

Economic Integration Agreements: An International Political Perspective

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Abstract

This study examines the effect of bilateral interstate cooperation and economic and geographical characteristics in determining their effect on the different forms of integration agreements. A large sample of 185 countries, for a period 1990 - 2004, to identify domestic and international political and economic motivations contributing in the formation of trading agreements, is analyzed. The results of this study indicate that interstate dyadic cooperation plays a vital role in determining the move towards the higher level of integration arrangement among states. Moreover, the dyadic cooperation becomes less important for the pair when they currently experience the high level of bilateral trade salience.

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1 Introduction

“The political side is even more important for FTAs than for most other policy issues. After all, it is a political constraint – the actual or perceived inability to achieve the better option of multilateral reductions in trade barriers – that provides the justification for the study of the second-best option of FTAs.”
(Wonnacott and Lutz 1989, P.61)

With the end of cold war, preferential trade agreements have increased significantly in number and scope in international relations (Mansfield and Reinhardt 2003). The trade agreements being concluded have different features around the world. These arrangements range from mere tariff preferences on a particular number of products to the elimination of all the tariff barriers and beyond the harmonization of standards and laws on services, rules on environment, intellectual property rights, investment and industrial location. This necessitates the creation of institutions such as EU³, which organize and create facilities to provide public goods at regional level. On the other side, if these instruments are kept out from the integration arrangement negotiations, and reliance is only on tariff reductions and to increase trade flows, then there will be no need in forming the strong binding institutions, and the countries will bank on loosely integrated agreements. For this, a weak-institutionalized framework will be sufficient. This fact suggests that every specific arrangement has different feature and that these arrangements are heterogeneous in nature. We argue that the formation of different types of agreements is also motivated by international factors ascertaining the political, military and economic cooperation sent by states to each other. The literature, discussing the determinants of trading agreements, has focused rigorously on the economic and geographical factors (Baier and Bergstrand 2004, Egger and Larch 2008). Although, economic and welfare motives are important in the formation of integration agreements; the role of international political and strategic factors cannot also be undermined. They play equally an important role in the successive conclusion of integration arrangements. The economic and political factors are in fact complement to each other (Martin et al. 2010).

The decision to form certain type of integration agreements with selected partners cannot be justified only on economic grounds. Schiff and Winters (1998) raised the argument that RIAs are more than just economic policies. Rather they emphasized that regional integration arrangement

³ As putted by Balassa (1961), RTAs can be classified from the least integrated to the more integrated, as a step by step approach to economic union, through free trade area, custom union and common market.

is a political one. RIAs contain too often the political motive and this political intent frequently prefers economically more costly policy alternatives to the less costly ones.

They state:

“Politics support many other RIAs, including NAFTA, Mercosur, the ASEAN free trade area, and the Southern African Development Community. The economics profession is not particularly well equipped to analyze the origins of such political motives and certainly is not qualified to comment on their legitimacy.”

(Schiff and Winters 1998, P.185)

From political and institutional point of view, the literature has focused a lot on domestic political factors contributing or hindering the formation of trade agreements. It identifies that when interests harmed by trade liberalization hold strong political clout, leaders have an obstacle to negotiate trade agreements (Grossman and Helpman 1995). Policymakers do not construct foreign economic policy in a domestic political vacuum, and domestic political incentives can heavily influence their decision to pursue (or not pursue) PTAs (Kastner and Kim 2008). In a similar vein, Mansfield et al. (2002) argued that democratic leaders are more prone to form trade agreements. Also Mansfield et al. (2008) develop an argument that democracies are more prone to conclude higher levels of integration. We argue that political factors can be understood well if we examine them by distinguishing the internal (domestic) and external (international) politics.

The decision of states, choosing a particular type of agreement with specific states, is contingent upon the international bilateral cooperation sent by countries to each other. International cooperation is a major factor, in the aftermath of which, different types of trade agreements are concluded.

Apart from domestic political factors, there is literature available identifying the strategic and political motivations behind trade agreements. The impact of high intensity conflicts such as war (Martin et al. 2010) and propensity to disputes (Vicard 2008) on the formation of trade agreements have been studied but the role of interstate cooperation is not examined yet according

to our knowledge. Therefore, our question shapes up as whether there are international constraints in the negotiations and implementation of different types of integration agreements. This study extends the analysis that mutual interstate cooperation is important in shaping up the trade policy of pursuing trade agreements⁴. The political and diplomatic cooperation is the major determinant of forming higher levels of integration. In addition to increase welfare for their citizens, states also conclude trade agreements to strengthen their relations by developing their political dialogue and reinforcing their cooperation. Trade agreements, in fact, reflect the level of political cooperation and trust nation-states have with each other.

