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Formation of Interregional Trade Agreements: What Factors Induce Trade Blocs to Cooperate?[2]

The research paper proposes explanations for formation of interregional trade agreements through the bargaining theory by emphasizing specific roles of trade gains, depth of integration within a bloc, levels of development, membership in the WTO and its disputes framework. The results demonstrate positive and significant impact of trade gains, depth of integration and membership in the WTO, while the disputes history significantly influences interregional cooperation in a negative way. There is an important implication for policy-makers in terms of applying this information for formation of trade agreements between blocs.

Key words: *regional trade blocs, interregional trade agreement, interregional cooperation, inter-blocs cooperation, trade gains, the depth of integration, World Trade Organization, trade disputes.*

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Introduction

International trade tendencies have gradually progressed during the past two decades. Many trade agreements have emerged in various forms and types such as preferential trade agreements, free trade areas, customs unions, common markets and fiscal and monetary unions [Mansfield and Milner, 1999; Mansfield and Reinhardt, 2003]. The most notable feature in these processes is that a vast majority of trade arrangements were concluded by countries individually within one particular region, which led to formation of regional trade blocs [Mansfield and Milner, 1999; Bajo, 1999; Mansfield and Reinhardt, 2003; Aggarwal and Fogarty, 2003; Szegedy-Maszak, 2009; Boyer and Schuschny, 2010]. The common reasons among countries in forming regional trade blocs were obtaining access to market and trade gains, strengthening domestic policy reforms, increasing multilateral bar-

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gaining leverage, establishing strategic multilateral connections with trade partners [Whalley, 1998; Mansfield and Milner, 1999; Mansfield and Reinhardt, 2003; Mansfield and Pevehouse, 2013]. We may consider the European Union (EU), the North American Free Trade Agreement (NAFTA), the Southern Common Market (Mercosur), the Association of South East Asian Nations (ASEAN), and the Andean Community the best examples of trade agreements. Consequently, these blocs have been starting to negotiate on trade agreements with each other and to form interregional trade institutions. This trend is important for our analysis, as regional trade blocs have a huge influence on international trade relations because of their scale increased by number of states participated in each bloc. Moreover, formation of these agreements seems to continue, meaning that cooperation between regional trade blocs will be widespread. Hence, a focal objective of the presented paper — is to determine reasons for formation and proliferation of region-to-region trade agreements.

The article seeks to construct an applicable theory with hypotheses which explain the spread of interregional trade agreements. Particularly, by applying Fearon's bargaining theory and its parameters as discount rate and status quo this research purports to address the following arguments: (1) examination of integration level, (2) role of the development level, (3) trade gains enriching benefits from trade, (4) market access enhancing opportunity to sell goods and services, (5) reducing volatility in global trade, and (6) seeking independence from the World Trade Organization. Notably, it is worth mentioning that the most important difference of interregional cooperation from state-to-state model of cooperation is the integration level of blocs and influence of the WTO on them. On the basis of these pillars, the paper presents explanation for proliferation of interregional trade agreements.

Literature review

This literature review is dedicated to an explanation of reasons for concluding trade agreements. Mainly, we distinguish two groups in the literature relating to the topic of the paper. The first group of scholars concentrates attention on case studies of bloc-to-bloc trade agreements, while the second group examines regional trade agreements within large-N scale.

The proliferation of interregional trade agreements has previously been examined through single case studies such as European Union-NAFTA, European Union-Mercosur, European Union-ASEAN, European Union-Andean Community, and Mercosur-Andean Community [Aggarwal and Fogarty, 2003; Aggarwal and Fogarty, 2005; Bajo, 1999; Devlin, Estevadeordal, and Krivonos, 2003; Faust, 2003; Rüland, 2001; Szegedy-Maszák, 2009; Van der Geest, 2004]. For instance, Bajo (1999) presents trade liberalization between the European Union and Mercosur as a driving force for cooperation, while Faust (2003) argues that economic interests of domestic groups, ambitions of political actors and the WTO stagnation influence partnership between the European Union and Mercosur. Aggarwal and Fogarty (2003) research the European Union's relationship with other blocs

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by focusing on industrial interests, balance of power, and even political and cultural identities converging them into cooperation. The case studies cannot determine the general factors affecting interregional cooperation and delineating the importance of variable over the other one.

Meanwhile, large-N literature on regional trade agreements can be divided into several parts revealing the focal reasons in formation of these agreements. First, the role of bargaining power is emphasized in negotiations creating trade arrangements. Second category is dedicated to indicating the importance of market access as a driving force. Third, some researchers argue that a crucial function of regional trade agreements is reducing volatility in the global economy. Last group of people supposes regional trade agreements as a counterbalancing power opposed to the framework of the World Trade Organization. Generally, scholars adhere to one or several of abovementioned reasons in explaining the proliferation of regional trade agreements.

