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Understanding the Determinants of Economic Integration in Latin America

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Abstract

When signing or enhancing trade agreements with Latin America, political and institutional factors play a more important role at present compared with their role in the past. In addition, a better institutional framework increases covered and legally enforceable provisions in Latin America trade agreements. This paper analyzes the determinants of economic integration in Latin America and the institutional quality of signed trade agreements with this region. By focusing on both a discrete choice and a linear framework, the study results prove that economic, geographic, institutional, and political factors influence economic integration. This is because these aspects are key elements in the formation and enhancement of trade agreements both within and outside Latin America. This study considers the role of additional exogenous political facts, such as the September 11 attacks in New York City, and the *Revolución Bolivariana*, a leftist movement in Venezuela, which affected economic integration in Latin America.

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I. Introduction

A better understanding of the determinants of economic integration is extremely important. This is crucial in the international arena, which faces a potential reversal in terms of the breadth and scope of economic integration.¹ This paper contributes to the literature by providing insights on the causes of economic integration in Latin America (LA). LA represents an interesting case study because it is a region where the determinants of new regionalism² might have been driven more by political and institutional factors than by geography.³

We analyze the importance of economic, geographic, institutional, and political factors in LA's economic integration from the perspectives of intra-LA as well as its relationship with the rest of the world. To do so, we consider several levels of economic integration, "shallow" versus "deep". We consider both non-reciprocal and preferential trade agreements as shallow Economic Integration Agreements (EIAs). Because of the region's particularities,⁴ we presume free trade agreements and customs unions as deep EIAs. In addition, we explore factors determining the institutional quality of signed trade agreements.

¹ A trade agreement reversal in Latin America occurred when Venezuela adopted a more rigid position regarding sovereignty than its partners in the Andean Community. The Community decided to coordinate its positions and to speak with a single voice in the Free Trade Area of the Americas (FTAA) negotiations, but Venezuela's decision to cooperate more closely with Mercosur led to a rupture with the Andean Community (see Nelson, 2013 for a better understanding of the institutional environment in Venezuela that eventually challenged the FTAA). More recent examples can be illustrated in other regions, such as Brexit or the withdrawal of the US from the Trans-Pacific Partnership.

² Márquez-Ramos *et al.* (2015) distinguished between "old" regionalism (until the late 1980s) and "new" regionalism, which the LA region implemented in the 1990s. Bown *et al.* (2017) used a similar distinction.

³ As an example, in 2011, Chile, Colombia, Mexico, and Peru formed the Pacific Alliance, which has been recognized to be based more on policy affinity than on geography (The Economist 2016).

⁴ In LA, a customs union represents the highest level of economic integration. For an analysis of further integration levels, see the study by Allegret and Sand-Zantman (2008), which discusses the feasibility of a monetary union between LA countries.

Economic and geographic factors have determined the degree of regional integration in other economic regions (Magee 2003, Baier and Bergstrand 2004, Márquez-Ramos *et al.* 2011). However, when analyzing the formation and growth of economic integration in LA, political and institutional aspects should be considered given the degree of policy uncertainty in the region. Specifically, we investigate two additional exogenous political facts. It is due to the gaps between the European Union (EU) and the US regarding the attitudes toward the developing world. These divergences may have widened due to the attacks of September 11, 2001 (Grugel 2004). We analyze the impact of these events on US–LA EIAs. Further, we consider the role of the *Revolución Bolivariana*, a leftist social and political movement in Venezuela led by Hugo Chávez. The *Revolución Bolivariana* nationalized private companies, included social welfare programs and opposed neoliberalism and policies of the International Monetary Fund (IMF) and the World Bank.

Our analysis confirms that geographic, economic, political, and institutional aspects are key elements in the formation and enhancement of EIAs as well as for high institutional quality of trade agreements that involve LA countries.

This paper is divided into six sections. Following the introduction in Section I, we present the background in Section II. Section III discusses the determinants of regional integration in the empirical analysis. Section IV describes the methodology and data. The empirical analysis is conducted in Section V, where we analyze what determines economic integration in LA, in addition to analyzing how economic decisions integrate LA countries with the rest of the world. Section VI presents the conclusion.

II. Background

The signing of an EIA often requires controversial decision making because EIAs generate global benefits that are usually distributed unequally between winners and losers. The delegation of power that derives from an integration agreement occurs at the expense of a loss of sovereignty of member countries and is usually accompanied by actions and commitments that may not be consistent with economic logic (Wyplosz 2006). Accordingly, economic integration processes may differ among developed and developing regions. To illustrate economic integration strategies in developed countries,

although both the EU and the US promote economic liberalization, Europe is more explicitly concerned with politics and institution building than the US. Moreover, it endorses a North–South model of global cooperation, where the North assumes some responsibility for the development of the South (Grugel 2004). Concerning interactions among the EU, the US, and the rest of the world, Kohl *et al.* (2016) compared coverage and enforcement of 14 agreements involving the EU and 11 agreements involving the US. They found that the EU includes more legally unenforceable activities than the US, which focuses on a more limited range of legally enforceable commitments.

In the Western-sponsored international order, the best example of deep integration is the EU, the world’s largest trading bloc and the most successful regional integrator (Doctor 2007). However, numerous issues such as Brexit, the globalization of the world economy, and increasing interdependence among countries have provoked intense discussions regarding economic integration. Many LA attempts to integrate regions have tried to follow the European model. However, experience suggests that European and LA integration strategies differ and that LA’s commitment to provide deeper integration agreements is lower than that of European countries. In addition, unlike in Europe, LA governments do not want to cede sovereignty to a supranational body (see Schmitter 1970 and The Economist 2016).

Regionally, LA countries have suffered from great political and economic instability for decades. Furthermore, LA countries trade less with each other when compared with Asian or EU countries (see The Economist 2016 and 2017, Bown *et al.* 2017). Until very recently, two main integration axes could be distinguished in LA.⁵ On the one hand, the Pacific Axis has presented a continued strategy of free trade and trade agreements with rich and developed areas.⁶ On the other hand, the Atlantic Axis has presented an alternative strategy of regional integration, which meant protectionism and integration with other protectionist, primarily left-wing, governments in LA countries.⁷ Brazil offers a third possibility: trade among Brazil, Russia, India, China, and South Africa. Brazil, in particular, is a rising power that is fostering a hybrid order, characterized by deeper

⁵ Some of the centre-right governments that recently came to power are keener to open trade than their left-wing predecessors (The Economist 2017). For example, it seems that nowadays, Brazil is interested in building bridges between Mercosur and the Pacific Axis; with the change of government in Argentina in December 2015, a new phase started with regard to trade policy and economic integration (Florensa *et al.* 2017).