Regional economic agreements reflect the level of political cooperation of the countries involved and serve to affirm their political relations. So, if they aim to improve bilateral / regional⁵ relations through integration arrangements, they must be more cooperative to each other. The quality of interstate cooperation and political aim is vital for the successive conclusion of regional and bilateral arrangements; we further argue that higher levels of integration result from higher levels of dyadic cooperation. Our main findings support this view as the dyadic cooperation has significant effect on the formation of integration arrangement. Moreover, the regime type plays an important role; higher the democracy, higher integration agreement. Finally, on the external variables side, the geographical characteristics such as language ethno and distance prove to be significant. The role of net cooperation is ambiguous when there is considerable trade salience between the dyad.

The remainder of the paper is structured as follows: Section 2 discusses theoretical literature. Empirical research is analyzed in section 3. Econometric model used is described in section 4. Data and hypothesis is presented in section 5. Section 6 contains the results and their interpretation and then the article concludes.

2 Theoretical Literature

There has been a lot of theoretical research on the topic of regional trade and integration agreements. We can divide the literature into two broad categories. One is normative approach, discussing on the subject of welfare implications and the other is positive approach paying

⁴ The terms economic integration agreements and trade agreements are used interchangeably although the formation of trade agreements are the preliminary steps towards economic integration.

⁵ Taking into account of both agreements whether on regional basis or bilateral.

attention to the causes and motivation behind the negotiations to form an integration arrangement.

The discussion of the effects of trade agreements can be divided into two categories: Static Analysis and Dynamic Analysis (Bhagwati 1996a). Bhagwati states that static analysis refers to the welfare implications of trade agreements whereas dynamic analysis is concerned with the effects of these preferential trading agreements on the multilateral trading negotiations going on at WTO. In the other words, RTAs are the building blocks or stumbling blocks for multilateral free trade negotiations. For static analysis, there is a continuous debate among researchers that whether the motivation behind the formation of regional trade agreements between the pair of countries is derived by the higher level of existing trade between them or not and whether they divert trade ⁶. For the implications of trade policy of pursuing trade agreements by the states on WTO negotiations we see two schools of thoughts being emerged. Bhagwati leads one school of thought by arguing that preferential trade agreements⁷ are detrimental for multilateral trade negotiations and Baldwin (2006) has the opposite view and points that these agreements push a drive for multilateral free trade negotiations.

There has been a long debate on the effects of trading agreements; much research has been conducted on the causes and motivations of countries to conclude integration agreements. The theoretical literature on regionalism provides the predictions about which countries will form integration agreements. Among them, some argue that welfare-enhancing (economic) considerations are important in trade deals while others involve political motivations, affecting the choice of integration agreements.

One welfare consideration is that countries of similar sizes are more inclined to conclude any type of trade agreement than those who are of asymmetric sizes. Michaely (1998) analyzes that in the aftermath of trade agreement, a smaller country will gain more if it concludes an

⁶ Krugman (1991a) argues that free trade areas may lead to trade diversion rather than trade creation but in practice, the prospects of trade diversion is very small because most of the agreements are formed among the natural trading partners and hence welfare is not threatened. In contrast, Bhagwati and Panagariya (1996) raised the point that initial volume of trade bears no relationship to welfare implications of preferential trade agreements. Krishna (2003) tested the hypothesis that trade agreements between significant existing trading partners lead to welfare but he finds no empirical support for this argument.

⁷ Bhagwati uses the term Preferential Trading Agreement for all types of agreements. According to him, all types of arrangements are preferential and discriminating in nature whether they are FTAs, CUs, or MUs. For our analysis, we will keep the heterogeneity of these agreements and treat them according to their intensities of integration.

accord with larger country and in reverse, and the larger country will lose. Due to this negative welfare implication, his models predict that agreements take place when sizes of countries are symmetric. The disparity in sizes will be an incentive for at least one country to opt not to participate in an integration accord.

Another welfare argument is that free trade agreements favor the countries if they are complementary to each other in terms of their production structures. In other words, the countries of different development levels will be benefited as they will buy and sell the products which they do not produce and so get the advantage of specialization. In this context, Krueger (1999) is of the view that an agreement between a developed and developing country is welfare improving. The standard Heckscher-Ohlin model also advocates this idea that pair of countries having identical factor endowments, lose economically and they will be having less scope of gains from trade based on comparative advantage.

