2003) puts it, "if others are ready to open their markets, America will be their partner. If someone is not ready, or wants to complain but not lower their barriers, the United States will proceed with countries that are ready."

Using this asymmetric bargaining power, the US asks for specific economic reforms that are in line with its pressing economic interests. Specifically, beyond the reduction of tariffs, the US is concerned with key trade-related sectors such as liberalization of services, strict rules on intellectual property rights, transparency and anti-corruption laws, and free movement of capital. The services sector, for instance, is one of the main concerns of US trade policy. Services liberalization regulated by the US-type approach is deeper than that regulated by the GATS-type approach in the WTO (Roy *et al.*, 2007). In particular, while GATS is based on a positive list, US-PTAs are based on a negative-list scheduling modality: everything is liberalized, unless otherwise indicated through list of reservations. This approach opens an LDC's market to US services providers in crucial sectors such as banking, insurance, computers, telecommunication, and professional services. In doing so, the US reaps two main benefits. First, US companies improve their position vis-à-vis direct competitors, *e.g.* the EU, which cannot reap the same benefits in the markets of US trading partners. Second, US companies are likely to have a competitive advantage compared to LDCs' companies in these high-tech sectors and so are likely to gain new customers in these countries (Weintraub, 2004).

Intellectual property rights (IPR) are another core issue for the US. As Maskus (1997: 682) notes, strong lobbying efforts especially by pharmaceutical, software, and entertainment sectors place IPR at the forefront of US

[9]What I describe arises not only with small LDCs, but also with bigger economies. Weintraub (2004: 90) notes that in the PTAs with both Chile and Singapore, the US was generally under no obligation to change its laws and regulations.

trade policy and US trade negotiations. This happens due to substantial potential gains to American firms in the area of IPR. Indeed, by reducing market distortions such laws are likely to favor US firms, which are, in general, more efficient than LDC firms.[10]

Since this point is central for understanding the causal mechanism proposed herein, I describe the bargaining process in more detail. The negotiation of a PTA between the US and an LDC lasts on average two years (see Table 6.1) and is characterized by several rounds in which policymakers of both countries meet and discuss the provisions of the agreement. During these rounds, which mirror WTO rounds, US officials ask LDCs to pass explicit laws that make feasible the enforcement of the provisions included in the agreements. Hence, I argue that the US is willing to conclude and enforce a PTA only with those countries that change their laws and regulations in line with US suggestions. In other words, the US is not interested in vague market-oriented policies, but in specific economic reforms from which it can reap concrete benefits. For instance, the US did not conclude a PTA with either Chile or Singapore until each removed capital controls. Furthermore, the PTA with Chile was signed only after Chile passed three laws to improve transparency and reduce the scope of corruption.[11]

There is certainly evidence that some of these reforms are so radical that the two parties may agree to dilute them in time, especially in the case of the smallest and the least-developed countries. For instance, Jordan obtained a two-year grace period in the Intellectual Property Rights Section when it signed an agreement with the US. However, these cases are more an exception than the rule. For instance, the same delay was not accorded to Jordan in relation to services liberalization; the US did not sign the PTA

[10]Every US treaty has a specific section that includes provisions dealing with patents, trade secrets, trademarks, copyrights, etc.

[11]The three new laws established a clearer path career for public servants, based on merits, provided public funding to political parties, and regulated private donations (Hernandez and Parro, 2008: 79).

Table 6.1. Bilateral trade agreements with LDCs concluded or commenced by the US. Note: CAFTA-DR includes Costa Rica, El Salvador, Guatemala, Honduras, Nicaragua, and Dominican Republic, whereas SACU includes Botswana, Lesotho, Namibia, Soth Africa, and Swaziland.

Trading Partner	First Round	Conclusion	Signature	Duration
Bahrein	2004	2004	2004	4 months
Bolivia	2004			
CAFTA-DR[12]	2002	2003	2004	13 months
Chile	2000	2002	2003	24 months
Colombia	2004	2006	2006	22 months
Ecuador	2004			
Korea	2000	2005	2007	24 months
Jordan	1999	2000	2001	20 months
Malaysia	2006			
Mexico	1990	1992	1992	30 months
Morocco	2003	2004	2004	11 months
Oman	2005	2005	2006	7 months
Panama	2004	2006	2007	20 months
Peru	2004	2005	2006	19 months
SACU[13]	2003			
Singapore	2000	2002	2002	25 months
Thailand	2004			
Vietnam	1999	2001	2001	24 months

with Jordan until the latter has passed strict laws to liberalize 11 services sectors.[14] Similarly, the PTA between the US and SACU is at a standstill in part because African countries want to exclude government procurement and investment provisions from the negotiations (Langton, 2007). Bearing this in mind, my core argument is that the US dictates policy changes and only after having verified implementation thereof is it willing to sign a PTA with LDCs.

[14]The sectors are business services, telecommunications, construction and engineering, distribution, education, environment, insurance and banking, health, travel and tourism, recreational, cultural, and sports, and transportation.

6.1.3 Hypotheses

What I gain from breaking the signing of a PTA into a two-stage process is the possibility to differentiate between the role of signals before and after LDCs enter into a negotiation with the US. Theoretically, this setting provides two main insights. First, the US is not affected in its decision to enter into negotiations by the fact that LDCs have previously implemented general economic reforms. Put simply, as from the first stage, the US is not interested in selecting market-oriented trade partners. Even simpler, I argue that the signaling argument does not play any decisive role in this first stage of the bargaining process of a PTA. Second, as from this second stage, implementing economic reforms during the negotiation process is a necessary condition for a PTA being reached and coming into force. In other words, pressing economic interests and strategic markets preferences play a major role in the US's decision to close a deal with an LDC. Herein signals are crucial. Indeed, before signing a PTA, the US asks for specific reforms rather than a vague declaration of intent concerning the enforcement of laws and regulations in key sectors. These reforms are exactly the credible and costly signals that LDCs must send to the US in order to show their willingness to cooperate economically. With these insights in hand, I derive two testable hypotheses:

HP1: The US is no more likely to begin negotiating a PTA if an LDC has previously implemented market-oriented reforms.

HP2: The US is more likely to sign a PTA if the LDC implements the economic reforms suggested by the US during negotiations.

A further implication of this hypothesis is that by knowing the US's preferences and intentions during negotiations, LDCs' leaders may act strategically. Specifically, they may consciously delay the implementation of intended economic reforms until they gain access to the negotiation phase of a PTA with the US. In doing so, they can pursue these policies from a strong bar-

gaining position vis-à-vis lobbies that desire to block them. Moreover, LDCs' governments can blame the US for delivering unpopular economic reforms. In sum, if timing is of the essence in relation to successful liberalization, the US serves as an important asset for political elites in LDCs by acting as the "bad cop". Finally, I want to emphasize that my hypotheses speak to purely behavioral aspects of the decision to form a PTA with the US. In contrast, the theory claiming that reaching a trade agreement with the US can make an LDC's economy more efficient is far more difficult to substantiate and is beyond the scope of this paper.

6.2 Models and Case Selection

In the previous sections, US bilateralism has been described as a process of LDCs' self-selection related to the desire to pursue economic reforms and a US decision related to the actual implementation of specific economic reforms by the LDC. The selection character of the causal mechanism entails some estimation problems. In order to deal with these issues and to test the previous hypotheses, the following Heckman selection model has been built:

$$Outcome\ Equation : y_{ij,t} = \alpha X_{ij,t-1} + \varepsilon_1 \tag{6.1}$$

$$Selection\ Equation : z_{ij,t} = \beta U_{i,t-1} + \gamma V_{j,t-1} + \delta Z_{ij,t-1} + \varepsilon_2. \tag{6.2}$$

y and z are the dependent variables of the outcome equation and selection equation, respectively; X is a vector of the LDC's features that influence the formation of the PTA with the US; U is the vector of the explanatory variables that affect the US's decision to form a PTA; V is a vector of the facts that affect an LDC's decision to form a PTA; and Z is a vector of characteristics of the relationship between the US and the LDC. Moreover, α, β,

γ, and δ are vectors of parameters, and ε_1 and ε_2 are the error terms.

6.2.1 Outcome Equation

The dependent variable of the outcome equation is the variable PTA, which has been already described in Chapter 1. One of the main challenges of this study is the operationalization of signals, which as mentioned, is intrinsically problematic due to the variety of policy reforms that LDCs may implement. In this regard, I follow two different paths.

First, I measure two specific aspects of economic reforms that are tightly linked to my theoretical framework as described in the previous section and that are available for a large number of countries. In particular, I focus on Service Liberalization and IPR Legislation. Regarding the former variable (Service Liberalization), I measure the total amount of proceeds (natural log) in dollars gained by privatization of companies in the service sector every year t and I divide it by the GDP. Data are from the World Bank Privatization Dataset (Kikeri and Phipps, 2007). Since the service sector is a key-issue for US interests, implementing liberalization in the service sector is expected to increase the probability of forming a PTA with the US. Regarding the IPR issues, I include three dummy variables that capture whether LDCs join international treaties that protect IPR. Among the 24 international treaties currently in force, I select three of them: the Brussels Convention (1974), the Trademark Law Treaty (1994),[15] and the Budapest Treaty (1980). The reason I select these treaties is that they represent the most important and controversial agreements vis-à-vis developing countries, who tend to delay joining them (Deere, 2008).[16] I expect that by signing one of these treaties,

[15] Although NAFTA has been signed in 1992, I decide to include this treaty due to its importance.

[16] I exclude those treaties that the US did not sign in, *e.g.* the Madrid Agreement, since supposedly the US does not care about the issues addressed there. Moreover, I exclude those treaties that have been signed by almost every country, *e.g.* the Berne Convention, due to the lack of variation in the explanatory variable.

LDCs send a credible signal of their willingness to cooperate seriously with the US and in turn, increase the probability that they will join a PTA. Moreover, I measure the number of pieces of legislation that defend IPR approved by national parliaments of LDCs in year t (IPR Legislation). Even in this case, LDCs's willingness to defend IPR legally should increase the probability of reaching an agreement with the US. Data on both IPR treaties and IPR legislation are from the World Intellectual Property Organization.

Second, I use two more general operationalizations of economic reforms, which are available for a smaller set of countries. Global Reform and Trade Reform respectively measure the difference between the *summary index* and the *freedom to trade international index* from time *t-2* to *t-1* according to the Economic Freedom Word Dataset (2008) for each LDC.[17] Positive values imply that a country has implemented economic reforms during the previous year and this is expected to have a positive impact on the probability of the formation of a trade agreement with the US in time t. I use these indices because they include several areas and components and thus effectively capture the effort of an LDC to pursue economic reforms not only in trade sector, but also in trade-related sectors, *e.g.*, capital and property rights. Moreover, the data are available for a large number of countries and they are in time-series.

Finally, as a control variables, I add Distance, Trade, Democracy, and Alliance, which have been previously described in Chapter 1.[18]

6.2.2 Selection Equation

The dependent variable, Negotiation, is a dichotomous variable that equals 1 if LDC i and the US are negotiating a PTA in year t; 0, otherwise.

The main explanatory variables that capture signals from LDCs to the US

[17]For other studies using these data, see Bearce, mimeo.