⁶ This first strategy joins Chile, Colombia, Mexico, and Peru, which are integrating with countries outside the region such as the US, the EU, and Asia (strategy of continuity).

⁷ This second strategy includes countries such as Argentina, Bolivia, Ecuador, and Venezuela, which have less interest in global market integration (an alternative strategy).

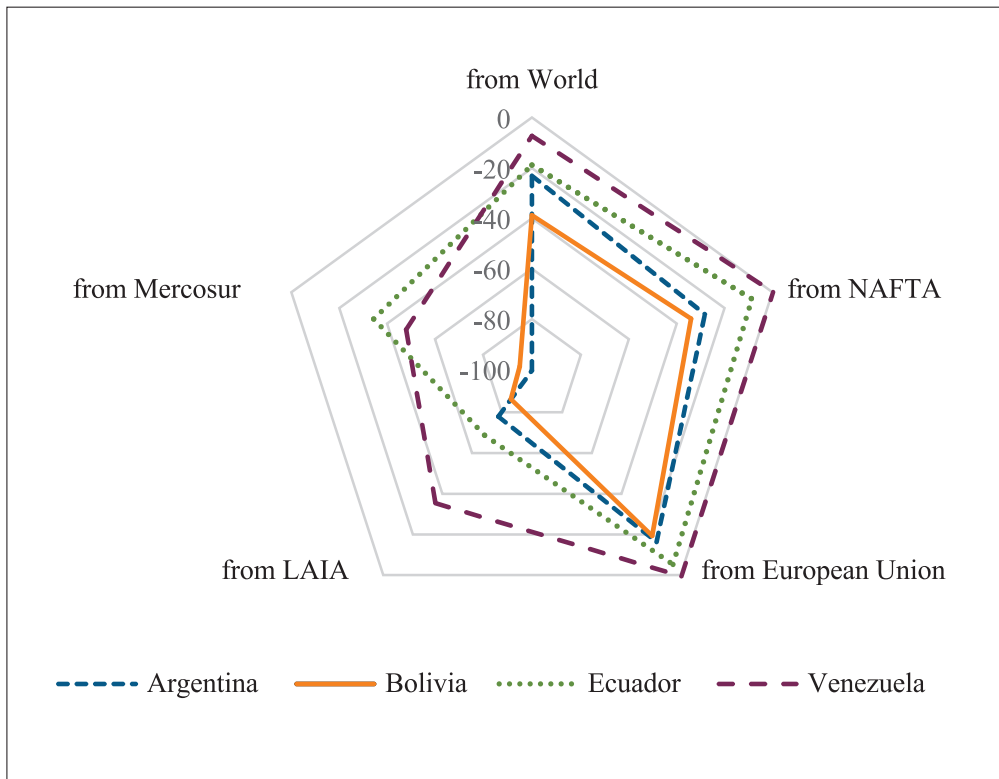
transnational integration (Stephen 2014). The commitment of highly heterogeneous member countries to economic integration in the region is naturally questioned (García de la Cruz and Sánchez Díez 2008, Florensa *et al.* 2015).

To illustrate this heterogeneity, Figure 1 and Figure 2 display tariff changes by country, distinguishing between countries in the Pacific and the Atlantic. Figure 1 displays higher tariff reductions for imports from Mercosur and the Latin American Integration Association (LAIA) in the Atlantic Axis.

Figure 2 illustrates higher tariff reductions for imports from developed countries in the

Figure 1. Tariff reductions for imports in the Atlantic axis

(1994~2008)



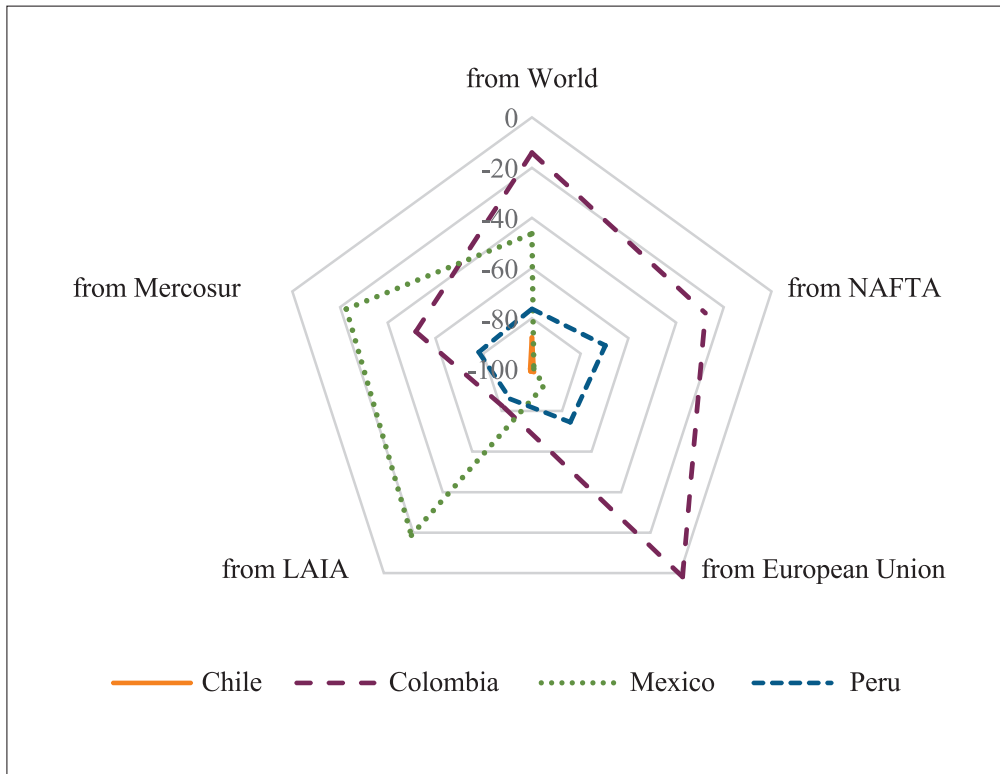
(Note) LAIA and NAFTA denote the Latin American Integration Association and the North American Free Trade Agreement, respectively. The figures are constructed with data of effectively applied tariffs (simple averages) coming from the world, NAFTA, EU, LAIA and Mercosur to reporting countries (Argentina, Bolivia, Ecuador, Venezuela) in year 1994 and 2008.