Despite the fact that regional and interregional trade agreements have shared commonalities, it is a crucial task to delineate region-to-region trade cooperation. Precisely, a certain difference of inter-group cooperation is regional bloc's own structure. Each bloc has quality of integration in fiscal, monetary, political coordination and supranational institutions. This is defining condition for their actions in international arena [Hufbauer and Schott, 1994; Efird and Genna, 2002; Efird and Genna, 2003; Feng and Genna, 2003; Genna and Hiroi, 2004; Feng and Genna, 2005; Geda and Kebret, 2007; Genna, 2011].

The next trigger for concluding regional trade agreements is market access and trade gains. Whalley (1998), Mansfield and Milner (2012), Mansfield (2013), Mansfield and Pevehouse (2013), and Baccini and Dur (2012) indicate that preferential trade agreements have a feature to expand further, if there is open access to trade areas and fairly distributed gains. In determining commitments of market access and trade gains, as Milner (1997) argues, certain types of industries, preferences of political leaders, and mutual tariff reductions are bases for establishing regional trade blocs.

It is also important to emphasize reducing volatility in the market as one of the driving factors leading to the emergence of regional trade blocs. Mansfield and Pevehouse (2000) reveal that preferential trade agreements diminish a possibility of conflict between members within the arrangement, while, in the same manner, Mansfield and Reinhardt (2008) and Mansfield (2013) argue that preferential trade agreements and the WTO decrease potential economic instabilities in the world by establishing certain stable rules for trade and by providing dispute settlement mechanisms in a case of disagreements between countries.

Apart from abovementioned reasons, the «domino effect» has also been proposed as a reason for the proliferation of regional trade agreements [Baldwin and Jaimovich, 2012]. The «domino effect» means that third parties seek to conclude preferential trade agreements, because other two countries concluded their own

trade agreements. Actors perceive this process as a normal order in international political economy [Söderbaum, Stelgren, and Van Langenhove, 2005].

To summarize this review, scholars have created great knowledge explaining the behavior of states and of regional trade blocs. To be precise, the case studies on interregional trade cooperation are devoted to particular instances, however, they have slightly limited foundation proposing a general applicable theory for these types of agreements. At the same time, literature on regional trade agreements has strong arguments, which can basically explain interregional cooperation due to the fact that cooperation is still in trade. However, they do not address problems of depth within a bloc that is more complicated level of institution. The objective of this paper is to fill these gaps on the basis of existed studies and to supplement by novelties directly applicable to the proliferation of interregional trade agreements.

Theory

We construct explanation for proliferation of interregional trade agreements relying on bargaining theory proposed by Fearon (1998) and Mansfield and Reinhardt (2003) determinants of regional integration. The former proposes the theory revealing the main principles of cooperation in international relations, while the latter account for proliferation of preferential trade agreements.

Application of Fearon's bargaining theory (1998) settles a basic foundation for building arguments accounting for interregional cooperation. He came up with a generalized foundation for understanding of collaboration logic. The bargaining theory consists of two stages: (1) bargaining phase and (2) enforcement phase. In the first stage, two actors bargain over a particular issue, while in the second stage, both parties care about compliance with the established agreement.

Fearon (1998) emphasizes that there are two costs for non-cooperation and delaying cooperation due to the negotiations over terms and conditions: (1) discount rate of future cooperation and (2) opportunity costs. First, discount rate or shadow of the future is a degree to which actors value future interaction after formation of agreement, which, in turn, has influence on patience of actors during the negotiations. If future benefits are higher than the current ones, then actor will patiently bargain over the object. This is closely connected with enforcement and monitoring of actor's behaviors within the settled rules of arrangement. Second, opportunity costs means that a state of affairs of non-cooperation is less beneficial than in a case of cooperation. During the lack of cooperation and negotiations actors lose time, when they can potentially benefit from already formed cooperation.

At the level of regional trade agreements, Mansfield and Reinhardt (2003) propose subsequent reasons: bargaining leverage, market access, trade gains, reducing volatility and impact of the World Trade Organization.

Market access and trade gains

Information on previous and current level of bilateral market access and trade are two intertwined causes in the proliferation of any trade agreements in the future, because they have a straight connection with opportunity costs. As two actors have had large market access and trade gains have increased in the present time, it means that there is a great potential to expand cooperation further. Hence, as future benefits grow up, opportunity costs increase implying that arrangement will be more likely.