[18]Democracy refers to LDCs only.

have been previously described in Chapter 1. Regarding domestic political variables, I include some *ad hoc* control variables in relation to US domestic politics. Double Majority scores 1 if president and congress belong to the same party in time *t-1*; 0 otherwise. This variable controls for the fact that if legislative and executive power are in the hands of the same party, it is easier for the president to conclude a PTA. In turn, the US is more likely to start negotiations in such case. Moreover, Multilateral Deadlock scores 1 if the LDC i is part of a multilateral agreement at a standstill, such as APEC. The rationale for adding this variable is that the US is expected to accelerate the negotiation of a PTA, if multilateral agreements are stalled in a deadlock (Evenett and Meier, 2008: 38). Furthermore, US Troop measures the number (natural log) of US troops deployed in an LDC i in time *t-1*. This variable emphasizes the role of foreign policy in the US's decision to enter into negotiation with LDCs.[19] Finally, other control variables are GDP, GDP growth, GDPpc, Trade, Alliance, and Democracy. Table 6.2 shows the descriptive statistics of these variables.

The *unit of observation* consists of all un-directed dyads between the US and 142 LDCs that have available data on service privatization and IPR legislation.[20] This model is known as *unbalanced* in the literature. Un-directed dyads have been chosen since the first country in the dyad is considered the country that is targeted, whereas the second is the US. The analysis involves 18 years from 1990 to 2007.

Mirroring the theoretical framework previously presented, the empirical analysis follows a two-stage process. In the first stage, I endogenize an LDC's decision to enter into negotiations with the US due to leadership turnover and the US's decision to select LDCs according to the economic and political factors discussed above. The estimated probability of selection is then used

[19]Similarly, this variable proves to be an important driver of US FDI (Biglaiser and DeRouen, 2007).

[20]As already mentioned, data for the trade reform and global reform variables are available for 82 LDCs.

Table 6.2. Descriptive statistics of the variables. Sources: (1) World Trade Organization, the Tuck Trade Agreements Database, and the McGill Faculty of Law Preferential Trade Agreements Database; (2) World Intellectual Property Organization; (3) World Bank Privatization Dataset (Kikeri and Phipps, 2007); (4) Economic Freedom Word Dataset (2008); (5) US Troop Deployment Dataset (Kane, 2006); (6) Compiled by the author. Note: source of the variables included in previous chapters models is reported in Table 1.4.

Variable	Mean	Std. Dev.	Min	Max	No. of Obs.	Source
PTA	.007	.09	0	1	2444	
Negotiation	.04	.20	0	1	2444	(6)
Service Liberal.	.16	.53	0	8.99	2444	(3)
IPR Legislat.	.54	1.61	0	22	2444	(2)
Trademark Law Tr.	.08	.27	0	1	2444	(2)
Brussels Conv.	.10	.29	0	1	2444	(2)
Budapest Tr.	.16	.36	0	1	2444	(2)
Trade Reform	.07	.28	-2.66	2.56	1500	(4)
Global Reform	.05	.17	-1.05	.94	1500	(4)
Trade	9.37	1.31	3.37	12.55	2444	
GDPpc	2.97	4.69	.1	44.12	2444	
GDP Growth	3.19	7.18	-52.6	80.7	2444	
Alliance	.37	.48	0	1	2444	
Democracy	-4.17	2.06	-1	-7	2444	
US Troop	2.35	1.19	0	11.92	2444	(5)
Double Majority	.45	.50	0	1	2444	(6)
Multilateral Deadlock	.26	.44	0	1	2444	(6)
Distance	9.01	.47	7.48	.47	2444	

as a regressor in the second stage for analyzing the impact on the formation of a trade agreement of economic reforms in general, and trade reforms in particular. Thus, the econometric logic of the Heckman model is well suited to my theoretical framework. Indeed, it allows for the conditioning of the estimated mean function in the second stage on the selection process of first stage.

Moreover, it allows me to demonstrate that the probability of being se-

lected by the US does not depend on the occurrence of previous economic reforms, providing a valid test for the first hypothesis. However, since the dependent variable in the outcome equation is binary, the Heckman model would be biased and inconsistent. Thus, I use a modified version of the Heckman model, called probit model with sample selection, which consists of one probit for each of the two stages.[21] Furthermore, to account for the duration dependence of the dependent variable in the selection model, natural cubic splines (with three knots) are included.[22] Finally, since the dataset is a panel, the robust Huber-White sandwich estimator is employed to control for potential heteroskedasticity across countries.

6.3 Empirical Findings

As previously stated, the *first stage* of the Heckman model tests whether or not LDCs enter into PTA negotiations with the US, analyzing the universe of cases. Results of both the Services Liberalization variable and the variables related to legislation on IPR support the hypothesis that these specific reforms do not impact the probability of starting negotiations with the US (see Table 6.3, Table 6.4, Table 6.5). Indeed, the coefficients of both variables are not statistically significant or they have negative sign, as in the case of the Trademark Law Treaty and Budapest Treaty.[23] Similarly, regarding more general economic reforms, neither Trade Reform (Model 6) nor Global Reform (Model 7) are statistically significant in the selection equation. Thus, there is little evidence that having a market-oriented record makes an LDC more likely to be accepted by the US as a trade partner.

Regarding the other control variables, there is evidence that economic

[21] For a similar application of the probit model with sample selection, see Plümper *et al.* (2005).

[22] For the purposes of saving space, splines are reported in the econometric analysis.

[23] This result may imply that the US target as trade partners some specific LDCs to force them to implement policies that LDCs would not pursue otherwise. However, this remains a speculation, since this other side of the story is not developed herein.

Table 6.3. The formation of preferential trade agreements, Probit Model with sample selection clustered by dyads. Notes: robust standard errors are in parentheses. *** significant at 1 per cent, ** significant at 5 per cent, * significant at 10 per cent.

Covariates	Model 1	Model 2
II Stage: PTA Formation		
Service Liber.	1.60*** (.62)	
IPR Legisl.		.06 (.07)
Distance	-.84*** (.34)	-.84** (.33)
Trade	.27 (.17)	.20 (.15)
Democracy	-.12 (.11)	-.13 (.11)
Alliance	.23 (.45)	-.19 (.45)
Constant	3.89 (3.32)	4.53 (3.44)
ϱ	-.59*** (.10)	.59*** (.10)
Rho $\geq \chi^2$	20.64 (.00)	18.68 (.00)
I Stage: PTA Negotiation		
Service Liber.	-.06 (.16)	
IPR Legisl.		.08 (.05)
Trade	.001 (.09)	.001 (.09)
GDPpc	.04*** (.01)	.04*** (.01)
GDP	.13* (.07)	.02* (.01)
GDP Growth	.002 (.008)	.12* (.07)
Alliance	-.41 (.25)	-.41* (.25)
Democracy	-.04 (.05)	-.04 (.05)
US Troop	.005 (.04)	.01 (.04)
Double Major.	2.42*** (.34)	2.47*** (.32)
Multil. Deadlock	.85 (.27)	.86*** (.27)
Number of Observations	2444	2444
Number of Uncensored Observation	101	101
Prob $\geq \chi^2$	16.71 (.00)	14.53 (.01)
Log likelihood	-199.29	-198.70

factors are an important driver in the US's selection of a trade partner. Indeed, while trade is not statistically significant, GDPpc and GDP have a positive sign and are statistically significant, respectively at a 99 and 90 per

Table 6.4. The formation of preferential trade agreements, Probit Model with sample selection clustered by dyads. Notes: robust standard errors are in parentheses. *** significant at 1 per cent, ** significant at 5 per cent, * significant at 10 per cent.

Covariates	Model 3	Model 4	Model 5
II Stage: PTA Formation			
Trademark Law Tr.	2.15*** (.38)		
Brussels Con.		.41** (.19)	
Budapest Tr.			.74* (.44)
Distance	.97*** (.33)	-1.08*** (.40)	
Trade	.12 (.14)	.20 (.16)	.18 (.15)
Democracy	-.23 (.10)	-.14 (.10)	.18** (.08)
Alliance	.06 (.48)	-.37 (.45)	-.23 (.49)
Constant	6.09* (3.44)	4.58 (3.31)	6.60* (3.88)
ϱ	-.65*** (.09)	.62*** (.10)	.58*** (.10)
Rho $\geq \chi^2$	20.57 (.00)	18.69 (.00)	19.23 (.00)
I Stage: PTA Negotiation			
Trademark Law Tr.	-.91** (.39)		
Brussels Con.		.41 (.26)	
Budapest Tr.			-.61* (.34)
Trade	.03 (.10)	.01 (.10)	.03 (.09)
GDPpc	.03*** (.01)	.04*** (.01)	.03*** (.01)
GDP	.14** (.07)	.12* (.07)	.16** (.07)
GDP Growth	.004 (.008)	.002 (.01)	.004 (.01)
Alliance	-.36 (.25)	-.48** (.23)	-.33 (.27)
Democracy	.06 (.05)	.03 (.05)	.06 (.05)
US Troop	.02 (.04)	.003 (.04)	.02 (.04)
Double Major.	2.44*** (.32)	2.43*** (.34)	2.45*** (.32)
Multil. Deadlock	.77 (.29)	.91*** (.25)	.70** (.31)
Number of Observations	2444	2444	2444
Number of Uncensored Observation	101	101	101
Prob $\geq \chi^2$	50.85 (.00)	15.73 (.01)	17.01 (.00)
Log likelihood	-196.08	-198.52	-197.65

cent level. This confirms the claim that the US is more likely to select big and rich markets to negotiate a PTA, so that the welfare is higher.

Table 6.5. The formation of preferential trade agreements, Probit Model with sample selection clustered by dyads. Notes: robust standard errors are in parentheses. *** significant at 1 per cent, ** significant at 5 per cent, * significant at 10 per cent.

Covariates	Model 6	Model 7
II Stage: PTA Formation		
Global Reform.	1.59** (.75)	
Trade Reform		1.57*** (.52)
Distance	-1.07*** (.35)	-.92*** (.28)
Trade	.13 (.13)	.10 (.13)
Democracy	-.12 (.11)	-.11 (.10)
Alliance	-.48 (.47)	-.48 (.40)
Constant	7.39** (3.49)	6.57** (2.81)
ϱ	-.44*** (.15)	.52*** (.16)
Rho $\geq \chi^2$	6.09 (.01)	6.92 (.01)
I Stage: PTA Negotiation		
Global Reform	.17 (.31)	
Trade Reform		.18 (.19)
Trade	.01 (.11)	.01 (.10)
GDPpc	.04** (.02)	.04** (.02)
GDP	.15* (.08)	.14* (.07)
GDP Growth	.01 (.01)	.01 (.01)
Alliance	.12 (.29)	.11* (.29)
Democracy	-.04 (.06)	-.03 (.06)
US Troop	-.01 (.05)	-.01 (.05)
Double Major.	2.16*** (.26)	2.21*** (.26)
Multil. Deadlock	.53* (.29)	.53* (.29)
Number of Observations	1500	1500
Number of Uncensored Observation	92	92
Prob $\geq \chi^2$	19.23 (.00)	25.11 (.00)
Log likelihood	-197.07	-195.14

Surprisingly, security issues do not seem to be a major driver in the probability of being selected by the US. Indeed, Alliance and Democracy have a

negative sign, though only the former is statistically significant at a 90 percent level. Despite a common rhetoric on the need to spread democracy, there is no evidence that the US rewards democratic LDCs by accepting them as trade partners. Moreover, even US Troop is not statically significant. Thus, claims that foreign policy goals shape US bilateralism are without statistical support and the importance of these factors appears to be overstated in some parts of the existing literature. As US Ambassador Zoellick (2003) posits, "there are some countries in the world that had an old think and that feel that political relationships are going to give them what they want economically. And they won't. They have got to make the reforms."