(Source) Authors' own elaboration, with tariff data obtained from the World Integrated Trade Solution.

Pacific Axis. Chile has undergone the most far-reaching liberalization process. Mexico experienced greater liberalization with other EIAs that trade with developed countries by joining the North American Free Trade Agreement (NAFTA) and signing a free trade agreement with the EU in 2000. Meanwhile, the remaining countries (excluding Chile and Mexico) have liberalized trade with the LAIA and Mercosur. Compared with the Atlantic Axis, countries in the Pacific Axis show lower global import tariff rates, including imports from NAFTA and the EU. It seems that countries following a continuity strategy are more advanced in worldwide trade integration and tariff

Figure 2. Tariff reductions for imports in the Pacific axis

(1994–2008)



(Note) Tariff changes in Chile range between -87.35% and -99.27%. Therefore, they cannot be appreciated given the scale of this figure. LAIA and NAFTA denote the Latin American Integration Association and the North American Free Trade Agreement, respectively. The figures are constructed with data of effectively applied tariffs (simple averages) coming from the world, NAFTA, EU, LAIA and Mercosur to reporting countries (Chile, Colombia, Mexico, Peru) in year 1994 and 2008.

(Source) Authors' own elaboration, with tariff data obtained from the World Integrated Trade Solution.

concessions. In contrast, countries with alternative strategies seem to be less ambitious regarding trade integration, favoring their own national policies and tariff concessions to LA partners.

Integration strategies in LA countries have changed over the last 50 years, and slow recent progress in multilateral talks has sparked regional integration. These changes have emphasized significant events, such as the restructuring of the original Andean Group into the Andean Community of Nations and the bilateral integration process between Argentina and Brazil, with special emphasis on the automotive and other sectors. These changes have also included the creation of Mercosur, the free trade agreement between Mexico and North America (NAFTA), and signing of bilateral preferential trade agreements with countries around the world, such as the US and EU members (Peña 2011).

In recent years, there has been a clear trend in LA to review concepts, objectives, and methodologies concerning the development of regional integration. Currently, LA countries have multiple options in their strategies to participate in the world economy. Institutional environments with overlapping functions and powers have proliferated (Peña 2010). This overlap might reverse LA economic integration since increased irreversibility would have sustained well-established trade agreements and would have made new trade agreements more difficult to achieve (Chisik 2003).

III. The Determinants of Economic Integration

Baier and Berstrand (2004) used a qualitative choice model to provide one of the first empirical analyses of free trade agreement determinants. Previously, Magee (2003) showed that countries are more likely to sign an EIA if they have significant bilateral trade, similar capital-labor ratios, and both are democracies. Importantly, Magee (2003) estimated when the formation of a preferential trade agreement is modeled as an endogenous choice.

Mansfield *et al.* (2002) found that democratic countries are more likely to enter into an EIA. We test the hypothesis that the probability of two countries signing an integration agreement depends on their political regimes, democratic versus autocratic.

Vicard (2012) found that trade and institutional security issues interact in the

formation of EIAs. Vicard's (2012) results indicated that countries more open to disputes and trade are more likely to create the most meaningful regional agreements. Malamud and Schmitter (2006) analyzed different integration theories to explain integration processes in Europe and elsewhere in the world. These authors critically reflected on lessons learned from the EU about other forms of economic integration, such as the Mercosur. Several lessons that Malamud and Schmitter (2006) considered to be transferrable are as follows: a) integration requires that member countries be democratic; b) regional integration arises from a convergence of interests and not by the creation of an identity; c) integration encompasses nations of different sizes, levels of development, and power but requires leadership; d) integration can be peaceful and voluntary but not always without conflict; e) integration should begin with a small number of member countries but be open to additional countries; and f) integration may experience excessive institutionalization or an institutional deficit.

Although policies may be structured toward similar development objectives in LA economies (see b) above), LA countries are heterogeneous and follow different trade integration strategies. In addition, given the high degree of policy uncertainty in LA, it is worth analyzing whether regional integration processes both inside and outside LA may be driven by political and institutional factors, together with "traditional" factors such as geography and the economy (Baier and Bergstrand 2004).

The study by Márquez-Ramos *et al.* (2011) is most similar to ours because it investigated the determinants of EIAs by considering not only geographical and economic factors but also sociopolitical variables as the main causes of EIA formation and enhancement. According to the results, although economic and geographical variables appear to be the most important determinants in forming shallow EIAs, institutional and sociopolitical factors are more important in explaining deep integration processes. They found that countries in the same continent are more likely to establish higher economic integration. Their model is more accurate when institutional and sociopolitical variables are included in the regressions to explain the formation and deepening of EIAs.

Following previous empirical research (Baier and Bergstrand 2004) and concerning economic and geographical variables, we first expect that the larger the economies of the trading countries, the greater the probability of EIA formation or enhancement. Accordingly, *RGDP* measures the sum of real GDPs in the natural log terms. The parameter associated with this variable is expected to be positive. Second, the more similar each countries' economic size, the higher the probability of EIA formation or

enhancement. *DRGDP* is the absolute value of the difference between the logs of the real GDPs of countries *i* and *j*, and the associated parameter is expected to be negative. Third, we render that two countries will more likely form or enhance an EIA when the distance between them is less. We specify the distance variable as in the study by Baier and Bergstrand (2004). This variable, called *NATURAL*, is defined as the logarithm of the inverse of the distance between trading partners. The parameter associated with this variable is expected to be positive. Fourth, we conjecture that the probability of EIA formation or enhancement increases as the geographic remoteness of a country or pair of countries rises. This study constructs the same remoteness variable (*REMOTE*) used by Baier and Bergstrand (2004). When a country is relatively far from its trading partners, it trades more bilaterally with its neighbors, thereby increasing the probability of EIA formation. The reasonable sign of the associated parameter is positive. Additionally, we consider whether trading partners are adjacent (*ADJ*), landlocked (*LAND*), and whether they speak a common language (*LANG*). We expect a positive sign for the parameter associated with these variables.