Hypothesis 1: *interregional trade agreement is likely between trade blocs, if previous and current level of bilateral market access and trade has a potential to expand further.*

Depth

As well as opportunity costs, discount rate parameter plays a huge role in stimulating regional trade blocs to cooperation in interregional trade format. As mentioned above, main actors in forming interregional trade agreements are blocs consisting of several countries. Each bloc varies over terms and conditions under which they work. It means if one bloc has strict internal rules and each constituent obey them, then, a bloc has a high level of policy coordination. This leads to assumption that a quality of integration within trade bloc itself is a very important factor for creation of interregional trade agreement, because more integrated bloc is constant in its policy [Hufbauer and Schott, 1994; Efird and Genna, 2002; Efird and Genna, 2003; Feng and Genna, 2003; Genna and Hiroi, 2004; Feng and Genna, 2005; Geda and Kebret, 2007; Genna, 2011].

Hypothesis 2: *higher integrated trade bloc is likely to form interregional trade agreement with other higher integrated trade bloc.*

Level of development

Regional trade blocs pay a huge attention to the level of development meaning that economic prosperity and consumer capability of blocs directly indicate future profits from trade agreement. This factor is linked to increasing opportunity costs parameter, because a high level of consumer capability increases amount of benefits in the future. In this sense, emphasizing the difference between Hypothesis 1 and Hypothesis 3 is very crucial. Hypothesis 1 accounts for understanding past and present levels of partnership by analyzing their trade flows, however, they do not address a potentiality of consumers. Hypothesis 3 directly shows a consumer capability of blocs, which gives insights about realization degree of products in the future. This leads to assumption that the level of development shows possible benefits from cooperation without accounting current state of affairs between blocs.

Hypothesis 3: *interregional trade agreement is likely between trade blocs consisting of more developed states.*

WTO and trade disputes

Opportunity costs parameter affects interregional cooperation by opting between current status of instability of global economy and disputes in the WTO and creation of stable ties with partners through interregional trade agreement. If regional trade organizations are satisfied with current state of affairs in international arena, they will not try to cooperate through bypassing existing system. However, it is not true, because trade blocs are forming trade agreements with each other due to suffering from existing rules and subsequent dissatisfaction with them.

The WTO is considered as one of the most inclusive organizations in the world, which facilitates trade flow and eliminates trade barriers. This institution has two positive and one negative features that impact interregional cooperation. Firstly, participation in the WTO means meeting high requirements recognized by international community. Secondly, the WTO aims to exchange information between members. However, thirdly, it has a drawback as many members have different interests at the same time. Mansfield and Reinhardt (2003) explicitly point out that the WTO can balk at some issues, which cannot be tackled unanimously. This was firmly confirmed by the Doha Round, when the United States of America, the European Union and developing countries had long discussions on agriculture [Gallagher, 2007]. In other words, when there is an absence of consent between members on a particular problem, the WTO needs time for finding a solution. Therefore, countries want to have a «backup» plan. As an alternative plan to the WTO, states see interregional trade agreements guaranteeing certainty in relations with most important trade partners.

Hypothesis 4a: *interregional trade agreement is likely between trade blocs consisting of states, which are members of the WTO.*

Logically, those regional trade blocs comprising states, which violate rules of the WTO and frequently complained by other states, are not reliable partners. As Fearon (1998) claims in the enforcement stage, there is a repeated Prisoners Dilemma and each counterpart is monitoring other side. In this sense, already well known as a violator having a spoiled history of disputes is a reluctant partner in interregional trade agreement. It is evident that actors are interested in predictable partnership, because it helps to establish more long-term and reliable cooperation, which, in turn, positively increases benefits from trade. Intuitively, the opposite case brings high risks for business due to the unexpected consequences from unilateral actions of violator country participating in a particular bloc. Therefore, trade blocs comprising states often violating the WTO rules are not reliable partners for formation of interregional trade agreements.

Hypothesis 4b: *interregional trade agreement is not likely between regional trade blocs consisting of states, which are frequently engaged in trade disputes in the WTO.*

Research design

Regional trade blocs comprise three or more states, vary in internal integration depth and act as one entity in the world. Therefore, the unit of analysis is bloc-year. Generally, as non-economic factors represent categorical conceptions we take average number in one year. In economic indicators figures are foremost assessment tool and therefore a sum of numbers in one year is more relevant.

We choose the relationship between the European Union and other trade blocs as a general pattern, because the former has the largest number of this trade agreement and is the most developed trade bloc nowadays. Furthermore, the European Union negotiates and signs trade agreements with particular groups, while others are not considered as partners for cooperation. Hence, there is a question on what criteria are based European Union's selectivity [Haas, 1961; Dorrucci et al., 2004; Malamud and Schmitter, 2007; Telò, 2013].

Although, someone can argue that focusing on the European Union and other blocs' cooperation will lead to selection bias, there is an argument that many regional trade blocs purport to emulate an integration pattern of the European Union [Haas, 1961; Dorrucci et al., 2004; Malamud and Schmitter, 2007; Telò, 2013]. Particularly, justification for this is based on the fact that the European Union is a leader in interregional cooperation and other regional blocs are willing to seek for this model, therefore it is worth revealing common patterns from the European Union's relationships with the rest of regional trade blocs. As the European Union was formed in 1992 and generally interregional trade agreement emerged from that period, we decided to collect data from 1993 to 2012. The data is panel, because there are determinants changing over time and comparing different subjects. There are 26 regional trade blocs, which are formally registered in the Regional Trade Agreements database of the WTO.