Finally, US domestic politics influence the probability of starting negotiations. Indeed, the US is more likely to enter into negotiations if both Congress and President belong to the same party, *i.e.* Double Majority has a positive sign and is statistically significant. Also, as the coefficient of Multilateral Deadlock shows that the US is more likely to select LDCs that are members of multilateral agreements that are stalled. In this way the US seeks other forms of integration in the case of a multilateral deadlock.

The *second stage* of the Heckman model tests the impact of economic reforms on the probability of forming a PTA, analyzing a self-selected sample, *i.e.* the sample of those LDCs that have entered into negotiations with the US. In the outcome equation, results confirm the second hypothesis. Indeed, Services Liberalization and the three dummy variables capturing whether LDCs join international treaties that protect IPR have positive sign and are statistically significant. Specifically, Services Liberalization and Trademark Law Treaty are statically significant at a 99 per cent level, Brussels Convention at 95 per cent level, and Budapest Treaty at a 90 per cent level. Only IPR Legislation is not statistically significant. Moreover, both Global Reform (Model 6) and Trade Reform (Model 7) have positive sign and are statistically significant at a 99 percent and a 95 percent level, respectively.

Hence, the likelihood of signing an agreement with the US depends de-

cisively on the implementation of economic reforms by LDCs during the negotiation phase. This is the crucial finding of this paper. It implies that the US "recommends" specific economic reforms, which are largely in line with their interests, and only after having observed these reforms is the US ready to conclude a PTA with LDCs. This finding backs those scholars who claim that both the US (and the EU) dictates a hegemonic harmonization of regulatory policies (Lawrence, 1996). Also, it suggests that LDCs' leaders willing to implement economic reforms seek to improve their bargaining position toward those domestic interest groups that may block policy change by entering into a negotiation with the US. In sum, timing is crucial herein and both sides are aware of such fact. Sending even the *right sign* at the *wrong moment* is meaningless due to the lack of credibility faced by LDCs in sustaining economic reforms. However, the same *right sign* in the *right moment* is decisive for reaching a deal with the US. Finally, in line with previous work in the field (Baier and Bergstrand, 2004), distance has a negative sign and is statistically significant, confirming that geography plays a major role in the formation of PTAs. Conversely, the other control variables are not statistically significant.

So far, I have discussed the sign and the level of significance of the main variables. However, the impact of these covariates on the probability of both negotiating and forming a PTA is important as well (Table 6.6).[24] Regarding Services Liberalization, moving from a standard deviation below the mean to a standard deviation above the mean increases the likelihood of entering into a PTA with the US by 13 per cent. Similarly, joining the Brussels Convention, the Budapest Treaty, and the Trademark Law Treaty increases the probability of forming a PTA with the US by respectively 14, 27, and 66 percent. Especially the result of the last variable is quite remarkable and welcome since the Trademark Law Treaty has been one of the most important initiatives of the last years in relation to IPR (Samuels and Samuels, 1994).

[24]In calculating the predicted probability the value of the other variables is kept at their mean.

Table 6.6. Predicted probability of the main covariates evaluated at the mean of the other control variables. Predicted probability of Distance calculated in Model 5. Confidence intervals are in parentheses.

Main Continuous Covariates	$[\mu - \sigma, m + \sigma]$
Global Reform	.10 (.01, .24)
Trade Reform	.10 (.04, .16)
Service Liber.	.13 (.11, .26)
Distance	-.20 (-.35, -.12)
Main Dichotomous Covariates	[0, 1]
Trademark Law Tr.	.66 (.52, .80)
Brussels Con.	.14 (.02, .26)
Budapest Tr.	.27 (.04, 59)

Regarding the more general economic reforms, I focus on the predicted probabilities of the two main covariates: global reform and trade reform (Table 6). In relation to these variables, moving from a standard deviation below the mean to a standard deviation above the mean increases the likelihood of forming a trade agreement with the US by 10 percent for an LDC. In relation to Trade Reform, the results are even more remarkable. Then, I compare the impact of these main explanatory variables with an important control variable: Distance. Moving from a standard deviation below the mean to a standard deviation above the mean decreases the probability of forming a trade agreement with the US by 20 percent for an LDC.[25] Thus, the impact of my *signalling* variables is not only statistically significant, but also quite remarkable in terms of magnitude. In sum, despite the importance of other variables that have been already assessed, these findings add a more nuanced explanation of PTA formation compared to previous studies in the field.

[25]Predicted probability of Distance has been calculated in Model 5 (the highest among the models).

To conclude, a final aspect of the decision to implement a modified version of the Heckman model is worth noting. Specifically, the probit model with sample selection is a more accurate estimation technique than running two separate probit, only if the estimation errors in the selection equation are correlated with the estimation errors of the outcome selection. The likelihood ratio test, which I run following Plümper *et al.* (2005), demonstrates the superiority of the Heckman model over competing specifications, since ρ differs significantly from 0. Thus, the Heckman model is the only efficient and unbiased estimator in light of the theoretical model developed in this paper.

6.4 Robustness Checks

I undertook a series of tests to examine the robustness of the results shown in the previous section. First and foremost, the impact of the main variables on the formation of PTAs between the US and LDCs is re-examined using a Markov chain model. Indeed, the selection process of forming a PTA may also be described as a two-way transition process between different states over time. Herein only two possible states are analyzed, mirroring the theoretical framework: PTA negotiation and PTA formation.[26] Results of the Markov Chain model are roughly comparable with the previous findings. For instance, the estimation of the model that includes the Service Liberalization variable in Table 6.7 confirms the validity of the previous findings. Specifically, the α coefficient of Service Liberalization is not statistically significant, corroborating the hypothesis that the signaling theory plays no role in explaining the selection of trading partners from the US. On the other hand, the γ coefficients is statistically significant and has a positive sign. Thus, implementing economic reforms during the negotiation phase raises the likelihood of an LDC forming a PTA with the US. In sum, both hypotheses hold also with this different estimation.

[26]For further details of this model, see Chapter 2.

Table 6.7. The formation of preferential trade agreements, Markov Chain model clustered by dyads. Notes: robust standard errors are in parentheses. *** significant at 1 per cent, ** significant at 5 per cent, * significant at 10 per cent.

Covariates	α Pr(y = 1 | y = 0)	γ Pr(y = 1 | y = 1)
II Stage: PTA Formation		
Service Liber.	-.06 (.16)	1.43** (.68)
Distance		-1.30*** (.45)
Trade	-.004 (.09)	.16 (.16)
Democracy	-.04 (.05)	-.10 (.11)
Alliance	-.42* (.24)	-.73 (.53)
GDPpc	.04*** (.01)	
GDP	.12* (.07)	
GDP Growth	.001 (.01)	
US Troop	-.00 (.04)	
Double Major.	2.46*** (.35)	
Multil. Deadlock	.87*** (.27)	
Number of Observations	2444	80
R^2	.61	.19
Prob $\geq \chi^2$	1011.59 (.00)	18.62 (.00)
Log likelihood	-162.43	-34.61

Moreover, time dummies have been added to account for common external shocks, *e.g.* financial crises inside and outside the region. Finally, because several coefficients of the models estimated turned out not to be statistically significant, the estimation is run again excluding those variables. In all these cases, I get results that are very close to the those shown in previous tables.

6.5 Conclusion

Several studies in international political economy have shown that political changes, especially in the direction of democratization, constitute an important driver of trade policy. For instance, Milner and Kubota (2005) argue that countries that are democratizing are more likely to implement trade

liberalization. Moreover, Mansfield and Pevehouse (2008) claim that entering into international organizations, in general, and into trade agreements, in particular, can enhance the credibility of leaders' commitments to political reforms during the process of democratization. This chapter has shown that economic changes matter as well. In particular, LDCs that implement economic reforms during PTA negotiations are more likely to sign an actual agreement with the US. Conversely, there is no evidence that reform-oriented states are more likely to be selected by the US to enter into negotiations in the first place. This finding implies that regarding LDCs the US is not interested in signals of a pro-investment climate, but rather in dictating its own conditionality in line with precise economic preferences and in changing specific regulations from which US companies gain concrete benefits. Knowing this, LDCs' governments propose to enter into PTA negotiations to secure radical reforms that would otherwise be blocked by powerful interest groups. Since the claim that North-South PTAs are effective tools to lock-in unpopular economic reform is widely made in the field (Hoeckman, 2005; Rodrik, 1989; Whalley, 1998), this is a crucial result of my study.

Moreover, the chapter shows that economic factors and US domestic politics have a major impact on the US's decision to enter into PTA negotiations with LDCs. In particular, as the GDP and GDPpc of a developing country increases and when both president and congress belong the same party, the probability that the US will negotiate a PTA rises significantly. Surprisingly, there is little evidence that security issues are an important driver of US bilateralism. However, since security issues are such a broad category, the operationalization of this variable is quite tricky. Thus, further studies should deepen the analysis of this specific determinant of US bilateralism.

Finally, this chapter has interesting policy implications. First, US bargaining strategy bolsters significantly the effectiveness of its own conditionality. For instance, comparing the US's approach to the EU's approach, recent studies have shown that by setting the date of accession to candidate countries, the EU weakens its bargaining position and increases applicants'

incentive to defect (Steunenberg and Dimitrova, 2007). Conversely, by linking so strictly the implementation of economic reforms to the conclusion of a PTA, the US maximizes more effectively its asymmetric bargaining power during negotiations, reaping higher payoffs from its agreements. Second, by acting as a "bad cop", the US indirectly helps those LDCs' governments that are seriously committed to pursuing economic reforms. Indeed, LDCs can increase their bargaining power vis-à-vis domestic interest groups by tying their hands during negotiations and blaming the US for forcing them to modify some laws that they were eager to change in any case. Third, outside of the trade realm, the formation of other international agreements may be also driven by the implementation, or the desire for implementation, of economic reforms following a similar logic to the one developed here.

Chapter 7

Democratization and Trade Policy

Introduction

The previous chapters have examined which domestic institutions matter for regional integration. In doing so, the emphasis has been on the formation of trade blocs *per se*. However, PTA formation may be viewed within the more general framework of trade liberalization. This being true, the relationship between domestic institutions and trade policy is still a controversial one. Indeed, despite empirical and historical evidence that democracies are more likely to implement trade liberalization (Milner and Kubota, 2005; Verdier, 1998), several authors (Rodrik, 1995b; Haggard, 1990) have challenged this argument. Moreover, several important cases contradict the simple relationship of more democracy, more liberalization, suggesting that other factors play a significant role. For instance, why was autocratic France more open than the democratic US in the first half of the nineteenth century? Further, why were autocratic Asian countries more open than India, the largest democracy in the world, during the 1980s?

This chapter contributes to this vibrant debate by focusing on *regional liberalization.*[1] Herein, I ask the following research question: how does democ-

[1]By *regional liberalization* I refer to the formation of preferential trade agreements,

ratization affect the formation of preferential trade agreements? In answering this question I limit the analysis to developing countries and explore the impact of democratic transition not only in time, but also in space. Indeed, the well-established finding that democracy spreads by proximity (Gleditsch and Ward, 2006) begs an empirical analysis that also takes into account the spatial effect of democratization.