This opinion of welfare gains is contrasting to the political consideration which favors the trade deal between the similar partners. Levy (1997) did the political-economic analysis of trade agreements and argued that it is politically feasible for the countries of same size to conclude trade agreement. He further pointed that countries are more inclined to form trade accords if they are on the same side of the world median capital-labor ratio.

Another important aspect of integration agreements is the involvement of domestic political factors. Pressure groups (veto players) play a vital role in the conclusion of preferential arrangements. Grossman and Helpman (1995) offer political economy motives on the formation of free trade agreements. Their theoretical model takes account of the bargaining processes in two stages. First stage is that political competition between different interests among domestic players in each country shapes the government policy choice and the second stage comes when the governments negotiate and pursue the policy of give-and-take. The success of this second stage of bargaining is highly dependent upon the regime type whether it is democratic or autocratic. For example, Mansfield and Milner (2002) developed the argument that democratic leaders have political incentive to conclude trade agreements. Trade agreements could act as signal to the median voters that the decision is made for their own welfare rather than for other special interests. There is no doubt that political economic considerations, political parties or even individual politicians have played a major role in driving the formation of BTAs (Menon

2007). Analyzing the formation of different types of economic arrangements in the context of regime type, Mansfield et al. (2008) have argued that the size of veto players is crucial and their homogeneity is a question mark. They are of the view that more the regime is democratic; more are the chances that country will form higher level of integration agreement and vice versa. They argue that any regime type will formulate certain trade policy to retain government office. It will not take any step unless it will be benefitted by its action. They further argued that democracies have larger selectorates as compared to autocratic regime which is supported by a small number of interest groups. Democracies provide public goods to its selectorates which provides them the push towards heightened integration whereas autocracies rely on private goods such as rents from protectionism that they can redistribute to small number of groups. They have also analyzed and compared the types of democracies and argued that democracies are not homogenous all the time. In certain democracy, there are numerous players whose coordination is necessary to sign integration agreement. If there are more veto players and consequences of signing agreements are expected to hurt at least one, then they will try to hinder the proposed agreement. They discussed that as their number increased, there will be large divergence in their preferences and hence they impede these arrangements. So in democratic regime, the coherence between the players is crucial. On the other hand, they analyzed the policy making on the part of autocratic regime and argue that a dictator also faces barriers to sign integration agreements by veto players but as the number of interest groups is smaller in this type of regime and if this group is formed of exporters, then they will encourage agreements. One important point they have raised in their research is that domestic interest groups are sensitive to the intensity of agreements. The signing of high degree of integration such as customs union may decrease the lobbying power of certain group so it will tend to block as it reduces their power. Establishment of common external tariff will reduce power of industries lobbying for higher tariffs. On the economic grounds, the formation of FTAs face opposition but not to the extent of CU. But when FTA is concluded, the resulting competition will erode domestic non-competitive industries and as a consequence, the displaced industries' lobbying activities decreases.

The issue of cooperation and conflict on a country's exports has been studied before (Pollins 1989a) but not in the context of RIAs. RIAs have different dynamics than that of trade volume. They include other objectives (investment, industrial location) not covered by trade flows. These objectives will be achieved through successful conclusion of an RIA if the dyad has

cooperation among them. Fernandez et Portes (1998) developed the argument that integration agreements are concluded keeping nontraditional factors in focus in addition to the traditional factors. They argue that states join integration agreements to increase their bargaining power with respect to third parties. They pointed that agreements act as signaling device and argued that RTAs signal not the policies of individual governments but their *future relationship*. The countries will benefit from these nontraditional factors and conclude integration agreements when there will be interstate cooperation between them.

RTAs are an important tool of diplomacy (Schiff and Winters 1998). They argued that RIAs help to stabilize other countries. Also, RIAs respond to outside threats by cementing relations between integrating partners. These objectives are achieved when nations have bilateral affinity and cooperation.

RTAs are also concluded in the shadow of high intensity conflicts. Martin et al. (2010) developed a theoretical model in which they emphasized that security gains and military conflicts play an important role in the formation of regional trading agreements. They are of the view that in addition to economic gains, RTAs can help to provide political forum which helps to reduce the tensions between the dyad. They analyzed the formation and blockage of RTAs as the result of old wars and new wars. They argue that RTAs have a high probability of formation among the dyads that experience military conflict in the past. They further argued that hostile conflicts in the recent past hinder the formation of RTAs. The deep integration agreements are formed among the dyads that experience high level disputes (Vicard 2008).