Dependent variable

Dependent variable is the status of trade agreement between the European Union and 26 regional trade blocs and denoted as *IRTAwithEU*. According to the status of cooperation, it is divided into two groups, 0 in a case of non-negotiations and of non-agreement and 1 in a case of ongoing negotiations over agreement and of already formed agreement (see Table 1).

Table 1
Descriptive statistics

	(1)	(2)	(3)	(4)	(5)
VARIABLES	N	Mean	SD	Min	Max
IRTAwithEU	479	0.134	0.341	0	1
Rtaid	479	14.51	8.373	1	26
Year	479	2,003	5.712	1,993	2,012

Import	479	5.221e+10	8.408e+10	3.481e+08	5.331e+11
Export	479	4.601e+10	7.231e+10	6.673e+07	4.532e+11
TotalTrade	479	9.822e+10	1.514e+11	4.217e+08	8.291e+11
ImportLogged	479	23.56	1.645	19.67	27.00
ExportLogged	479	23.40	1.837	18.02	26.84
TotTradeLogged	479	24.20	1.689	19.86	27.44
IAS	473	1.098	0.681	0.167	2.833
EIAS	471	1.226	1.036	0	3.667
PIAS	479	0.916	0.625	0	3
GDPpcMean	479	5,384	7,282	268	42,700
GDPpcConstMean	479	5,353	7,084	322	30,299
Membership	479	0.689	0.355	0	1
ComplainantinWTO	479	0.170	0.578	0	7
RespondentinWTO	479	0.153	0.506	0	5
DisputesinWTO	479	0.324	1.018	0	9.997
PolityDummy	479	0.328	0.470	0	1
EUpolityDummy	479	1	0	1	1
IASofEU	479	3.674	0.215	3.333	3.833
Distance	479	7,731	3,500	1,548	15,778

Source: Compiled by the author.

Specifically, as the dependent variable is dichotomous, we decide to use a logistic regression model. The regression is ran with (1) lagged independent variables, (2) clustering standard errors based on regional trade agreements and (3) using cubic splines for dealing with time-dependency [Beck, Katz, and Tucker, 1998]. Firstly, as we have panel data meaning that variables change over time, it is relevant to lag all explanatory variables. This complication calculates past effect of independent variables on current dependent variable. Secondly, clustering assumes that each regional trade bloc is different from each other. Thirdly, to cope with dependency arising from the panel nature of the data, we include cubic splines, as they consider each year as a distinct and independent from other years.

Independent variables

There are several independent variables as market access, trade gains, depth of integration, levels of development, WTO membership and WTO disputes.

As market access and trade gains aimed to present previous and current level of trade between actors, there is a need to take into account import and export flows between them. Theoretically, total trade flows reflect both discount rate and

opportunity costs, because if a trade flow between blocs is high in the past and present, then they are patient as it has a potential to extend to a higher level. Values on import and export are simply sums of member-states' indicators within one regional trade bloc. Then, we take the sum of these values for deriving a total amount of trade, *TotalTrade*, which was transformed to *TotTradeLogged* by logarithm. The data is collected from the International Monetary Fund's database called the Direction of Trade Statistics (2015).

Depth of trade blocs is measured by the Integration Achievement Score (*IAS*), which is widely used in the literature [Hufbauer and Schott, 1994; Efird and Genna, 2002; Efird and Genna, 2003; Feng and Genna, 2003; Genna and Hiroi, 2004; Feng and Genna, 2005; Geda and Kebret, 2007; Genna, 2011]. Higher integration score is equal to less discount rate and more opportunity costs for regional blocs. In addition, the integration score is calculated according to the following measures: (1) free movement of goods and services, (2) free movement of capital, (3) free movement of labor, (4) supranational institutions, (5) monetary coordination, and (6) fiscal coordination. The IAS varies from 0 to 5 and reflects a quality of integration in abovementioned fields.

The Gross Domestic Product per capita, *GDPpcMean*, taken from the World Bank (2016a) expresses the level of development within a bloc, because it precisely shows a consumer capability of citizens. Theoretically, *GDPpcMean* reflects status quo costs affecting the interregional cooperation.

Detailed information on the WTO membership (2015a) and the WTO disputes (2015b) is obtained from a database of the WTO. The WTO membership, *Membership*, is calculated in the following way: as a trade bloc comprises several states, firstly we determine participation of a country from a particular trade bloc in the WTO. 1 if a country is a member of the WTO and 0 if a country is not a member. Secondly, we derive average membership number of a regional trade bloc.