The reasons for focusing on this research question issue from the fact that the impact on economic integration of large-scale changes in political institutions, especially in the direction of democratization, has been given surprisingly little consideration in the PTA literature.[2] The fact that the sudden rush to regionalism closely followed the third wave of democratization,[3] which raised the number of democratic regimes from approximately 30 in 1975 to 120 in 2002 (Milner and Kubota, 2005), suggests that the two types of reform may be related. The chapter fills this gap in the field by quantitatively testing three hypotheses related to democratic transition and regional integration. It does this by using a battery of econometric tools and an original dataset that covers 136 developing countries from 1990 to 2007.

The argument developed herein is that the process of democratization in LDCs constitutes an important factor in the formation of regional arrangements. Specifically, when compared to unilateral and multilateral trade liberalization, forming a PTA involves lower political costs for decision-makers. Thus, under the assumption that democratization forces political leaders to implement trade liberalization to please the median voter, the decision to form a PTA is usually the easiest and the most feasible to execute. However, and in line with recent findings in international trade literature (Kono, 2008; O'Rourke, 2007), democratizing LDCs are more likely to form a PTA

both bilateral and plurilateral. The term *regional* must not be misread, however. Indeed, I extend the analysis not only to countries that are both in the same geographical region, but also to countries that are placed in different continents.

[2]See Mansfield and Pevehouse (2008) for an important exception to this claim.

[3]Huntington (1991) identifies the third wave of democratization as having begun in 1974.

only with richer countries, whereas there is little evidence that democratic transition affects the probability of joining a PTA with other LDCs. This result follows naturally from median voter preferences and the Hecksher-Holin and Stolper-Samuelson theorems. Put simply, the median voter gains from trading with the former states and loses from trading with the latter states. Finally, in the presence of a cluster of democratization in a given historical period, neighboring countries are likely to share an interest in liberalizing trade, thereby easing the bargaining process, which generally represents the main obstacle to the formation of a PTA.

This chapter is structured as follows. The following section describes the theoretical framework that constitutes the basis of the discussion. The second section develops the hypotheses. The third section 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.

7.1 Background and Theory

One of the most important trends 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 tendency, three main arguments that focus on domestic politics have been made. First, 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. Second, other scholars argue that political and economic institutions are central to explaining trade liberalization (Mansfield and Busch, 1995; Rodrik, 1995a; 1995b; Verdier, 1998). In particular, in opposition to studies that claim that the preferences of actors play the decisive role, this part of the literature argues that institutions aggre-

gate such preferences and that different institutions do so differently, thereby leading to distinct outcomes. Finally, a few studies have tried to combine domestic preferences and political institutions (Gilligan, 1997; Milner, 1997).

This chapter focuses mainly on the role of political institutions in trade liberalization. My argument is similar in spirit to those of Milner and Kubota (2005) and Kono (2008). In particular, I move from the assumption that the third wave of democratization has contributed to the movement toward free trade among countries. I am aware of the fact that this argument is contested and that some studies have challenged its validity. However, several n-large studies have corroborated the hypothesis that democratization leads to trade liberalization (Costa Tavarez, mimeo; Milner and Kubota, 2005), including several works focused on specific regions, such as Latin America (Murillo, 2001; Weyland, 2002).

The mechanism that supports this intriguing thesis is based on the Hecksher-Holin and Stolper-Samuelson theorems, which explain the effects of free trade on income distribution among productive factors. Moreover, the thesis put forward by Bueno de Mesquita *et al.* (1999) that democratization involves the expansion of the winning coalition links the previous two theorems to policymakers' decisions. Generally speaking, the size of the winning coalition 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 but poor in capital and usually trade with developed countries, which are well endowed with capital but less so with regard to labour. Thus, according to the Heckscher-Ohlin and Stopler-Samuelson theorems, in de-

veloping countries a protectionist trade policy benefits the 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 do occur, are not fair. However, when democratization occurs, 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 become an appealing tool to gain electoral consensus. Indeed, lowering tariffs increases the income of workers employed in export-oriented firms, which 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 weight this paper gives to this assumption, it is worthwhile to remark two 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 holds only for developing countries. Moreover, the aforementioned mechanism works independently of any further specification of different types of labour factor. Other studies (Goldin and Katz, 1998) extend the above analysis by considering capital, skilled and unskilled labour as the relevant factors of production, which will be taken into account in the following section.

7.1.1 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 mentioned above. 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 (1990), 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, 1995b). 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 policymakers. The term *political costs* can 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 terms of loss of electoral support among the selectorate, e.g. labor forces and firms that produce labor-rich goods.*[4]

The political costs of trade liberalization have two main sources. First, 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 retaining office.

Second, trade liberalization often looks like a zero-sum game in which

[4]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.

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 *et al.*, 2004). Again, salary reductions for some workers are likely to have a negative effect on support for political elites.

7.1.2 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 of liberalization (Devlin and Estevadeordal, 2001).[5] Specifically, the first tier of liberalization arises at a unilateral level through the reduction of tariffs. The second tier operates at a multilateral level during the GATT/WTO Round negotiations. The third tier concerns regional integration. This chapter moves from an analysis of trade liberalization at a purely unilateral or a multilateral level to this third stage of liberalization.

Regional integration has two decisive advantages in comparison to the other forms of liberalization. First, the fiscal implications of preferential liberalization among neighboring LDCs are less onerous because the level of trade is usually low due to a history of protectionism (Devlin and Estevadeordal, 2001).[6] Moreover, although the reduction of tariffs can be significant in North-South PTAs, it is usually implemented gradually over a long period of time, allowing LDCs to adjust their fiscal systems. For instance, regarding

[5]The word tier as used herein does not imply any chronological order.

[6]In the 1980s, intraregional trade represented a mere 15 percent of the total amount of trade in Latin America and 30 percent in Asia. In the same period intraregional trade was more than 60 percent of the total amount of trade in Europe (sources ECLAC, 2005).

the reduction of Mexican tariffs in NAFTA, for most commodities there was a schedule over a ten or fifteen-year period during which trade barriers were phased out (Krueger, 1999: 4). 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 the costs and benefits of trade liberalization. Since the PTAs are usually "trade diverting", firms from each country within the trade bloc gain preferential access to the partners' market [7]. 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.

Indeed, the theoretical results 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 those linked to implementing unilateral or multilateral trade liberalization. In other words, regional liberalization lowers the threat of globalization (Devlin and Ffrench-Davis, 1999) compared to the two other tiers. Thus, when democratization occurs in developing countries and puts political leaders under pressure to remunerate a vast majority of voters in order to retain office, leaders prefer to choose regional integration as viable strategy to liberalize trade while minimizing political costs.

[7]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).

7.1.3 Hypotheses

The previous section explored the main reasons that, during a process of democratization, it may be expected that regional integration will produce lower political costs than other kinds of trade liberalization, such as unilateral and multilateral liberalization. Because regional integration reduces political costs, leaders are more likely to implement it without having to give up or even without having to fight against interest groups that oppose trade liberalization. Indeed, when political costs are small, or are perceived to be small, protectionists are more likely to acquiesce to regional integration, since they know government hasva strong incentive to implement it. Accordingly, the first hypothesis can be developed as follows.

HP1: As countries implement a process of democratization, the probability that they will form preferential trade agreements increases.

Kono (2008) develops the dyadic implications of Mayer's model.[8] Although they originally refer to unilateral trade liberalization, these implications also hold in relation to regional liberalization. Specifically, the Heckscher-Ohlin theorem states that a country i will import labor-intensive goods from a country j if the latter is relatively labor-abundant, but will import capital-intensive goods from country j if the latter is relatively capital-abundant. Thus, labor-rich median voters should seek protection against labor-abundant countries and should seek liberalization with capital-rich countries. In other words, median voters of an LDC i should agree with forming a PTA with a richer (developed) country and should oppose a PTA with other LDCs. Hence, since the process of democratization leads to the "median voter's dictatorship" (Hinich, 1977), governments that want to stay in power are forced to take these preferences into account in setting trade policy. In sum, a corollary of the previous hypothesis can be put as follows.

HP2: As countries implement a process of democratization, the probabil-

[8]For a similar analysis on the economic side, see O'Rourke (2007).

ity that they will join preferential trade agreements with richer countries is higher that the likelihood that they will form preferential trade agreements with other LDCs.

By taking into account the dyadic implications of the Heckscher-Ohlin theorem, the previous hypothesis draws attention to the fact that forming a PTA is a process that involves at least two countries. Hence, the concept of interdependence must also be taken into account. The process of decision-making 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).

Previous studies suggest that the process of democratization is contagious, *i.e.* changes of type of regime are transmitted by proximity (Colomer, 2000; Przeworski *et al.*, 2000). For instance, evidence of democratization clustering can be found in Latin America and Asia (Whitehead, 1996). As discussed above, trade liberalization is a valid policy for the purposes of gaining electoral consensus and regional integration is a relatively safe way to implement trade liberalization. Indeed, it is expected that if several neighboring 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.[9] In sum, since several countries in a given region have renewed incentives to liberalize trade, the cluster of democratization creates a favorable bargaining environment for the formation of PTAs. The third hypothesis can be therefore stated as follows.

HP3: The probability that countries will join a regional agreement increases in the presence of a democratization cluster.

[9]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.

7.2 Empirical Issues

To test the last hypothesis, it is necessary to discuss the notion of spatial correlation in relation to democracy. Positive spatial clustering of democracy arises when a democratic LDC is located in a region filled with other democracies. The G statistic, developed by Getis and Ord (1995), enables the measurement of the spatial context of democratization surrounding entities by indicating the extent of localized clustering around each observation.[10] This index has already proven to be effective in the context of the democratic peace literature (Gleditsch and Ward, 2000). Specifically, the G statistic for any variable x is given by the following:

$$G(d) = \frac{\sum_i^n w_i(d)x_i - \overline{x}\sum w_i(d)}{s\sqrt{\frac{\left[N\sum_i^n w_i^2(d) - (\sum_i^n w_i(d))^2\right]}{N-1}}} \tag{7.1}$$

Where the spatial matrix *w(d)* is a binary matrix of contiguities, *i.e.* each cell scores 1 if the two countries are closer than 950 kilometres; 0 otherwise.[11] The variable x is Democracy the operationalization of which was explained in Chapter 1.

The value returned by G is a z-value (Figure 7.1) 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. More specifically, observations above and below 1.96, (*i.e.* $\mid G \mid > 1.96$), display significant localized clustering of respectively high and low levels of democracy.[12] A high value of G indicates spatial correlation of democracy, *i.e.* a country that is a democracy surrounded by neighboring countries that are also democracies. A low value of G indicates spatial

[10] I have opted to use the G statistic rather than the G^*. 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. This choice does not affect my results.

[11] This range is in line with that used by Gleditsch and Ward (2000).

[12] Statistically significant at a 95 per cent level.