Regarding institutional and political factors, we expect that more democratic countries are more likely to form or enhance an EIA in LA. We use a variable (*POLITY2*) that takes a higher value for democratic countries and a lower value for autocratic countries. We think that this variable to have a positive effect on the dependent variable. Regarding political rights' effect on EIAs formation or enhancement, we utilize an index that grows with fewer political rights (*P_RIGHTS*). We presume this variable to have a negative effect on the dependent variable. In other words, we envision that democratic LA countries are more likely to form (and "enhance") economic integration agreements. Countries with fewer political rights are less likely to form or enhance agreements. Because they capture different mechanisms, variables that capture these two effects will be simultaneously included in the regressions. At the beginning of the period analyzed, more nondemocratic regimes existed in LA. In the most recent period analyzed, in contrast, LA countries are democracies. Once a country's democracy has been consolidated, it is important that the democratic regime is accompanied by numerous reforms that promote the proper functioning of institutions. The simultaneous inclusion of these two variables (*POLITY2* and *P_RIGHTS*) in the empirical analysis allows the consideration of both the importance of creating democratic regimes and the process of democratic consolidation as a requirement for countries' integration into the world.

Finally, we analyze the effect of trade policy on economic integration processes. Specifically, we consider the effect of trade flows (*TRADE*), the Intensive Margin (IM)

of trade, and the Extensive Margin (EM) of trade on EIAs' formation and enhancement. As in the study by Márquez-Ramos *et al.* (2011), we expect *TRADE* to have a positive effect on the dependent variable. To our knowledge, this is the first time that the effect of IM and EM on EIAs' formation and enhancement has been analyzed. In the same way that maintaining and enhancing trade relations over time (the IM of trade) or the appearance of new products (the EM of trade) increases a country's exports (Florensa *et al.* 2015), the EM or the IM may have a role in the process of economic integration.

Márquez-Ramos *et al.* (2015) noted the time evolution of the EM and IM in a number of LA countries, showing that both evolved divergently. For example, they showed that the highest IM values occurred during the second half of the 1980s, with the IM decreasing after the LA economic crises at the beginning of the present century. The EM seems to have increased considerably since 2001.

IV. Methodology and Data

As a first step, we explain why two countries enter into an EIA and why they would want to expand this agreement. The empirical background must provide an analysis to effectively model decisions. Therefore, we estimate an ordered logit wherein the dependent variable is the level of economic integration among countries. When a country enters into a bilateral trade agreement, its next decision may be whether to deepen its level of integration. Therefore, we model a series of binary decisions, where each decision either accepts the current integration level or advances it to a higher level.

The econometric model is constructed as follows. An ordinal variable Y is a function of an unobserved continuous variable Y^* , which has many threshold points that determine the values that the discrete observable variable Y can assume.

We distinguish the following four types of trade agreements between each pair of countries i and j : Nonreciprocal Preferential Trade Agreements (NRPTA), Preferential Trade Agreements (PTA), Free Trade Agreements (FTA), and Customs Unions (CU). This mandates four threshold points: Threshold 1 implies that two countries (i and j) engage in a NRPTA, Threshold 2 implies a PTA, Threshold 3 implies an FTA, and Threshold 4 represents a CU.

$$Y_{ij} = 0 \text{ if } Y_{ij}^* \leq \delta_1; Y_{ij} = 1 \text{ if } \delta_1 \leq Y_{ij}^* \leq \delta_2; Y_{ij} = 2 \text{ if } \delta_2 \leq Y_{ij}^* \leq \delta_3;$$

$$Y_{ij} = 3 \text{ if } \delta_3 \leq Y_{ij}^* \leq \delta_4; Y_{ij} = 4 \text{ if } Y_{ij}^* \geq \delta_4$$

The probability model assumes that Y_{ij}^* is as follows:

$$Y_{ij}^* = \sum_{k=1}^r \beta_k X_{ijk} + \varepsilon_{ij},$$

where $X_{ijk} \ k = 1, \dots, r$ are the covariates, and ε_{ij} is the random term with logistic distribution.

We base our calculations for bilateral trade from 1962 to 2009 on the dataset provided by Feenstra *et al.* (2005), which we complement with data from the World Integrated Trade Solution. The intensive and extensive margins are computed as described by Florensa *et al.* (2015) and Márquez-Ramos *et al.* (2015). Trade agreements used to construct the dependent variable (*EIA*),⁸ which take many different forms, are summarized in the study by Florensa *et al.* (2015).

Our dataset includes exports from 11 LAIA countries (Argentina, Bolivia, Brazil, Chile, Colombia, Ecuador, Mexico, Peru, Paraguay, Venezuela, and Uruguay) to 161 destination countries. We add several variables to this dataset. In particular, we consider the factors of geography, economy, politics and institutions, and common language as control variables for all 11 LAIA countries and 161 trading partners.

In addition to the discrete variable considered as a dependent variable, heterogeneity of trade agreements is considered in the second step. Kohl *et al.* (2016) developed several publicly available indices (*IC*, *EI*, and *IIQ*) to measure trade agreements' heterogeneity, which we use in this study. Specifically, Kohl *et al.* (2016) considered “WTO⁺” and “WTO^X” provisions to construct the indices *IC* (index for the number of WTO provisions covered by an agreement) and *IE* (index for the number of WTO provisions legally enforceable by an agreement). Provisions that confirm countries' existing multilateral obligations and that also may deepen such commitments are categorized as WTO⁺ provisions. Examples of WTO⁺ provisions are measures on anti-dumping, restrictions on state aid, and the liberalization of trade in services. “WTO^X” provisions involve policy domains not covered by the WTO's current mandate and may compromise the WTO's ability to expand into these legal territories with binding, nondiscriminatory policies.

⁸ Data is available at <http://www3.nd.edu/~jbergstr/> and on the website of the World Trade Organization (WTO). See Florensa *et al.* (2015).

Examples range from anti-terrorism to environmental and labor market regulations. Additionally, Kohl *et al.* (2016) constructed an index that reflects an agreement's Institutional Quality (IIQ), which measures a trade agreement's depth by its number of provisions. Provisions in this indicator are in relation to consultations, definitions, dispute settlements, duration and termination, evolutionary mechanisms, institutional frameworks, objectives, plans and schedules, and transparency of trade agreements.

The data and variables used in this research come from different statistical sources that are listed in the Appendix, together with the expected sign of the estimated coefficient associated with each variable (see Appendix 1).