Technically, a procedure for the WTO disputes is similar, firstly, we identify participation in trade disputes as a complainant, *ComplainantinWTO*, and a respondent, *RespondentinWTO*, of one country from a particular group. Then, we calculate average trade disputes number of one bloc. Dispute history gives information on a possible behavior of counterpart based on the past experience. If a counterpart frequently complained or violated the rules of the WTO, it means that it can repeat these actions.

Control variables

The first control variable is a regime type, which is measured by *PolityDummy* obtained from the Polity IV Project and transformed to dichotomous variable [Marshall and Jaggers, 2002]. Hence, *PolityDummy* structured as 1 is democracy and 0 is authority. As previously mentioned in the cases of non-economic variables, we calculate average regime type scores of groups based on a polity score of each state.

In the same vein, EU's integration quality [Hufbauer and Schott, 1994; Efird and Genna, 2002; Efird and Genna, 2003; Feng and Genna, 2003; Genna and Hiroi, 2004; Feng and Genna, 2005; Geda and Kebret, 2007; Genna, 2011], *IASofEU*, should be taken under control, because other players see a uniformity of regional policy in the European Union and seek to cooperate. In other words, it seems that the deep level of integration within the European Union affects a potential counterpart to be more inclined for collaboration, because the former has already a high quality of coordination during negotiation process and after formation of agreement in transporting of goods and services, working of regional institutions, monetary and fiscal policies.

Lastly, another control variable is *Distance* between Brussels and other capitals of states consisting of regional trade blocs, because there is a possibility that near trade blocs are more inclined to form agreements than remote ones. The data is obtained from the GeoDist database [Mayer and Zignago, 2011].

Results

After running logistic regression based on the obtained data, generally, there are results supporting my arguments. Table 2 presents the estimates of independent variables on interregional

trade agreement between the European Union and other trade blocs. Along with deriving coefficients of the variables, we present an example from real international arena, where a typical case shows substantive effects, including confidence intervals and uncertainty level based on the averaged estimates of the main model. Confidence interval is a range of predicted probability of cooperation affected by explanatory variable, while uncertainty level is an extent to which we are not sure in the range.

Table 2
Estimates of interregional trade agreements

VARIABLES	1 Logit coefficient (Model 1)
L.TotTradeLogged	1.440***
	(0.517)
L.IAS	2.528***
	(0.627)
L.GDPpcMean	0.000192**
	(9.13e-05)
L.Membership	9.505***
	(1.988)

|	
L.RespondentinWTO	-5.970***
	(0.867)
L.ComplainantinWTO	-1.490***
	(0.543)
L.PolityDummy	0.880
	(1.226)
L.IASofEU	30.72***
	(8.374)
L.Distance	0.000266
	(0.000207)
Agreeyrs	-2.900***
	(1.029)
_spline1	0.0246
	(0.0182)
_spline2	-0.0507**
	(0.0223)
_spline3	0.0364**
	(0.0170)
Constant	-142.9***
	(26.44)
Observations	477
Robust standard errors in parentheses; Significance: *** p<0.01, ** p<0.05, * p<0.1	

Source: Compiled by the author

First, according to Table 2, the result of total trade flow between the European Union and other trade blocs is evident, it positively and significantly affects interregional co-operation. As *TotTradeLogged* flow aimed to capture Hypothesis 1, where previous and current level of trade gains and market access are factors triggering for further cooperation, it is seen that the European Union and other regional trade blocs are motivated by increasing benefits from trade through opening broader own markets. Hence, based on the estimates of total trade, empirical results support Hypothesis 1.

As it is seen from Fig. 1, total trade based on the sum of import and export flows shows gradual increasing in probability of interregional cooperation. As the total trade raises up, probability grows up. However, along with a growth of probability, uncertainty in formation of interregional cooperation increases as well.

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Second, an estimate of *IAS* score supports the role for depth of integration in Hypothesis 2. The European Union is more likely to negotiate and form agreement with more integrated trade bloc. This is evidence for claiming that uniform policy and high level of coordination are very important factors in choosing partners for cooperation, because these features show to what degree a partner is reliable and predictable during the negotiations and enforcement stages and after establishment of arrangement.