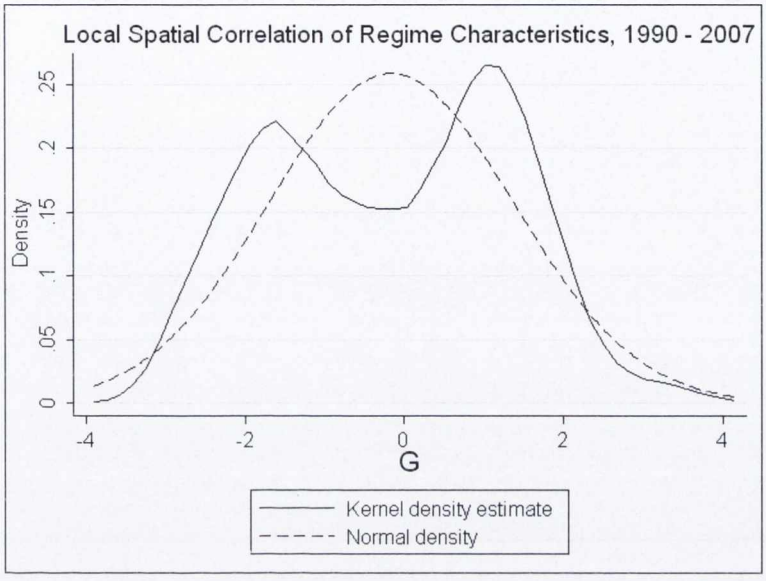

Figure 7.1. Localized Spatial Clusters of Democracy and Autocracy.

correlation of autocracy, *i.e.* a country that is an autocracy surrounded by neighboring countries that are also autocracies.

Figure 7.2 shows the evolution of local clustering in the distribution of democratization for Brazil and Czech Republic. For the positive points, and particularly for the significant ones (*i.e.* $\mid G \mid > 1.96$), the probability of the formation of a PTA is expected to increase. Specifically, since becoming a democracy is thought to have a positive impact on the probability of forming a regional bloc, countries that become democratic and that are placed in a region of countries that are also becoming (or that are already) democratic are likely to have a convergence of interests that facilitate economic integration. Not surprisingly, the G statistic is particularly strong in the case of Czech Republic, since the majority of the European countries are democracies in the period under investigation. Regarding Brazil, the G index always shows positive values, but is statistically significant only in the early 1990s, when Mercosur was formed.

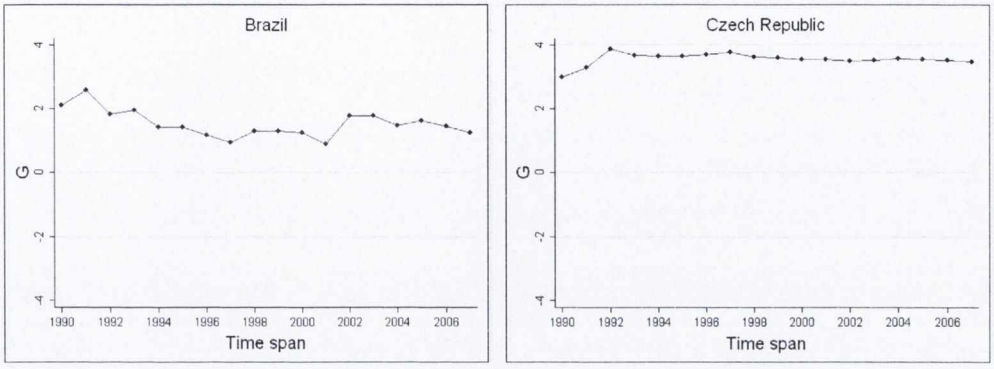

Figure 7.2. Local Spatial Correlation in Brazil and Czech Republic.

7.3 Model and Case Selection

In order to test the previous hypotheses, the following model has been built:

$$y_{ij,t} = \beta_1 X_{ij,t-1} + \beta_2 Z_{ij,t-1} + \epsilon_{ij,t}. \tag{7.2}$$

Where Y is the dependent variable, X is the vector of the covariates that capture LDCs' democratization and the G index, Z is the vector of control variables, and ϵ is the error term.

The dependent variable, PTA, has been already described in previous chapters as well as the control variables. Among the main covariates, the G index for democracy has been discussed in the previous section, while for each LDC i Democratization measures the total amount of change in level of democracy in the previous five or ten years, using the Freedom House dataset.[13] In this dataset, about 43 percent (5 years lag) and 58 per cent (10 years lag) of the dyads implement a process of democratization, *i.e.* show a positive variation in the democratic score according to Freedom House.[14]

[13]For a similar operationalization of democratization, see Gleditsch and Ward (2000).

[14]These two variables refer only to developing countries coherently with the aim of this

Table 7.1 shows the descriptive statistics of these two main explanatory variables.

Table 7.1. Descriptive statistics of the variables. Sources: (1) Freedom House; (2) Energy Information Administration - International Energy Annual (Shackman, 2005); (3) IMF dataset (2005); (4) Compiled by the author. Note: source of the variables included in previous chapters models is reported in Table 1.4.

Variable	Mean	Std. Dev.	Min	Max	No. of Obs.	Source
G democracy.	.20	1.32	-3.63	3.87	233,719	(1) (4)
Democrat.$_{t-5}$	.67	1.32	-6	6	233,719	(1)
Democrat.$_{t-10}$	1.20	1.89	-6	6	233,719	(1)
Democrat.$_{t-5}$ (DV)	.43	.50	0	1	233,719	(1)
Democrat.$_{t-10}$ (DV)	.58	.49	0	1	233,719	(1)
Trade Open.	7.54	8.27	.91	69.94	233,719	(2) (3)
PTA Count	27.36	19.83	0	96	136	
Trade	7.24	.14	6.38	7.34	136	
GDP	2.09	1.50	.10	6.18	136	
GDPpc	1.95	3.07	.03	16.65	136	
G democrat.	-.40	1.43	-3.16	3.48	136	
Democrat.$_{t-5}$	.04	.63	-2	3	136	
Democrat.$_{t-10}$ (10)	.24	1.30	-3	5	136	
Democracy	-4.37	-1.97	-1	-7	136	
WTO	.79	.41	0	1	136	
Diffusion	79.69	13.31	61	119	136	

The unit of observation consists of all undirected dyads of 167 countries. More precisely, in the dataset there are 132 developing countries and 35 developed economies. Dyads between North-North countries have been dropped (around 7700), since this study deals only with the process of democratization of LDCs. The rationale for keeping the North-South dyads is that LDCs that democratize may sign PTAs with other LDCs and with developed economies. In addition, such a design is crucial in order to test

study.

the second hypothesis. Thus, the dataset is a so-called *unbalanced dataset.* The analysis involves 18 years from 1990 to 2007.

To estimate Model 1, I use a Cox proportional hazard model,[15] In carrying out these analysis, I take into account also further PTAs signed by the same dyad, *i.e.* dyads do not drop from the dataset after a failure.[16] Finally, as already mentioned, due to panel heteroskedasticity or serial correlation, I use Huber standard errors in every estimation.

7.4 Empirical Findings

Table 7.2 shows the results of the econometric analysis for the Cox proportional hazard model. The positive sign of the Democratization coefficients confirms the first hypothesis, *i.e.* when countries move towards democracy, the probability of forming a PTA increases. The coefficient is statistically significant at a 99 percent level. 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. Since forming a PTA is a less dramatic way to liberalize than unilateral and multilateral liberalization, voters usually support trade blocs, as several surveys indicate. Thus, political leaders choose economic integration to remunerate their selectorate without threatening it. Figure 7.3 (left side) shows the impact of democratization using survival curve. When the process of democratization is very strong, *i.e.* the value of Democratization is maximum, the probability of forming a PTA increases by more than 10 percent from 1990 to 2007. The figure shows also that if democratization does not take place or autocratization occurs, the

[15]The rationale of this choice has been motivated rigorously in Chapter 1.

[16]To tackle the multi spells problem, I use a Cox proportional hazard model with the inverse Gaussian Frailty extension (see Chapter 2).

likelihood of a dyad surviving, *i.e.* not signing a PTA, is significantly higher than if democratization occurs.

Table 7.2. The impact of democratization on the formation of preferential trade agreements. Frailty Cox Proportional Hazard Model (multi spells) clustered by dyads. Notes: robust standard errors are in parentheses. ** significant at 1 per cent, * significant at 5 per cent.

Covariates	Model 1	Model 2	North-South Dyads	South-South Dyads
Democrat.$_{t-5}$	.10** (.02)			
Democrat.$_{t-10}$		.06** (.01)	.15** (.02)	-.01 (.02)
G Democrat.	.08** (.02)	.05** (.02)	.21** (.03)	-.04 (.03)
Democracy	.05** (.01)	.05** (.01)	.12** (.03)	.02 (.02)
Trade	.04 (.02)	.03 (.02)	.01 (.03)	.03 (.02)
GDPpc	-.02* (.01)	-.02* (.01)	-.02 (.01)	-.02 (.01)
GDP	.25** (.02)	.24** (.02)	.36** (.02)	.13** (.02)
GDP Growth	-.001* (.003)	-.01* (.003)	-.02** (.001)	-.003 (.004)
Economic Similarity	-.03* (.01)	-.03* (.01)	-.06** (.02)	-.01 (.02)
Alliance	.38** (.05)	.38** (.05)	.01 (.01)	.45** (.06)
Trade Disp.	-.92 (.58)	-.90* (.58)	-11.29* (10.50)	-.69 (.58)
Trade Disp. 3^{rd} Party	.06 (.06)	.02 (.06)	.27** (.09)	.18 (.10)
WTO	.24** (.05)	.23** (.05)	.62 (.11)	.09 (.07)
WTO Round	.78** (.10)	.82** (.09)	.20 (.16)	1.23** (.13)
Distance	-1.02** (.02)	-1.00** (.02)	-1.19** (.05)	-.94** (.07)
Contiguity	-.58** (.08)	-.57** (.08)	-1.63** (.16)	-.37** (.09)
Island	-.26** (.09)	-.23** (.08)	-.20** (.11)	-.17 (.11)
Colony	.21** (.06)	.21** (.06)	-.75** (.13)	.42** (.06)
Language	.20* (.07)	.23** (.07)	-1.11** (.13)	.18** (.07)
Religion	.10 (.05)	.11* (.05)	.13 (.07)	.12 (.06)
Diffusion	.004* (.002)	.004* (.002)	.02** (.002)	.01** (.002)
No. of Obs.	234,258	234,258	72,342	161,916
Number of Failures	2227	2227	699	1528

The results of North-South dyads versus South-South dyads provides further insights on the relationship between political changes and regional inte-

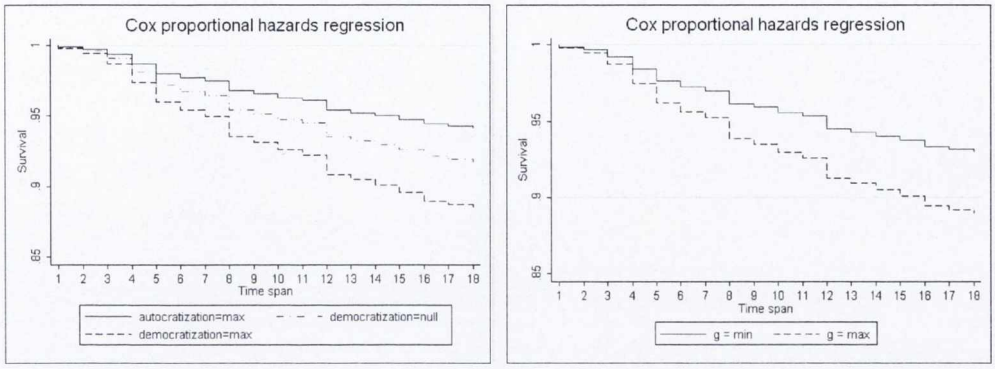

Figure 7.3. Survival estimates: democratization and G democratization.

gration. Specifically, the last two columns (right side) of Table 2 show that democratization is statistically significant only among North-South dyads, whereas it is not statistically significant among South-South dyads. In the case of North-South dyads the impact of Democratization on the formation of PTAs is higher than the impact of democratic transition pulling together all dyads. The probability of regional integration rises by 15 percent (versus 10 percent) when democratization increases by one unit. These findings partially confirm the second hypothesis.