3 Empirical Literature

According to our knowledge, only few empirical researches have been conducted in identifying the causes and motivations behind the formation of trade agreements. Welfare considerations have been broadly argued not much emphasizing on the political economy. The foremost economic and welfare consideration is that the countries of larger and matching sizes are motivated to form trade agreements (Baier and Bergstrand 2004 and Laura et al. 2009). In the context of economic and geographic causes, Baier and Bergstrand (2004) provide empirical benchmark to unearth and analyze the factors behind trade agreements. They proposed and concluded empirically that that pairs of countries' governments tend to form FTAs when 1) the closer are two countries in distance 2) the more remote a pair of continental trading partners is

from the rest of the world 3) the larger and more similar in economic size are two trading partners; 4) the greater the difference of capital-labor ratios between two partners; 5) the smaller the difference of the members' capital-labor ratios with respect to the rest of the world's capital-labor ratios. They considered whether there is presence or absence of trade agreements and used binary probit model to estimate the plausibility of free trade agreements.

In addition to standard economic and geographical factors, there are strategic and domestic as well as international political economy factors also which play a major role behind the successful formation of trade agreements. The researchers have worked in unearthing domestic political motivations in the recent past for example Mansfield et al. (2002) examine domestic political factors affecting interstate economic cooperation. They argue that for a state, the decision to enter into an integration agreement depends largely on the regime type and the countries, which are more democratic, are likely to conclude trade agreement. They used binary logit model to demonstrate the probability of two countries signing a trade agreement. The domestic political factors influence on the formation of specific type of integration arrangements also. Mansfield et al. (2008) have argued about internal political economy of why nations choose particular type of arrangement⁸. They examined the role of veto players, regime type and domestic politics in the formation of integration agreements. They have used ordered probit model to test the intensity of integration by introducing domestic political economy variables such as domestic veto players, the regime types contributing to the formation of regional integration agreements. According to them, the size of veto players is crucial and their homogeneity is a question mark. They are of the view that more the regime is democratic; more are the chances that country will form higher level of integration agreement and vice versa. They argue that any regime type will formulate certain trade policy to retain government office. It will not take any step unless it will be benefitted by its action. They further argued that democracies have larger selectorates as compared to autocratic regime which is supported by a small number of interest groups. Democracies provide public goods to its selectorates which provides them the push towards heightened integration whereas autocracies rely on private goods such as rents from protectionism that they can redistribute to small number of groups. They have also analyzed and compared the types of democracies and argued that democracies are not

⁸ The types of agreements are being defined at WTO stating Preferential Trading Agreement, Free Trading Agreement, Custom Union, Common Market and Monetary Union. These different arrangements depict the intensity of integration which could be regional or bilateral.

homogenous all the time. In certain democracy, there are numerous players whose coordination is necessary to sign integration agreement. If there are more veto players and consequences of signing agreements are expected to hurt at least one, then they will try to hinder the proposed agreement. They discussed that as their number increased, there will be large divergence in their preferences and hence they impede these agreements. So in democratic regime, the coherence between the players is crucial. On the other hand, they analyzed the policy making on the part of autocratic regime and argue that a dictator also faces barriers to sign integration agreements by veto players but as the number of interest groups are smaller in this type of regime and if this group is formed of exporters, and then they will encourage agreements.

Another important aspect of internal politics was researched by Kastner and Kim (2008). They identified numerous factors which can play role in signing or proposing trading agreements. Their work differed in a way that they recognize that FTAs, which are successfully implemented, have different motivations than those which are just proposed. They tested political and economic variables (among which most of them tested in the previous literature) such as indicators of trade openness, joint democracy, interstate UN voting affinity, trade volume and political constraints. Their results proved that countries are likely to form free trade agreements when there is already a high trade volume between them. They also found that greater number of domestic political constraints hinder the signing of FTAs. Disaggregating the FTA process i.e. analyzing the determinants of proposed and signed FTAs, they found openness of trade to be more important at proposal stage but not significant when it comes to signing that particular agreement. For domestic political constraints, the result tells little whether agreement will be proposed but becomes an important predictor of whether two countries will ultimately sign an agreement.

The existing trade volume is found to be one of the most important determinants of forming free trade agreement. Magee (2003) measured that two countries are more likely to form a preferential trade agreement (PTA) if they are already major trading partners but making an important contribution by evaluating the effect of PTAs on trade, treating trade as endogenous variable. He also identified the factors predicting FTAs. Based on the results, he argues that countries conclude PTAs when they are similar in size (Baier and Bergstrand 2004) and are both democracies (Mansfield 2002) and Kastner and Kim (2008). He discussed that same capital-labor ratios of the pair of countries is a contributing factor for the conclusion of PTAs.