In the empirical analysis, we first examine the determinants of LA's regional integration between 1962 and 2009. As the second step, we use the indices computed by Kohl *et al.* (2016) as Left-Hand-Side (LHS) variables to analyze the determinants of trade agreements' institutional quality and the number of provisions covered and enforceable by LA integration agreements in Ordinary Least Squares (OLS) regressions.

Notably, a way of validating the results obtained is to observe whether they are robust for the different models, different specifications, and estimation techniques used. Numerous versions of the proposed model are estimated. We apply both maximum likelihood and OLS estimation techniques and rely on two types of LHS: a discrete 0~4 dependent variable and a continuous variable that measures trade agreements' heterogeneity more completely.

V. Empirical Analysis

A. The dynamics of economic integration in LA

We use our panel dataset that covers the period 1962~2009 to analyze the effect of geographical, economic, institutional, and political factors on economic integration in LA. In addition, we consider two additional exogenous political issues as determinants of EIA formation and enhancement. First, because the EU and the US present distinctive models of governance toward the developing world and because these divergences may have widened following the attacks of September 11, 2001 (Grugel 2004), we analyze the role of these events in US-LA EIAs with a dummy *IIS*, which takes the value 1 if the

trading partner is the US from the year 2001 forward and 0 otherwise.

Second, we consider the role of the policy's affinity with the *Revolución Bolivariana*, which may contribute to the two main strategies of regionalism: the strategy of continuity in Chile, Colombia, Mexico, and Peru and the alternative strategy followed in Argentina, Bolivia, Ecuador, and Venezuela. Therefore, we introduce four additional dummy variables: one for Argentina from 2005, one for Bolivia from 2006, one for Ecuador from 2007, and one for Venezuela from 1999 (see notes below in Table 1).

Ordered logit estimates⁹ are presented in Table 1. We run five specifications (Model 1~Model 5) that alternatively include the trade policy variables and the dummy variables, capturing the effects of September 11 attacks and the *Revolución Bolivariana*.

Model 1 shows the results of our baseline model, with economic, geographical, political, and institutional variables. In Model 2, we add the trade variable. Models 3–5 show the most complete specifications, which include the (lagged) *EIA*, (lagged) intensive and extensive margins (*IM* and *EM*), the dummy *IIS* (Model 3), and the dummies for *Argentina*, *Bolivia*, *Ecuador*, and *Venezuela* (Model 4), in addition to the variables considered in previous models. Finally, these dummy variables are included in the same regression (Model 5).

Table 1 displays that economic and geographical variables, political rights, and the variable *POLITY2* have the expected sign and are statistically significant. This means that both the level of political rights and the extent of democratic practices positively affected the signing or enhancing of EIAs between 1962 and 2009. With regard to trade policy, *Trade*, *IM*, *EM*, and *EIA* variables are statistically significant, and the associated estimated coefficients present the expected positive sign.

Concerning exogenous political events, the coefficient of the dummy *IIS* is negative and statistically significant Model 3 and Model 5. This means that the September 11 terrorist attack on the US soil negatively affected the likelihood of establishing or deepening EIAs between the US and LA countries. Models 4 and 5 show that policy affinity with the *Revolución Bolivariana* ideology presents different consequences in terms of economic integration. Thus, the estimated coefficient for the *Argentina* dummy is negative and significant, whereas the estimated coefficients for the *Bolivia* and *Ecuador* dummies are positive and significant. The coefficient is not statistically significant only for *Venezuela*.

Since the revolution in Venezuela lacked a commitment to democracy (Molina

⁹To carry out this analysis, we use (temporary) lagged explanatory variables for those regressors that are potentially endogenous in line with the previous related literature.

Table 1. Determinants of economic integration in Latin America

(panel estimation)

Variable description	Variable	Model 1 (baseline)	Model 2	Model 3	Model 4	Model 5
Real GDPs	<i>RGDP_{t-1}</i>	0.403***	0.261***	0.235***	0.238***	0.247***
Difference of real GDPs	<i>DRGDP_{t-1}</i>	0.008	0.009	0.010	0.010	0.010
		-0.184***	-0.210***	-0.105***	-0.131***	-0.125***
Inverse of distance	<i>NATURAL</i>	0.009	0.009	0.010	0.010	0.010
		0.563***	0.350***	0.447***	0.392***	0.395***
		0.048	0.049	0.045	0.046	0.046
Relative distance from the rest of the world	<i>REMOTE</i>	0.128***	0.127***	0.023***	0.021***	0.026***
		0.006	0.006	0.006	0.007	0.007
Landlocked	<i>LAND</i>	2.163***	2.274***	1.341***	1.302***	1.313***
		0.040	0.041	0.046	0.049	0.049
Adjacency	<i>ADJ</i>	1.894***	1.798***	0.563***	0.606***	0.596***
		0.077	0.077	0.087	0.090	0.090
Common language	<i>LANG</i>	1.021***	1.062***	0.404***	0.428***	0.411***
		0.055	0.055	0.057	0.057	0.057
Political rights	<i>P_RIGHTS</i>	-0.060***	-0.051***	-0.062***	-0.066***	-0.066***
		0.005	0.005	0.005	0.005	0.005
Democracy	<i>POLITY2</i>	0.051***	0.049***	0.043***	0.034***	0.034***
		0.004	0.003	0.004	0.004	0.004

(continued)

Variable description	Variable	Model 1 (baseline)	Model 2	Model 3	Model 4	Model 5
Extensive Margin	$Log(EM)_{t-1}$			0.046***	0.078***	0.076***
Intensive Margin	$Log(IM)_{t-1}$			0.012	0.012	0.012
Bilateral trade	$Log(TRADE)_{t-1}$		0.192***	0.006	0.027**	0.024**
Economic integration	EIA_{t-1}		0.008	3.308***	3.299***	3.297***
Year dummies		Yes	Yes	0.053	0.053	0.053
Exogenous political events				Yes	Yes	Yes
Dummy '11S'				-1.349***		-1.380***
Dummy Argentina from 2005				0.228		0.231
Dummy Bolivia from 2006					-0.341***	-0.335***
Dummy Ecuador from 2007					0.047	0.047
					0.549***	0.547***
					0.081	0.081
					0.731***	0.739***

(continued)