There are two main explanations as to why democratization increases the probability of regional liberalization only among North-South dyads. The first explanation is that median voters of LDCs, who are well endowed in labor, fear trade liberalization with other LDCs, since the latter states have the same comparative advantage in producing labor-rich goods. Thus, implementing free trade with other LDCs jeopardizes median voter salary and in turn, the term of LDCs' governments. Hence, LDCs' governments avoid implementing liberalization during democratic transition. My findings complement those of Kono (2008) and O'Rourke (2007): whereas the former analyzes the combined effect of type of regime and level of development on unilateral trade liberalization, I examine the effects of democratization and level of development on regional liberalization. Second, recent studies (Mans-

field and Pevehouse, 2008) argue that during a democratic transition political leaders face a credibility problem, since they can benefit from reversing political reforms. Thus, joining an international organization helps to enhance the credibility of leaders' commitments to democratic reforms. However, as Mansfield and Pevehouse (2008) note, not all international organizations, and similarly not all PTAs, play this role. In particular, due to the imbalance of power, forming a PTA with developed economies such as the EU and the US ties the hands of political leaders more than joining a PTA with another LDC. In turn, the credibility of commitments is stronger in the former case than in the latter. This provides a further explanation as to why political elites seek regional integration with developed economies during a process of democratization.

The positive sign of the G Democracy coefficient further confirms the third hypothesis. Indeed, when a democratic LDC is surrounded by other democracies, 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 the case of several countries that experience democratization within a bounded geographical area, they have a common and simultaneous interest in trade liberalization and this condition creates a favorable bargaining environment for signing a PTA. Figure 4 (right side) shows the impact of democratization using a survival curve. When G Democracy is very strong, *i.e.* its value is maximum, the probability of forming a PTA increases by 10 percent across the 18 years under investigation. Finally, regarding control variables, the results thereof have been thoroughly discussed in previous chapters.

7.5 Robustness Checks

I performed a series of tests to examine the robustness of the results shown in the previous section. First and foremost, results presented above may be hampered by endogeneity. Indeed, several works have examined the im-

pact of economic liberalization on democracy (Lopez-Cordoba and Meissner, 2005). Although the majority of the recent studies seem to show that the effect of globalization on democracy is largely insignificant (Wu and Otto, 1999; Grosjean and Senik, 2007) and that the chain of causality is more likely to run from political to economic liberalization (Person, 2004; Giavazzi and Tabellini, 2005), I tackle this crucial issue using appropriate econometric tools. I run a bivariate probit model in which two binary response variable vary jointly: the formation of a PTA and the occurrence of democratization. This model is also known as a seemingly unrelated bivariate probit and in this case the equations are not independent since they are computed on the same set of subject.[17] The first model has been previously analyzed (Equation 1), whereas the second model has democratization as dependent variable. Specifically, I reshape the variable democratization as a dummy variable (Democratization DV) so that it scores 1 if a LDC is democratizing, *i.e.* when democratization has positive values, and 0 otherwise, *i.e.* when democratization has negative values or values equal zero. To explain democratization, I use GDPpc, GDP growth, Trade Openness ($\frac{trade}{GDP}$), and G democratization as covariates.[18] To account for the duration dependence of both dependent variables, natural cubic splines (with three knots) are included (Beck and Tucker, 1996; Beck *et al.*, 1998). In the interest of brevity, splines are reported in the econometric analysis.

Table 7.1 shows the descriptive statistics of Democratization DV and Trade Openness, whereas Table 7.3 reports the analysis of the bivariate probit. Results suggest that there is evidence of endogeneity between regional liberalization and democratization. Indeed, ρ is statistically significant and with positive sign, confirming that these two events are positively correlated. Despite this, five-year lag democratization is still statistically significant and has a positive sign, whereas ten-year lag democratization is no longer statisti-

[17]For an extensive analysis of the bivariate probit model, see Chun-Lo and Schmidt (1985), Greene (2003), and Poirier (1980). For an applications of this model, see Kucik and Reinhardt, 2006; Przeworski and Vreeland, 2002.

[18]For a similar specification of the model employed herein, see Costa Tavares, mimeo.

Table 7.3. The impact of democratization on the formation of preferential trade agreements and the impact of trade liberalization on democratization. Bivariate Probit clustered by dyads. Notes: robust standard errors are in parentheses. ** significant at 1 per cent, * significant at 5 per cent.

Covariates	Model 3	Model 4	North-South PTAs	
Democrat.$_{t-5}$	.01** (.01)		.11** (.01)	
Democrat.$_{t-10}$		-.00 (.001)		.03** (.01)
G Democrat.	.02** (.01)	.02** (.01)	.08** (.01)	.10** (.01)
Democracy	.01* (.005)	.01* (.005)	.06** (.01)	.05** (.01)
Trade	.03** (.01)	.03** (.01)	.02 (.01)	.02 (.01)
GDPpc	-.01** (.003)	-.01** (.003)	-.001 (.005)	-.001 (.003)
GDP	.09** (.01)	.09** (.01)	.17** (.01)	.16** (.01)
GDP Growth	-.002 (.001)	-.002 (.001)	.004 (.003)	-.001 (.002)
Alliance	.16** (.02)	.16** (.02)	.02 (.04)	.02 (.04)
Trade Disp.	-.42* (.21)	-.40 (.21)	-5.51** (.10)	-5.62** (.10)
WTO	.08** (.02)	.09** (.02)	.29** (.05)	.28** (.05)
WTO Round	.34** (.10)	.34** (.03)	.16** (.05)	.20** (.06)
Distance	-.52** (.02)	-.51** (.02)	-.57** (.02)	-.56** (.02)
Contiguity	-.15** (.04)	-.15** (.04)	-.80** (.15)	-.79** (.15)
Colony	.05 (.06)	.05 (.03)	-.26** (.08)	-.26** (.08)
Language	.17** (.03)	.18** (.03)	-.34** (.13)	-.36** (.13)
Religion	.07** (.02)	.07** (.02)	.04 (.04)	.03 (.04)
Diffusion	.004* (.001)	.003* (.001)	.0002(.001)	.001 (.001)
G Democrat.	.03** (.002)	.12** (.03)	.01** (.004)	.10** (.01)
GDPpc	-.03** (.002)	-.01** (.001)	-.02** (.001)	-.02** (.001)
GDP	.06** (.004)	.15** (.01)	-.03** (.01)	-.13** (.01)
GDP Growth	-.02** (.001)	-.003** (.001)	-.02** (.001)	-.004** (.001)
Trade Open	-.003** (.004)	-.002 (.001)	-.003** (.001)	-.01** (.001)
ϱ	.07** (.02)	.14** (.02)	-.03 (.03)	.13** (.03)
Rho $\geq \chi^2$	21.62 (.00)	80.40 (.00)	1.07 (.30)	16.44 (.00)
No. of Obs.	234,258	234,258	72,342	72,342
Number of Failures	2227	2227	699	699

cally significant. However, when only North-South dyads are analyzed, both five-year lag and ten-year lag democratization are statistically significant and with the expected sign. Thus, once controlled properly for endogeneity, there

is still some support for the first and second hypothesis. Finally, it is interesting to note that Trade Openness has a negative sign and is statistically significant. Thus, there is no evidence whatsoever that trade liberalization affects democratic transition in LDCs.

Second, as noted, G Democracy measures where there is spatial correlation in democracy. Thus, the G index simply affects the overall probability of an LDC i making an agreement, *independently of where the partner is located.* Two countries located in clusters of democracies have a higher probability of establishing a trade agreement, although LDC i is in totally different cluster from the other LDC j. For instance, it may be argued that there is no reason why clusters of democracies in Asia and in Latin America should increase the probability of a PTA between an Asian country and a Latin American country. To tackle this issue, I drop both the dyadic setting and the time dimension.[19] The dependent variable is now a variable that counts the number of PTAs signed by a LDC i. Then, I run a Poisson model with only few control variables due to the low number of observations.[20] Table 7.1 and Table 7.4 show respectively the descriptive statistic of the cross-section model and the analysis of the Poisson model. Results confirm that countries that are in a cluster of democracies are more likely to sign a large number of PTAs than countries that are not in a cluster of democracies. Moreover, and in line with previous findings, this effect is particularly strong for North-South PTAs. In sum, there is strong evidence that "democratization in space" is an important driver of regional liberalization in the realm of LDCs.

Furthermore, variables that capture democratization and G democracy are not strongly correlated with the other control variables, such as Distance, Contiguity and Democracy, as may have been feared. Thus, I can infer that the standard errors shown in the previous tables are indeed correct. Moreover, to account for common external shocks, *e.g.* financial crises inside and outside the region, time dummies have been added as well. Finally, because

[19]The cross-section analysis allows a further check of the endogeneity problem.

[20]Mansfield (1999) has a similar specification of the model implemented herein.

Table 7.4. The impact of democratization on the formation of preferential trade agreements. Poisson regression clustered by dyads. *** significant at 1 per cent, ** significant at 5 per cent, * significant at 10 per cent.

Covariates	Model 3	Model 4	North-South PTAs	
Democrat.$_{t-5}$	.04 (.06)		-.35 (26)	
Democrat.$_{t-10}$		-.04** (.02)		.02 (.09)
G Democrat.	.05** (.02)	.05* (.02)	.21*** (.07)	.21*** (.07)
Democracy	.02 (.02)	.02 (.02)	.22*** (.07)	.21*** (.07)
Trade	.12 (.25)	.13 (.25)	1.71 (1.35)	1.44 (1.29)
GDPpc	-.02 (.01)	-.02* (.01)	-.01 (0.7)	-.02 (.07)
GDP	.04** (.02)	.04** (.02)	-.08 (.10)	-.07 (.11)
WTO	.03 (.10)	.02 (.10)	-.52 (52)	.52 (.51)
Diffusion	.04*** (.002)	.04*** (.002)	.09*** (.001)	.09*** (.001)
Constant	-.76 (1.72)	-.87 (1.70)	-17.46* (9.82)	-15.26 (9.45)
R^2	.53	.53	.68	.67
No. of Obs.	136	136	136	136

several coefficients of the models estimated were found not to be statistically significant, the estimation is run again excluding these variables. In all these cases, results obtained are very close to those shown in previous tables.