The integration agreements are of different nature. Some are deep and some are loosely integrated. There are factors which shape up different types of trading agreements. The socio-political factors behind deep integration are identified by Laura et al. (2009). They used discrete choice modeling to identify the role of socio-political factors determining the depth of integration. They tested all traditional variables such as income level, distance and remoteness (of the countries from rest of the world) by adding factors of socio-political nature such as democracy, high level of economic freedom, whether the countries speak common language and higher level of protection (tariff barriers). Their results show that the probability of reaching a higher level of integration increases with income level, economic freedom and cultural affinities, whereas it decreases with distance, income differences and factor endowment differences. They concluded that socio-political factors are significant in determining deep integration but economic factors are still most important. Based on the results for geographical factors, they argue that countries situated in proximity (natural trading partners) to each other will be more oriented towards creating a single market, hence deeper integration.

The role of interstate disputes and security factors cannot be undermined when the countries decide to enter into agreement with others. Integration agreements can also be formed in the aftermath of conflicts between the states and insecurity. Vicard (2006) has discussed role of interstate disputes and international insecurity in the process of formation of trade agreements. He divided RIAs into shallow (PTAs and FTAs) and deep (CUs and CMs)². Based on the results, he argued that interstate disputes foster deeper integration such as custom union and common market whereas international insecurity deters lower levels of integration such as PTAs and FTAs. He ran three different binary probit models, one for all RTAs, one for shallow RTAs and one for deep RIAs.

Uncertainty plays an important role in signing PTAs. This uncertainty can be of different types. Wu (2004) addressed the political and economic uncertainty and confirms them as positive contribution in choosing a particular level of integration. She decomposed the integration concept into three levels and used ordered probit model. The least integration level is sectoral cooperation, then FTA and highest one, the CU. She examined four types of uncertainty: political uncertainty, business cycle uncertainty, trade uncertainty and price uncertainty. Among them, she found out that trade uncertainty is significant. Also she concluded that democracy and

economic freedom are significant contributors to the chosen level of regional integration. Lastly, she argued that developing countries where institutions are not very strong, hesitate to form higher level of integration.

In the context of integration agreements, the empirical research for the economic and domestic political factors has been undertaken. Despite the current research on the role of military disputes (Vicard 2008) and war (Martin et al. 2010), the emphasis on other forms of conflict and especially interstate cooperation in the formation of trade agreements comprising international political factors is really missing. We intend to bridge this gap in the literature by analyzing empirically that trade agreements are also contingent on the interstate cooperation.

4 Econometric Model

The dependant variable in our research is discrete variable containing values in ranked order. We have assigned unique value to different types of integration agreements. There is binary sequential decision making by the countries. The first and the loose form of integration is Preferential trading agreements (PTA). Countries do enter into this type of arrangement and then they can decide to increase further integration and go *one step higher* by signing FTAs. This process could reach the highest level of integration which is monetary union. Having ordinal nature of our dependant variable, we choose ordered logit model to determine the different levels of integration.

The model is built around a latent regression in the same way as the binomial probit model. The ordinal variable Y is a function of latent variable ξ , which represents difference in utility levels from a decision.

The continuous latent variable is given by:

$$\xi_i = \sum_{k=1}^k \beta_k X_{ki} + \varepsilon_i = Z_i + \varepsilon_i \quad (1)$$

Where X_{ki} are the explanatory variables, β_k are the coefficients and ε_i is the random error which is understood independent of X and has a logistic distribution

This continuous latent variable ξ_i has different number of threshold points and the value of the variable Y depends on whether a particular threshold is crossed. In the current analysis, for our dependant variable, we have five integration levels, so the number of thresholds will be five.

$$Y_i = \begin{cases} 0 & \text{if } \xi_i \leq \delta_1 \\ 1 & \text{if } \delta_1 < \xi_i \leq \delta_2 \\ 2 & \text{if } \delta_2 < \xi_i \leq \delta_3 \\ 3 & \text{if } \delta_3 < \xi_i \leq \delta_4 \\ 4 & \text{if } \delta_4 < \xi_i \leq \delta_5 \\ 5 & \text{if } \xi_i > \delta_5 \end{cases} \quad (2)$$

Where δ_s are the unknown parameters to be estimated. Threshold 1 denotes that a pair of countries engages in a PTA, threshold 2 denotes an FTA, threshold 3 is CU, threshold 4 is CM and threshold 5 represents MU.