Figure 1.
Substantive effects of total trade flows in EU-averaged bloc cooperation
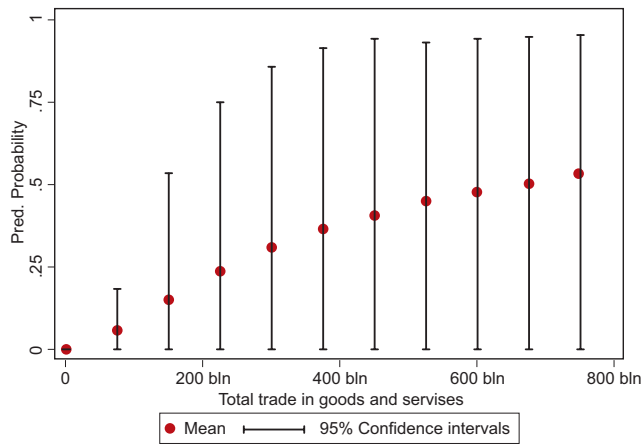
Fig. 2 presents confidence intervals of Integration Achievement Score aimed to show depth of integration. At 0 score there is 0 probability for cooperation, which can be said with 0.01 uncertainty. If there is a trade bloc with 1 IAS score, then a probability negligibly increases. At 2 score cooperation can vary between 0.05-0.45 meaning that there is almost 0.40 uncertainty in a probability of cooperation between the European Union and other averaged trade group. However, there is a predicted probability ranging from 0.15 to 0.95 at 3 IAS score, while uncertainty fluctuates for 0.80 approximately. Therefore, the typical case based on indicator of depth level shows a trend on increasing of probability in negotiations and agreement on interregional trade as well as growth of uncertainty in them.

Third, as claimed in Hypothesis 3, the level of development is one of the essential qualities for establishing inter-bloc arrangement, as it gives insights on consumer capability for potential partners. The level of development is measured by the Gross Domestic Product per capita, GDPpcMean, which has a high significance at 0.95. Therefore, it can be stated that a high development level increases a probability of the interregional trade agreement with the European Union.

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Figure 2.
Substantive effects of IAS score in EU-averaged bloc cooperation
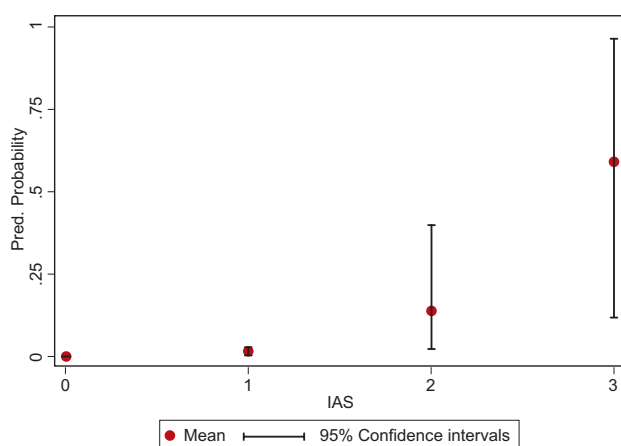
Source: Compiled by the author.

Particularly, as GDP per capita rises up, probability of cooperation between the EU and the averaged trade bloc increases simultaneously. Nevertheless, along with them, uncertainty level also markedly goes up. For example, a trade bloc with 6000$ GDP per capita shows probability of cooperation varying only between 0.03-0.06, meaning that there is 0.03 uncertainty. A trade bloc with 12000$ GDP per capita has 0.05-0.14 probability with 0.09 uncertainty. At the same time, at 18000$ GDP per capita confidence intervals varies between 0.06-0.48. In so doing, we observe 0.42 uncertainty in this range of predicted probability. It is evident that uncertainty enhances, as GDP per capita goes up. In terms of the argument, this trend is consistent, because a trade bloc with more GDP per capita is more inclined to create interregional trade agreement.

Fourth, membership in the WTO carries several signals for blocs. On the one hand, as a state participates in the WTO, it should meet international recognized standards. On the other hand, the WTO is an international institution, which shares information about other actors. All these two factors are positive features of the WTO. Nevertheless, there is a negative feature of the WTO, which is its complex structure due to number of members and impedes to make a quick and efficient decision. This negative peculiarity triggers blocs to establish bilateral interregional trade agreements instead of relying only on the WTO rules.

As Fig. 3 shows, there are confidence intervals of the WTO membership. If no one in a regional trade group is a member of the WTO, then a probability of cooperation is equal to 0 at the bottom. Obviously, uncertainty level is very low, 0.01 approximately. If each state included into trade bloc participates in the WTO, then confidence intervals increase from 0.05 to 0.6. Therefore, there is confidence in uncertainty of aforementioned predicted probability for 0.60. In this typical case based on *Membership* figures of the averaged trade bloc, it is seen that a probability of cooperation is very low. Nevertheless, a general trend is in compliance with the results of Model 1.

Figure 3.
Substantive effects of WTO membership in EU-averaged bloc cooperation

Last, the estimates of the WTO respondents and complainants are negative and significant. Precisely, participation in the GATT/WTO disputes as a respondent, *RespondentinWTO*, and as a complainant, *ComplainantinWTO*, decreases a probability of cooperation at the bloc-to-bloc level. Thus, it is relevant noting that Hypothesis 4b is fully supported by respondent and participant records in the GATT/WTO dispute history. Bloc consisting of states with a dirty dispute history is undesirable partner for the European Union for formation of interregional trade agreements.