7.6 Conclusion

This chapter represents a further step towards understanding the impact of democratization on trade policy. By distinguishing among the three tiers of liberalization (Devlin and Estevadeordal, 2001), unilateral liberalization, multilateral liberalization, and regional liberalization, I explain the reasons why legislators choose the latter policy during a process of democratization. In general terms, this study provides further evidences that democracies "fancy" free trade. It does this by looking at democratic transition, *i.e.* the dynamic movement toward a democracy, rather than by looking statically at the type of regime. Moreover, it does so by limiting the analysis to LDCs that

have specific economic features in terms of factors of production endowments.

In more specific terms, this study confirms that domestic politics matter in economic integration. The main findings can be summarized as follows. First, the probability of forming a PTA increases among states that experience democratization. During a process of democratic transition LDCs governments have to remunerate the median voter to stay in power. A way to do this is to export labor-intensive goods and in doing so, to increase the salary of people endowed in labor, *i.e.* the median voter. However, this mechanism holds only for North-South PTAs, whereas there is little evidence that democratic transition affects the likelihood of PTAs being formed among LDCs. This result follows naturally from the fact that the median voter benefits from trading with developed economies that are capital-rich, but is harmed by trading with other LDCs that are labor-rich. Finally, the "neighbor effect" plays a significant role in economic integration. Local clustering of high values of democracy increases the likelihood of states joining a PTA. This finding confirms the validity of the diffusion effect that has been successfully applied in several studies in the recent years (Elkins *et al.*, 2006; Egger and Larch, 2006).

Chapter 8

Conclusion

This final chapter has three purposes. The first is simply to summarize the main findings obtained in the previous chapters. The second purpose is to discuss some broader implications of the theory and results presented in this project. In particular, on the policy side these findings make some interesting, and somewhat optimistic, predictions concerning the future of regional cooperation, especially in relation to developing countries. Finally, I conclude by discussing how the analysis presented herein could be extended and expanded by future research.

8.1 Summary of the Basic Argument

This project has been organized around a primary research question. How do domestic politics affect the formation of preferential trade agreements? The aim has been to describe the new regionalism using the political system of countries involved as leverage. In summarizing the results, I split this general enquiry into two somewhat more specific questions concerning institutions on one side and interest groups on the other side. Furthermore, some analyses involve all countries, whereas others are limited to developing countries and their relationships with the two main global economic powers, *i.e.* the EU and the US. Thus, I report findings separately for these two sets of countries.

It is worth noting that these different explanations of the new regionalism complete rather than conflict one another, highlighting the complexity of the phenomenon.

Regarding domestic institutions, the main findings of this project are that both institutional similarity among countries and quality of institution - a high level of transparency, especially - are important. This is the crucial result of this paper and concerns both developed economies and developing countries. Chapter 2 has shown that political and economic transparency of a single country impacts significantly upon the probability of regional integration. Moreover, that chapter has illustrated that once transparency is controlled for, there is little evidence that electoral accountability affects the likelihood of forming a PTA. This is an interesting (negative) finding, since Mansfield *et al.* (2002) have identified in the latter institutional device as the reason why democracies cooperate more than non-democracies in the international system. However, despite the importance of my finding, two concerns must be taken into account. First, electoral accountability may still have an indirect effect on international cooperation by increasing transparency. Second, the relationship between transparency, electoral accountability, and regional integration should be tested over a wider time-span.

Chapter 3 shifts attention onto institutional similarity among countries. Since the formation of a PTA involves a relationship between at least two states, not only are the features of each single state important, but the characteristics of each state in relation to the others must be taken into as well. The argument developed in this chapter is that institutional similarity among countries raises the quantity and the quality of information available to potential trade bloc member states. In turn, this eases the process of regional integration. However, by combining the latter findings with results obtained in Chapter 2, I have shown that institutional similarity matters only if it is combined with high quality institutions - for instance with high degree of rule of law. This is good news for the EU and obviously helps to explain its success as trade bloc. However, this is a positive finding for African countries

engaged in a troubled process of integration that mirrors that implemented by Europe fifty years ago.

Regarding interest groups, Chapter 4 coauthored with Andreas Dür has presented the protection-for-exporters argument to explain the proliferation of PTAs. We have shown that the new regionalism is driven by countries responding to trade diversion. Specifically, exporters excluded from trade agreements react to their discriminatory effect by increasing their level of political activity. In turn, due to this changing balance of domestic interests governments become sensitive to exporters' concerns and form other preferential trade agreements to neutralize the discrimination faced by exporters. Hence, this leads to a domino effect. The findings have strongly indicated that the formation of preferential trade agreements is indeed an interdependent process. This interdependence has been largely specified as a function of countries responding to the negative externalities of existing agreements.

Results of Chapter 5, Chapter 6, and Chapter 7 focus on developing countries and their relationship with the EU and the US. Chapter 5 offered an empirical argument to explain the formation and the design of bilateral trade agreements between the EU and LDCs. Specifically, political and economic transparency in LDCs allows the EU to distinguish whether a defection is a result of serious domestic problems faced by LDCs or opportunistic behavior. Moreover, I show that domestic variables are important drivers in the formation of BTAs between the EU and LDCs. Specifically, by easing the enforcement phase, high economic and political transparency in LDCs makes them more likely to reach an agreement with the EU. Finally, flexibility has recently become a core issue in international cooperation theory (Kucik and Reinhardt, 2008; Rosendorff and Milner, 2001; Svolik, 2007). Herein, I provide consistent and generalizable measurements of this concept that may be used in analysis of other international organizations.

Chapter 6 showed that economic changes act as signals that LDCs send to the US in order to reach a BTA. However, these signals work effectively only

if they are sent at the right moment. In particular, LDCs that implement economic reforms during PTA negotiations are more likely to sign an actual agreement with the US. Conversely, there is no evidence that reform-oriented states are more likely to be selected by the US to enter into negotiations in the first place. This finding implies that regarding LDCs the US is not interested in signals of a pro-investment climate, but rather in dictating its own conditionality in line with precise economic preferences and in changing specific regulations from which US companies can gain concrete benefits. Knowing this, LDCs' governments propose to enter into PTA negotiations to secure radical reforms, which would otherwise be blocked by powerful interest groups. Hence, in line with a popular claim in the field (Hoeckman, 2005; Rodrik, 1989; Whalley, 1998), Chapter 6 demonstrated that PTAs are effective tools to lock-in contested economic reform.

Finally, Chapter 7 explored how democratization impacts upon the probability of a trade bloc being formed. The argument is that democratizing LDCs' governments need remunerate the median voter to stay in power. One manner of doing this is to export labor-intensive goods and, in doing so, to increase the salary of people endowed with labor, *i.e.* the median voter. Statistical results showed that democratization increases the likelihood of formation of only North-South PTAs, whereas there is little evidence that democratic transition affects the likelihood of PTAs being formed among LDCs. This result can be explained by the fact that the median voter benefits from trading with developed economies that are capital-rich, but is harmed by trading with other LDCs that are labor-rich, as previous studies argue (Kono, 2008). A crucial finding of this chapter, is that local clustering of high values of democratization increases the probability of states joining a PTA. Thus, the diffusion effect of democratic transition that has been explored in several studies in the recent years (Gleditsch and Ward, 2006) is shown to be salient with respect to trade policy of LDCs.

8.2 Domestic Politics and New Regionalism: Policy Implications

Some discussion on the policy implications of the statistical results hereof has been already provided in the previous chapters. Herein, I will limit my conclusions in this regard to some suggestions as to how these findings could be interpreted vis-à-vis "real world" scenarios. In a oft-cited article published in the *Journal of Economic Growth* Rodrik *et al.* (2004: 135) stress that "institutions rule... in economic development" and that "the quality of institutions "trumps" everything else", *e.g.* trade and geography. The importance of economic and geographical variables in the formation of PTAs does not lead to the same unequivocal conclusions. However, by showing that institutions do matter in regional integration, I suggest that governments should take them into account if and once they intend to cooperate in the international arena. More specifically, I group these suggestions in two headings.

First, this project implies that there are substantial gains to be made from improving the quality of institutions. These gains are well established in terms of economic growth, as indeed the Rodrik *et al.* (2004) article shows, but also relevant in relation to economic cooperation. If the demand for regional integration arises to reap benefits from economies of scales and to reduce transaction costs, as Mattli (1999) posits, governments that have high quality institutions are more likely to match this demand and in turn, improve their economic performance. Conversely, governments with low quality institutions are not able to capitalize on the opportunity that regional integration presents and in turn, risk lagging even further behind in terms of economic growth. In sum, endogenous institution building is crucial for cooperation.

The difficulties of reaching a trade agreement between the EU and the African, Caribbean, and Pacific (henceforth, ACP) countries illustrate some

issues of the debate surrounding the role of quality of institutions. Regarding the ongoing PTA negotiations between the EU and ACP countries, the latter are concerned about two crucial issues: the lack of safeguards for infant industries and the inclusion of provisions related to investment, services, etc. (Oxfam Press, 20^{th} December 2007)[1] Institutions are likely to have a role in both these issues. Indeed, EU reluctance to include safeguards may be explained by the difficulties in monitoring ACP countries, the majority of which have rather opaque domestic systems. Due to this lack of transparency, the EU cannot determine if these safeguards are used to defend infant industries in accordance with the rationale of the provision or constitute purely free-rider behavior. Similarly, LDCs' reluctance to include provisions on trade-related sectors such as investment and services may be explained by the large adjustment costs that ACP would face to match EU standard. Costs are (or are perceived to be) higher than the benefits produced by the agreement. In other words, as posited in Chapter 3, dissimilarities between EU and ACP countries' institutions are too significant to make a trade agreement convenient.

In this sense it is not surprising that 14 Caribbean countries, which have higher quality institutions compared to African and Pacific countries, finally reached an Economic Partnership Agreement with the EU on the 16^{th} of December 2007, whereas for the remaining 51 countries the negotiation is currently in a deadlock. In sum, assuming that signing a PTA with the EU is good for development, countries with good institutions have a comparative advantage over the others; such an advantage may be used to obtained the best deals that a globalized economy offers.

Second, something must be said about timing. This project suggests that it is desirable for countries to undertake policy innovations that eventually result in an improvement of their institutions first, and then carry out a process of economic integration. Despite evidence that regional integration leads

[1]The document is available at http://www.oxfam.org/en/node/251 [consulted on the 13^{th} of July 2009].

to policy convergence (Risse, *et al.*, 2001), I argue that the formation of a trade bloc is easier, smoother, and less costly if some kind of convergence is reached before starting the bargain process rather after having joined a PTA. The classic example that fits into this pattern is the experience of the EU, which is constituted by fairly homogeneous high-quality-institution member countries. Conversely, the lack of similar institutions -between Singapore and Myammar, for instance - may explain the difficulties in the integration process experienced by the ASEAN Pact since its foundation in the 1960s.

A final consideration involves an optimistic view of regional integration and more generally of international cooperation. Although some authors (Garrett, 1998; Mosley, 2000) argue that a convergence of domestic institutions is hard to find during this era of globalization, there is evidence of policy convergence as a result of parallel domestic forces (Banting *et al.*, 1997), emulation (Baturo and Gray, 2009; Swanke, 2006), and common interests among great powers that act in concert (Drezner, 2007). If this is true and if the arguments developed in this project hold, cooperation should be less problematic in the future. However, it is more difficult to forecast if the quality of institutions will improve among LDCs. While there is some evidence that Asian countries and Latin America countries have improved their domestic political system since the 1990s (Grigorian and Martinex, 2000), African countries show a much less consistent record over the last two decades (Méon and Sekkat, 2004).