Variable description	Variable	Model 1 (baseline)	Model 2	Model 3	Model 4	Model 5
Dummy <i>Venezuela</i> from 1999					0.061	0.062
					-0.086	-0.084
					0.070	0.070
Cut 1		15.479	12.084	8.979	10.068	10.528
		0.562	0.554	0.577	0.632	0.635
Cut 2		17.888	14.54	13.053	14.171	14.631
		0.563	0.554	0.588	0.642	0.644
Cut 3		19.791	16.451	16.094	17.229	17.701
		0.566	0.557	0.601	0.658	0.661
Cut 4		21.333	18.015	18.215	19.372	19.843
		0.567	0.558	0.606	0.661	0.664
Pseudo R ²		0.257	0.269	0.488	0.492	0.492
Log likelihood		-19737.1	-19433.1	-13592.9	-13490.3	-13475.2
Observations		22212	22212	22155	22155	22155

(Note) ***, **, and * indicate significance at 1%, 5%, and 10%, respectively. Robust standard errors are provided below every coefficient. The dependent variable is a discrete variable that takes the value 1, 2, 3, or 4 when the LA country *t* was integrated into an NRPTA, PTA, FTA, or CU, with country *j* in year *t* (from 1962–2009) and 0 if there was no trade agreement. To avoid endogeneity biases, the 10th lag of *RGDP*, *DRGDP*, the log of the *EM*, the *IM* and *TRADE*, and *EIA* were used. For the construction of the dummies in *Argentina*, *Bolivia*, *Ecuador*, and *Venezuela*, the following events are considered: 1) Nestor Kirchner and Hugo Chávez narrowed bilateral relations in July 2004; 2) when Evo Morales was elected as the president, an important opportunity occurred in Bolivian-Venezuelan relations. Evo Morales became the president in July 2004; 3) the president of Ecuador, Rafael Correa, was close to and identified with the Bolivarian Revolution and the Venezuelan government. Rafael Correa was elected as the president of Ecuador in (late November) 2006; and 4) the Bolivarian Revolution is the name given in Venezuela by Hugo Chávez and his supporters to the ideological and social project that began in 1999 with the election of Chávez as president.

2003), the political and institutional variables included in the regression might partially capture the exogenous effect of Venezuela's *Revolución Bolivariana*. The dummies for *Ecuador* from 2007 and for *Bolivia* from 2006 positively correlate with the likelihood of signing new trade agreements or enhancing existing trade agreements. However, because the last year in our sample is 2009, further implications from the study's results should be taken with caution. The obtained results are in line with the fact that Argentina could have been implementing economic policies that negatively affected the probability of signing and enhancing EIAs with third-party countries. For example, although participation in production networks increases trade flows, many implemented strategies in Argentina were seeking to balance trade and increase the use of local components in domestic industries, such as automobiles (Márquez-Ramos 2016). Orefice and Rocha (2014) suggested that governments should reconcile their divergent domestic practices to strengthen and secure production network activities across countries. The implementation of interventionist industrial policy, which includes tools such as strategic trade and investment policies, is distinctive from that of the liberal West (McNally 2013, Stephen 2014). This interpretation should be taken with caution because although we have already controlled for potential factors that the previous literature has shown to be relevant determinants of EIAs' formation and enhancement in a discrete choice framework (Baier *et al.* 2004, Márquez-Ramos *et al.* 2011), we find that the dummy for *Argentina* is negatively correlated with the dependent variable, not with specific Argentinean policies.

B. The determinants of institutional quality in LA

We assess what determines higher institutional quality of negotiated trade agreements, in addition to higher coverage and enforcement of provisions in LA regional integration. To do so, we perform a cross-sectional analysis for the years 1998 and 2009.¹⁰

We append to our cross-sections for 1998 and 2009¹¹ and consider trade agreements that were enforced until 1998 and 2009, using three variables for each agreement.

¹⁰ While a positive investment climate existed at the beginning of Mercosur, it changed because of several LA economic crises after 2000, with political instability and uncertain property rights exacerbating a downward trend. In the mid-1990s, states considered using open regionalism strategies to additional regions to respond to the challenge of deeper integration in the global economy, ameliorate the impacts of globalization, and create a more secure multilateral order (Doctor 2007). The two cross-sections that we examine represent the period before and after the respective LA crises in 1998 and 2009.

¹¹ As in the panel analysis, it is worth mentioning the endogeneity issue, as some covariates might be correlated with the error term. Specifically, a trade agreement formed several years prior to 1998/2009 likely influenced subsequent economic growth, incomes, trade, and capital stocks in 1998/2009, then these variables may be endogenous. To account for this, we use the earliest available data to construct lagged regressors.

Then, we run different cross-sectional regressions for 1998 and 2009 using OLS, with these three variables as LHS variables: (1) *IIQ* (the index that reflects an agreement's institutional quality); (2) *IC* (the index for the number of WTO provisions covered by an agreement); and (3) *IE* (the index for the number of WTO provisions legally enforceable in an agreement).

In LA, some countries have more than one signed agreement. For example, Argentina and Bolivia have signed three agreements. Both have been LAIA members since 1981, with an IE index of 0.20.¹² With an IE index of 0.39, Bolivia signed a treaty with Mercosur in 1997 and signed another treaty as a member of the Andean Community in 1998 (with an index of 0.27). If a pair of countries are signatories to more than one agreement, we take the higher integration figure.

Our regression results are displayed in Table 2.¹³ These results show that the institutional quality of a regional agreement between two countries increases if a deeper EIA existed (see Model 6 for 1998, and Model 9 for 2009). Trade margins are not statistically significant. The variable *POLITY2* is positive and significant for 2009 because a better political scenario significantly increases provisions that are covered and legally enforceable in signed trade agreements.

The obtained results also prove that economic, geographic, and language variables are significant in both years. However, natural and landlocked variables are not statistically significant.

¹² This index represents the number of WTO provisions legally enforceable in an agreement. Further, 0 means minimum integration, and 1 means maximum integration.

¹³ Note that in the cross-section regressions, we include among the Right-Hand-Side (RHS) variables the absolute differences in the capital stock per worker ratio (DKL) as a proxy for relative factor endowment differences (traditional trade models suggest that the benefits of an EIA increase the wider their relative factor endowments). This variable was not included in pooled ordered logit specifications because of data availability. The expected sign of the parameter associated to this variable is positive.