Regarding control variables, they are different in their degree of influence on formation of interregional cooperation. Despite the fact that *PolityDummy* has a positive effect, it does not significantly affect the European Union and other regional blocs to form agreements between each other. We suppose that polity types are not considered as an insurmountable barrier for trading at the interregional level of collaboration, because blocs have no feature of regime as in case of state-to-state cooperation.

Lastly, *Distance* shows that a range of kilometers does not significantly affect cooperation between the European Union and other blocs. This finding can be explained by the fact that at the group-to-group level of agreements actors do not take into account distances between them. If there are potential trade gains and absence of formal barriers for trade, then, despite the remote locations, blocs will negotiate and form agreements.

This section of the paper is structured to show an effect of each explanatory variable on interregional cooperation. Bilateral total trade, depth of integration, the WTO membership, the WTO respondents, the WTO complainants and the level of development measured by GDP per capita show trends consistent with the the-

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ory. We suppose that taking means of the variables, which is similar to indicators of the averaged trade bloc, demonstrates average picture of bloc-to-bloc collaboration influenced by independent factors.

Robustness check

The estimates of Model 1 needs robustness check in order to be confident in obtained results. Notably, almost all explanatory variables have several alternative measures, while only *Membership* is unique and cannot be relevantly substituted by other alternative variables. Substitutable variables are *TotTradeLogged, IAS, RespondentinWTO, ComplainantinWTO* and *GDPpcMean*, because each can be adequately tested with alternates.

There are Model 2, Model 3, and Model 4 with different specifications, which generally support original Model 1. Meanwhile, we do not change specifications on lagging, clustering based on regional trade agreements and including cubic splines. These specifications are the same for Model 1 as well as for other three models.

Firstly, we substitute *TotTradeLogged* with *ExportLogged*, export flows between the European Union and regional blocs, in Model 2. Export is a component of total trade, therefore it can be considered as an additional indicator of trade level. Significance of exports flows is high at 95% level, which means that it has robustness. Predicted probability of interregional cooperation conditioned on export flows between particular trade blocs. It is seen that probability increases along with a growth of exports, although uncertainty level also goes up. For instance, if there is 30 billion dollars export flows, then cooperation will likely occur for 0.15 approximately with 0.13 uncertainty level. This trend is continuous and seems that a high level export flows between trade blocs definitely magnifies chances for cooperation. *IAS* score can be divided into economic IAS, *EIAS*, consisting of a free movement of goods and services, of a capital and of a labor and political IAS, *PIAS*, consisting of supranational institutions, monetary and fiscal coordination. In Model 2 we include *EIAS*, which significantly and positively affects interregional cooperation. *GDPpcMean* is changed to *GDPpcConstMean*, which is the Gross Domestic Product in constant dollars in 2005. The reason for this substantiation is laid in possibility that the GDP gradually rises everywhere over time. For the sake of taking into account this trend and seeing what can be happened in case of stable dollar we include *GDPpcConstMean*. Its significance substantially decreased, while the effect is positive. This means that the influence of development on cooperation of blocs is weak in comparison with other explanatory variables. *Membership* in the WTO is significant and positive despite the made changes in Model 2. In order to check robustness of *RespondentinWTO* and *ComplainantinWTO* we create *DisputesinWTO* by summing numbers of participations as a respondent and a complainant. The significance level is at 0.99, so undoubtedly it confirms that frequent disputes history negatively affects a probability of cooperation between blocs.

Table 3
Robustness check of Model 1 with three different models

VARIABLES	(1)	(2)	(3)	(4)
	Model 1	Model 2	Model 3	Model 4
L.TotTradeLogged	1.440***			
	(0.517)			
L.ExportLogged		1.824***		
		(0.347)		
L.ImportLogged			0.343	1.545***
			(0.413)	(0.254)
L.IAS	2.528***			
	(0.627)			
L.EIAS		2.466***		2.724***
		(0.482)		(0.599)
L.PIAS			0.361	
			(0.646)	
L.GDPpcMean	0.000192**			-3.85e-05
	(9.13e-05)			(5.53e-05)
L.GDPpcConstMean		2.78e-05	0.000304***	
		(9.82e-05)	(8.61e-05)	
L.Membership	9.505***	11.65***	9.609***	8.549***
	(1.988)	(1.902)	(1.164)	(2.437)
L.RespondentinWTO	-5.970***		-6.298***	
	(0.867)		(1.090)	
L.ComplainantinWTO	-1.490***			-3.296***
	(0.543)			(0.720)
L.DisputesinWTO		-3.320***		
		(0.443)		
L.PolityDummy	0.880	1.571	0.768	0.272
	(1.226)	(1.335)	(1.104)	(1.261)
L.IASofEU	30.72***	32.70***	30.81***	29.87***
	(8.374)	(6.764)	(6.402)	(9.451)
L.Distance	0.000266	-8.63e-05	0.000312**	-0.000103
	(0.000207)	(0.000249)	(0.000151)	(0.000219)
Agreeyrs	-2.900***	-3.695**	-2.813***	-2.835*
	(1.029)	(1.447)	(0.576)	(1.700)
_spline1	0.0246	0.00936	0.0293**	0.0337
	(0.0182)	(0.0255)	(0.0138)	(0.0295)