8.3 Looking Ahead

Given the prevalence and importance of non-trade issues in the current wave of regionalism (Limao, 2006), future research should investigate the impact of domestic politics not only on the formation of PTAs, but also on the scope, and in general the design of an agreement. So far, few studies (Haftel, 2007; Hicks and Kim, 2009; Hufbauer and Schott, 1994;) have tried to operationalize PTAs in such a way and to author's knowledge this effort involves only

a limited number of PTAs to date.[2] Measuring the depth of integration will require an examination of the sector-by-sector integration of PTA treaties.

Such an operationalization would help to address new research questions in this area. Regarding domestic institutions, the impact of institutional similarity and quality of institutions is likely to vary from sector to sector. Moreover, it may be expected that the combined effect of institutional similarity and quality of institutions will have a decisive role in scope of the agreements. Thus, assuming that regional integration increases economic efficiency, deepening a trade bloc is expected to improve economic performances of countries and firms. In turn, by looking at the scope of trade blocs I could identify which trade blocs are successful and which are not. As a result of the heterogeneity of PTAs, exploring the conditions under which some trade blocs evolve and some others do not is a topic that few studies have addressed.[3]

Regarding interest groups, it would make sense to consider that some dyads may deepen their agreements in response to other dyads concluding agreements, and that the deepening of an agreement may have a similar effect as the signing of the initial agreement. The Single Market Program, for example, which led to the removal of remaining barriers to intra-European trade, arguably increased interest among Mediterranean countries in signing a trade agreement with the EU. In sum, if "regionalism is here to stay" (Baldwin, 2006: 1), new challenges and unsolved questions lie ahead.

[2]Estevadeordal and Suominen's dataset (2007) represents an important exception to this claim.

[3]Using a gravity model, Holmes, (2005: 1) implements an econometric analysis to identify the "trade agreements that work".

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Appendix A

Solution Concepts: Formal Model

The payoffs of the sub-game are graphically summarized below:

Lemma 1: If $\pi - k - h < 0$, then the only equilibrium outcome is not to form any PTA.

Proof: For country i, the dominant strategy is to form a PTA at its own condition. If country j decides to form a PTA at i's conditions, i's utility to form an agreement at its own condition is greater than forming a PTA at j's conditions ($\pi - k > -k$, since $\pi - k > 0$ by assumption). If country j decides to form a PTA at its own conditions, neither i's utility to form an agreement at its own condition nor i's utility to form an agreement at j's condition are subgame perfect equilibria. Indeed, since $-k < 0$ and $\pi - k - h < 0$, by backward induction i's decides not to propose an agreement to j in case j decides to form a PTA at its own conditions. Thus, since this is a symmetric game, there is no possibility to have the formation of a PTA as Nash equilibrium. *QED*

Lemma 2: If $\pi > h + k$, the probability of forming a PTA is an increasing function of π and a decreasing function of h.

Proof: There are three Nash equilibria: j agrees to form an RIA at i's condition, i agrees to form a PTA at j's condition, and a mixed-strategy equilibrium. Regarding the mixed-strategy equilibrium, let be ρ the probability that i decides to form an PTA at its own standard. Thus, i chooses a value of *rho* such that j is indifferent to its possible strategy set (form a PTA at i's condition or form a PTA at its own conditions). Therefore, i chooses ρ such that:

$$\rho(\pi - h - k) - (1 - \rho)k = -\rho k + (1 - \rho)(\pi - k) \tag{A.1}$$

$$\rho\pi - \rho h - \rho k - k + \rho k = -\rho k + \pi - k - \rho\pi + \rho k \tag{A.2}$$

Simplifying the terms of the equation, we get:

$$2\rho\pi - \rho h = \pi \tag{A.3}$$

$$\rho = \frac{\pi}{(2\pi - h)} \tag{A.4}$$

By symmetry, ρ is also the probability that j chooses to form an PTA at its own conditions. The probability of a coordinate equilibrium P=P (forming an PTA at j's conditions) + (forming a RIA at i's condition) equals $2\rho(1 - \rho)$. Substituting, we get:

$$\text{P(coordinated equilibrium)} = 2\rho(1 - \rho) = \frac{(2\pi^2 - 2\pi h)}{(2\pi - h)^2}$$

Changing the values of π and c does affect the probability of a coordinated equilibrium occurring in the mixed-strategy outcome. Partial differentiation shows that:

- $\frac{\partial P}{\partial \pi} > 0$
- $\frac{\partial P}{\partial h} < 0$

Thus, P (coordinated equilibrium) increases with π and decreases with c. *QED*

Appendix B

PTA Flexibility I

The number of provisions, P_i, in treaties is given by the number of their articles (including annexes). Thus, unlike Franchino (2004), numbered paragraphs, subparagraphs, and indents are not counted. Two main reasons have contributed to this decision. First, this action eliminates several discretionary decisions, since distinguishing part of the article is more difficult in the case of a PTA than it is in the case of a piece of EU legislation. Second, as the table below shows, there is a good variation in the number of articles across PTAs. The definition of a discretionary provision, D_i, is any provision that gives to the trade partner of the EU the authority to temporarily suspend the compliance of a specific PTA article. Note: if in the same article two different sentences contain a discretionary provision, they are counted twice in the index D_i. Examples of flexibility include:

- Exceptional macroeconomical or financial circumstances
- Exceptional measures of limited duration
- Serious difficulties that produces social problems
- Serious balance of payment difficulties
- Serious internal circumstances affecting rule and order

- Serious international tension
- Safeguard measures for infant industries

For each country i, the Flexibility Index 1 (FI1), $FI1_i$, is given by the following ratio:

$$FI1_i = \frac{D_i}{P_i} \tag{B.1}$$

Table below provides more details for each PTA signed by EU with a LDC.

Table B.1. List of PTAs between the EU and LDCs included in the analysis and Flexibility Index.

Country	No. Discret. Provis.	No. Art.	Annexes	FI1
Bulgaria	34	125	Yes	0.27
Chile	33	206	No	0.16
Croatia	39	52	No	0.56
Czech Republic	34	124	Yes	0.27
Estonia	30	50	No	0.60
Hungary	40	124	Yes	0.32
Israel	32	85	Yes	0.38
Jordan	34	159	No	0.21
Latvia	28	51	No	0.55
Lebanon	21	42	No	0.50
Lithuania	29	52	No	0.56
Macedonia	34	128	No	0.27
Mexico	31	50	No	0.62
Morocco	39	156	Yes	0.25
Poland	34	122	No	0.28
Romania	35	126	No	0.28
Slovakia	33	124	No	0.27
Slovenia	32	51	No	0.63
Tunisia	42	156	Yes	0.27
Turkey	18	65	No	0.28
South Africa	31	109	No	0.28

Appendix C

PTA Flexibility II

The Flexibility Index 2 (FI2), $FI2_i$, is given by the following:

$$FI2_i = \frac{SC_i + ADP_i}{9} \tag{C.1}$$

where SC is safeguard clauses, ADP is anti-dumping provisions, and 9 is given by the maximum value of sum between SC and ADP. Regarding the safeguard clauses, the index SC is the result of the following characteristics, *i.e.* if the provision is included, the value of the index augment by 1 and 0 otherwise:

- Do safeguard clauses cover serious *social* difficulties?
- Do safeguard clauses cover serious *economic* difficulties?
- Do safeguard clauses cover serious difficulties related to a *specific product*?
- Do safeguard clauses cover serious difficulties related to a *infant industries*?
- Do safeguard clauses cover serious difficulties related to a *specific sectors*?

Regarding the anti-dumping provisions, the index ACP is the result of the following characteristics, *i.e.* if the provision is included, the value of the index augment by 1 and 0 otherwise:

- Do general provisions allow retaliation in case dumping takes place?
- Do specific provisions allow retaliation in case dumping takes place?
- Do provisions allow the use of countervailing duties?
- Do provisions allow retaliation in case of subsidies?

Tables below summarize the results of the manual coding:

Table C.1. List of PTAs between the EU and LDCs included in the analysis and Safeguard Clauses. Note: * financial sector; ** steel industry; † agricultural sector; ‡ IPR

Country	Social	Economic	Single Product	Infant Indust.	Specific Sect.
Algeria	yes	yes	yes	yes	no
Bulgaria	yes	yes	no	no	no
Chile	no	no	yes	no	yes*
Croatia	no	yes	yes	no	no
Czech Republic	yes	yes	yes	no	no
Egypt	no	yes	no	no	no
Estonia	yes	yes	yes	no	no
Hungary	yes	yes	yes	no	yes**
Israel	no	yes	yes	no	yes†
Jordan	yes	yes	yes	yes	no
Latvia	yes	yes	yes	no	no
Lebanon	yes	no	yes	no	no
Lithuania	yes	yes	yes	no	no
Macedonia	yes	yes	no	no	no
Mexico	no	yes	yes	no	yes‡
Morocco	no	yes	yes	yes	no
Poland	yes	yes	yes	no	no
Romania	yes	yes	yes	no	no
Slovakia	yes	yes	yes	no	no
Slovenia	yes	yes	yes	no	no
Tunisia	yes	yes	no	yes	no
Turkey	no	yes	no	yes	no
South Africa	yes	no	no	no	no

Table C.2. List of PTAs between the EU and LDCs included in the analysis and Anti-dumping, Countervailing, and Subsidies Provisions. Note: * art. 36.2; ** art. 36.2; † art. 37.2; ‡ art. 28.3b

Country	AD - General	AD - Specific	Countervailing	Subsidies
Algeria	yes	no	no	no
Bulgaria	yes	no	no	no
Chile	yes	no	yes	yes
Croatia	yes	no	no	yes
Czech Republic	yes	no	no	no
Egypt	no	no	no	no
Estonia	yes	yes*	no	no
Hungary	yes	no	no	no
Israel	yes	no	no	no
Jordan	yes	no	no	no
Latvia	yes	yes**	no	no
Lebanon	yes	no	yes	no
Lithuania	yes	yes†	no	no
Macedonia	yes	no	no	no
Mexico	yes	no	yes	yes
Morocco	yes	no	no	no
Poland	yes	no	no	no
Romania	yes	no	no	no
Slovakia	yes	no	no	no
Slovenia	yes	yes‡	no	no
Tunisia	yes	no	no	no
Turkey	yes	no	no	yes
South Africa	yes	no	yes	yes

Table C.3. List of PTAs between the EU and LDCs included in the analysis and Flexibility Index 2.

Country	SC	ADP	FI2
Algeria	4	1	0.55
Bulgaria	2	1	0.33
Chile	2	3	0.55
Croatia	2	2	0.44
Czech Republic	3	1	0.44
Egypt	1	0	0.11
Estonia	3	2	0.55
Hungary	4	1	0.55
Israel	3	1	0.44
Jordan	4	1	0.55
Latvia	3	2	0.55
Lebanon	2	2	0.44
Lithuania	3	2	0.55
Macedonia	2	1	0.33
Mexico	3	3	0.66
Morocco	3	1	0.44
Poland	3	1	0.44
Romania	3	1	0.44
Slovakia	3	1	0.44
Slovenia	3	2	0.55
Tunisia	3	1	0.44
Turkey	2	2	0.44
South Africa	1	3	0.44