Table 2. Determinants of institutional factors

(Cross-section regressions)

Variable description	Variable	1998	Model 7 (IC)	Model 8 (IE)	2009	Model 9 (IIQ)	Model 10 (IC)	Model 11 (IE)
Real GDPs	$RGDP_{t-1}$	0.025**	0.017	0.018*	0.030**	0.022**	0.021**	
Difference of real GDPs	$DRGDP_{t-1}$	0.012	0.011	0.009	0.012	0.010	0.009	
Difference of capital stock per worker	DKL_{t-1}	-0.039***	-0.022**	-0.020**	-0.040***	-0.024***	-0.022***	
Inverse of distance	$NATURAL$	0.044*	0.028	0.031*	0.043**	0.035**	0.034**	
Relative distance from the rest of the world	$REMOTE$	0.025	0.019	0.016	0.021	0.016	0.014	
Landlocked	$LAND$	-0.030	-0.032	-0.021	0.001	0.007	0.008	
Adjacency	ADJ	0.043	0.033	0.028	0.044	0.033	0.029	
Common language	$LANG$	0.014**	0.008	0.008*	0.014**	0.007	0.008*	
		0.006	0.006	0.005	0.006	0.005	0.005	
		0.045	0.006	0.005	0.049	0.010	0.009	
		0.053	0.043	0.031	0.053	0.043	0.032	
		0.451***	0.355***	0.280***	0.433***	0.331***	0.262***	
		0.094	0.082	0.065	0.092	0.076	0.062	
		0.144***	0.082*	0.067*	0.137**	0.076*	0.063*	

(continued)

Variable description	Variable	1998		2009		Model 10 (IC)	Model 11 (IE)
		Model 6 (IIQ)	Model 7 (IC)	Model 8 (IE)	Model 9 (IIQ)		
Political rights	<i>P_RIGHTS</i>	0.054	0.045	0.035	0.054	0.044	0.035
Democracy	<i>POLITY2</i>	0.003	0.000	0.000	-0.004	-0.002	-0.003
		0.006	0.004	0.004	0.005	0.004	0.003
		0.010	0.007	0.006	0.006	0.009**	0.006*
		0.007	0.006	0.005	0.005	0.004	0.003
Extensive margin	$\text{Log}(EM)_{t-1}$	0.000	0.003	0.001	-0.002	0.002	0.000
		0.011	0.009	0.007	0.011	0.009	0.007
Intensive margin	$\text{Log}(IM)_{t-1}$	-0.006	0.001	0.000	-0.008	-0.001	-0.002
		0.008	0.007	0.005	0.008	0.006	0.005
Economic integration	EIA_{t-1}	0.111***	0.034	0.053**	0.093**	0.010	0.034
		0.038	0.030	0.026	0.037	0.029	0.025
Constant term		-1.583***	-1.093**	-1.070**	-1.471***	-1.043**	-1.000**
		0.582	0.491	0.421	0.555	0.480	0.411
Observations		328	328	328	336	336	336
R squared	R^2	0.3124286	0.1915258	0.2335635	0.3170595	0.2111474	0.2486606
Akaike information criterion	AIC	134.4063	31.21424	-116.6486	128.8246	16.76386	-132.9959
Root mean squared error	RMSE	0.290857	0.2485209	0.1983684	0.2871869	0.2430765	0.194517

(Note) ***, **, and * indicate significance at 1%, 5%, and 10%, respectively. Robust standard errors are provided below every coefficient. The dependent variable is equal to zero when there is no agreement and takes the value of the indexes provided by Kohl *et al.* (2016) if there is an agreement: IIQ, IC, and IE, respectively. To avoid endogeneity biases, *RGDP*, *DRGDP*, the log of *EM* and *IM*, and *EIA* were used for 1962, and *DKL* was used for 1980.

C. Robustness

We perform four robustness checks. First, we test whether the results obtained for the dummy *IIS* are consistent by running several regressions that differ for the last sample year. Then, we estimate regressions for the periods 1962~2002, 1962~2003, and 1962~2004, and so on. Obtained results validate that the coefficient for the dummy *IIS* is always negative and statistically significant.

Second, we run regressions on the dynamics of economic integration, considering only reciprocal (i.e., negotiated) trade agreements.¹⁴ Obtained results confirm that economic, geographical, political, and institutional factors are important determinants for the creation and enhancement of existing negotiated trade agreements.

As a third robustness check, we identify one variable that captures part of the existing heterogeneity between LA countries discussed above to avoid the use of dummies included for different countries in various years. Specifically, we use the foreign value embodied in domestic final demand (see Appendix 1, variable *WIO*), which allows us to capture the heterogeneity present in LA countries' demand for imported goods.¹⁵ We therefore run two ordered logit cross-sectional regressions, considering only negotiated trade agreements for the years 1998 and 2009. For the 1998 regression, we find that the added foreign value embodied in domestic final demand is positive and significant for the trade agreements at a 10% level of significance. This variable is not statistically significant in 2009. These results suggest that in the period before the LA crises, participation in the world economy measured as the value added of inputs arriving from abroad was, overall, relevant for explaining the creation and enhancement of trade agreements. After the LA crises, the start of the *Revolución Bolivariana* and the terrorist attacks of September 11, 2001, this issue was not relevant for explaining LA economic integration. This result corroborates the increasing role of political and institutional factors in LA economic integration.

As a final robustness check, we include fixed effects for LA counterparts in the OLS regressions to further consider the potential problem of endogeneity in our variables

¹⁴ We consider that NRPTAs are not trade agreements because these agreements are, in fact, not negotiated. Instead, "donor countries" offer a program where various countries can export under tariffs lower than those in the MFN. However, since this offer is unilateral, the receiving country does not have a say in its design. In addition, "donor countries" did not differentiate non-reciprocal trade preferences between developing countries until the early 2000s, so political factors might not have influenced which countries were offered such (non-reciprocal) preferences. In contrast, PTAs, FTAs, and CUs are negotiated, and all involved parties must be in agreement. Therefore, because NRPTAs (as an "earlier" form of agreement) only contain inputs from one country, other LA countries then might choose a PTA at a later stage of negotiation. In other words, an NPTA, versus a PTA, FTA, or CU, represents two different forms of decisions.

¹⁵ One shortcoming of using this variable is that data exists for only five LA countries: Argentina, Brazil, Chile, Colombia, and Mexico. Thus, the number of observations is considerably reduced.

of interest, which might arise because of the omitted variables that characterize LA countries. Similar results are obtained using these fixed effects, which also indicate that economic and geographical factors are important to explain why LA countries sign trade integration agreements of higher institutional quality. In addition, political and institutional factors seem to play a role in the number of covered and enforceable provisions in LA trade agreements in the most recent period.