_spline2	-0.0507**	-0.0393**	-0.0570***	-0.0603***
	(0.0223)	(0.0159)	(0.0170)	(0.0198)
_spline3	0.0364**	0.0292***	0.0395***	0.0388***
	(0.0170)	(0.00915)	(0.0117)	(0.00901)
Constant	-142.9***	-154.6***	-115.5***	-138.0***
	(26.44)	(21.06)	(24.79)	(27.41)
Observations				
	477	447	453	447
Robust standard errors in parentheses; Significance: *** p < 0.01, ** p < 0.05, * p < 0.1				

Source: Compiled by the author.

This part of the paper is aimed to test robustness of the Model 1. It is made in a way, where we analyze and compare Model 1 with other models with different specifications. The main results support my hypotheses, however, influence of some explanatory factors can be doubtful. Particularly, all independent variables in Model 2, Model 3, and Model 4 are congruent with Model 1, except *GDPpcMean* created to test the effect of development level. *GDPpcMean* is weaker in Model 2 and 4 in comparison with Model 1, while in Model 3 it is significant under effect of *PIAS*. The influence of *PIAS* and *EIAS* is also very interesting finding, because it shows that political integration of a regional bloc does not have significant effect, while its economic integration substantially affects interregional cooperation.

Conclusion

To summarize, the bargaining theory through hypotheses above can explain formation of interregional trade agreements. To reiterate, market access, trade gains, depth of integration within a trade bloc, the level of development, effects of the WTO and frequent trade disputes have affected blocs in establishing trade agreements between each other. Particularly, market access and trade gains are incentives to build up more sophisticated and profitable cooperation based on previous and current state of affairs between two blocs. Quality of integration within a trade bloc is an evident indicator to what extent it is a reliable and predictable partner. If a trade bloc is deeply integrated, it is more uniform in its foreign policy. Regarding the WTO, the institution is rather complicated to respond to emerging issues quickly which harms its members. Therefore, in order to have a direct connection, trade blocs are seeking for cooperation between each other as an alternative option to the WTO. Furthermore, states engaging in trade disputes are considered as undesirable partners, which means that a regional trade bloc comprising frequent violator-states or complainant-states are less attractive for cooperation.

Overall this paper contributes to the field of international political economy regarding mechanisms of international trade. Before, there were notable researches on preferential trade agreements and regional trade agreements, while there is no

research devoted to interregional trade cooperation, particularly with theoretical argument on depth of integration and empirical testing of all variables on bloc-to-bloc cooperation. This research is the first attempt to systemize knowledge on general factors affecting interregional cooperation.

Moreover, understanding of interregional trade agreements has useful implications for policy-makers, political scientists and economists. They may use information of previous bilateral trade, depth of integration within a potential partner, its level of development and dispute history of the WTO system which can be helpful during negotiation processes. Skillful negotiators may bargain over trade barriers by taking into account strengths and weaknesses of counterparts in these fields. Policy-makers should be especially concerned with choosing the most reliable and predictable partners in cooperation by paying attention to disputes history, as it has a direct influence on increasing economic prosperity and development of states included in trade blocs. Lastly, this topic is also important as the scale of regional trade blocs is huge and cooperation between two blocs can lead to substantial changes in particular regions, and in the world afterwards.

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Абылкасымов Б.[1]

Формирование межрегиональных торговых соглашений:
какие факторы побуждают торговые блоки к сотрудничеству?[2]

Данное исследование предоставляет объяснение формированию межрегиональных торговых соглашений через «теорию переговоров» посредством акцентирования внимания на роли доходов от торговли, глубины интеграции в рамках блока, уровня развития блока, членства и истории споров в ВТО. Результаты демонстрируют позитивное и значительное влияние доходов от торговли, глубины интеграции и членства в ВТО, тогда как история споров значительно, но негативно влияет на межрегиональное сотрудничество. Данные результаты имеют важное значение для лиц, ответственных за формирование и реализацию политики в сфере внешнеторговой деятельности, при заключении торговых соглашений между блоками.

Ключевые слова: *региональные торговые блоки, межрегиональные торговые соглашения, межрегиональное сотрудничество, межблоковое сотрудничество, доходы от торговли, глубина интеграции, Всемирная торговая организация, торговые споры.*

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