VI. Policy Implications

The causes and consequences of economic integration in LA are especially relevant in terms of trade policy. Economic integration fosters international trade, which in turn stimulates countries' economic growth. Recently, Bown *et al.* (2017) suggested a *revitalized open regionalism* strategy in LA, which would make the region more competitive in international markets and would foster economic growth.

Therefore, it is important to analyze the factors that motivate LA countries to sign trade integration agreements with other countries or to enhance them. This research question is particularly interesting in a region where institutional and political factors are key determinants of regional integration. As the international context faces a potential reversal in terms of the breadth and scope of economic integration, we might see the LA experience as a harbinger of future events in other regions.

To analyze economic integration and the heterogeneity of trade agreements signed by LA countries, we considered four levels of economic integration: (1) shallow economic integration - non preferential trade agreement, preferential trade agreements, (2) deep economic integration - free trade agreements, and custom unions. We first analyzed the likelihood that pairs of countries sign an EIA or enhance existing EIAs. Second, we investigated heterogeneity in LA trade agreements in terms of institutional design and legal enforceability.

The results proved that institutional and political factors influence economic integration in LA. Traditional geographic and economic, institutional, and political factors play a role in the institutional quality of LA trade agreements. Empirical evidence also showed the impact of two exogenous political issues that affected foreign affairs in several countries on LA economic integration: the terrorist attack of September 11, 2001,

and policy affinity with the *Revolución Bolivariana*.

Interestingly, the *revitalized open regionalism* strategy proposed by Bown *et al.* (2017) implies exploiting complementarities between LA regionalism and economic integration with the rest of the world. Natural question arises, “how can we predict the reversal of trade agreements?” We leave this as a relevant issue for future research.

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Appendix 1: Variables and data sources

Variable	Description	Expected sign	Source
<i>EIA</i>	Discrete variable that takes the value 0 when there is no agreement between trading partners, 1 when the agreement is asymmetrical or one-way, 2 when there is a two-way preferential trade agreement, 3 when there is a free trade agreement, and 4 when there is a customs union	Dependent variable Lagged regressor: + (the probability of reaching an integration level depends on the point of departure. Then, the probability of reaching a deeper integration level is higher if the countries already participate in an EIA)	http://www.w3.nd.edu/~jbergstr/ and WTO
<i>TRADE</i>	Measures bilateral exports from <i>i</i> (L.A country) to <i>j</i>	+ (two countries that are major trading partners are more likely to form or enhance a trade agreement)	Feenstra <i>et al.</i> (2005) and WITS
<i>IM: Intensive Margin</i>	Growth in exports because of major exporting quantities of a particular good	+/- (an increasing IM over time might lead to higher/lower concessions in regional integration)	Feenstra <i>et al.</i> (2005) and WITS. Authors' calculations
<i>EM: Extensive Margin</i>	Growth in exports because of a wider range of exported goods	+/- (the greater export diversification, the more/less likely to form and/or enhance EIAs)	Feenstra <i>et al.</i> (2005) and WITS. Authors' calculations
<i>RGDP</i>	Measures the sum of the logs of real GDPs of the two countries (constant 2005 US dollars)	+ (net welfare gain from an EIA between a pair of countries increases with their economic size)	World Development Indicators, World Bank
<i>DRGDP</i>	Absolute value of the difference between the logs of real GDPs in the two countries (constant 2005 US dollars)	- (a greater difference in country size reduces the chance of signing an EIA by making it less attractive for the larger country)	World Development Indicators, World Bank
<i>NATURAL</i>	Log of the inverse of the great circle distances between trading partner country capitals (km)	+ (a pair of countries will be more likely to form or enhance an EIA if the distance between them is smaller)	CEPII
<i>REMOTE</i>	Relative distance of a pair of continental trading partners from the rest of the world (see Baier and Bergstrand, 2004)	+ (the likelihood to form or enhance an EIA increases for two continental trading partners as their remoteness from the rest of the world increases)	CEPII
<i>LAND</i>	Landlocked dummy; = 1 if at least one trading partner is landlocked	+ (landlocked countries have a higher probability of engaging in an EIA)	CEPII

(continued)

Variable	Description	Expected sign	Source
<i>ADJ</i>	Adjacency dummy	+ (neighboring countries have a higher probability of engaging in an EIA)	CEPII
<i>LANG</i>	Language dummy	+ (two countries are more likely to form or enhance an EIA if they speak a common language)	CEPII
<i>POLITY2</i>	Varies between 10 (countries strongly democratic) and -10 (highly autocratic)	+ (countries that are democratic are more likely to form or enhance an EIA). $POLITY2_{ijt}$ is the sum of the values of $POLITY2$ variable for country i and j in year t .	Marshall and Jaggers (2002)
<i>P_RIGHTS</i>	Ranges from 1 to 7, beginning with free and fair elections, competitive parties, the opposition plays an important role, and the minority groups have reasonable self-government (value of 1); the lack of political rights as a result of the extremely oppressive nature of the regime sometimes in combination with civil war (value of 7). It is worth mentioning that an additional political variable has been considered, <i>CIVIL LIBERTIES</i> , which includes the freedom to develop opinions and personal autonomy without interference from the state. This variable was excluded in regressions to avoid multicollinearity because it is highly correlated with <i>P_RIGHTS</i> .	- (two countries with higher political rights are more likely to form or enhance an EIA). P_RIGHTS_{ijt} is the product of the values of the political rights variable for country i and j in year t .	Freedom House Organization
<i>IIQ</i>	Index that reflects an agreement's institutional quality. Takes the values between 0 (low institutional quality) and 1 (high institutional quality)	Dependent variable	Kohl <i>et al.</i> (2016)
<i>INDEX_C (IC)</i>	Index of the number of WTO provisions covered by an agreement	Dependent variable	Kohl <i>et al.</i> (2016)
<i>INDEX_E (IE)</i>	Index of the number of WTO provisions legally enforceable by an agreement	Dependent variable	Kohl <i>et al.</i> (2016)
<i>WTO</i>	Foreign value added embodied in domestic final demand, measured in millions of US dollars	+ (a higher value added in imports from a country increases the likelihood of signing an EIA)	OECD-TVA Database