The ordered logit model estimates,

$$Z_i = \sum_{k=1}^k \beta_k X_{ki} = E(\xi_i) \quad (3)$$

When the β_k parameter and the N-1 δ_s have been estimated, they can be used to calculate the probability that Y (the dependant variable) will take on particular value. For example, when N = 6,

$$\Pr(Y = 0) = \Pr(Z_i \leq 0) = \frac{1}{1 + \exp(Z_i - \delta_1)}$$

$$\Pr(Y = 1) = \Pr(Z_i \leq \delta_1) - \Pr(Z_i \leq 0) = \frac{1}{1 + \exp(Z_i - \delta_2)} - \frac{1}{1 + \exp(Z_i - \delta_1)}$$

$$\Pr(Y = 2) = \Pr(Z_i \leq \delta_2) - \Pr(Z_i \leq \delta_1) = \frac{1}{1 + \exp(Z_i - \delta_3)} - \frac{1}{1 + \exp(Z_i - \delta_2)}$$

$$\Pr(Y = 3) = \Pr(Z_i \leq \delta_3) - \Pr(Z_i \leq \delta_2) = \frac{1}{1 + \exp(Z_i - \delta_4)} - \frac{1}{1 + \exp(Z_i - \delta_3)}$$

$$\Pr(Y = 4) = \Pr(Z_i \leq \delta_4) - \Pr(Z_i \leq \delta_3) = \frac{1}{1 + \exp(Z_i - \delta_5)} - \frac{1}{1 + \exp(Z_i - \delta_4)}$$

$$\Pr (Y = 5) = \Pr (Z_i \geq \delta_5) = 1 - \frac{1}{1 + \exp (Z_i - \delta_5)} \quad (4)$$

Hence, using the estimated value of Z and the assumed logistic distribution of the random error, the ordered logit model can be used to estimate the probability that the unobserved latent variable ξ_i falls within the various threshold limits.

The unknown coefficients and the thresholds can be estimated numerically by the maximum likelihood method, where the above probabilities are the elements of likelihood function. The probability that a higher integration level is chosen increases if the coefficients are positive and the corresponding explanatory variable augments. This can be seen by calculating the derivatives of the cumulative probabilities:

$$\frac{\partial \Pr(Y_i \leq M)}{\partial X_{ki}} = -\beta_j \frac{\exp(Z_i - \delta_k)}{(1 + \exp(Z_i - \delta_k))^2} \quad (5)$$

The interpretation of the coefficients of this kind of model is not clear, a common practice is to calculate the marginal effects associated with the probability of an RIA being formed or higher integration stages being established. They are given by:

$$\frac{\partial \Pr(Y_i = M)}{\partial X_{ki}} = -\beta_j \left(\frac{\exp(Z_i - \delta_k)}{(1 + \exp(Z_i - \delta_k))^2} - \frac{\exp(Z_i - \delta_{k-1})}{(1 + \exp(Z_i - \delta_{k-1}))^2} \right) \quad (6)$$

The interpretation of coefficients of ordered logit models differs from other models. The direction of switch is denoted by coefficient sign but the magnitude is difficult to interpret. For our analysis here, the positive coefficient indicates that there would be increase in the probability that countries will be observed in the higher integration category. However, the negative coefficients increase the probability that a pair of countries will be observed in lower integration category.

5 Data, Hypothesis and Variables

5.1 The Data

The model is first estimated with the data of 185 countries from 1990 to 2004. The selection of the countries was based on the available data. The dataset contains all the forms of in force trade arrangements; hence integration which take the form of Preferential Trading Arrangement (PTA), Free Trade Area (FTA), Customs Union (CU), Common Market (CM) or Monetary Union (MU).⁹ Information on trading agreements has been assembled from WTO RTA database and McGill Preferential Trade Agreements Database.¹⁰ This database is an extensive one and detailed. There are 175 agreements in force between 1990 and 2004. We kept the fact in our analysis the agreements concluded prior to the year 1990 also. For example, our analysis starts in the year 1990 but there are certain dyads which have entered into the agreements prior to 1990 such as there was already a custom union of EU (12) countries. So the agreements are coded accordingly.

5.1.1 Events Data

The cooperation (net cooperation) variable used throughout this study is comprised of conflict/cooperation data from King and Lowe's (2003) dataset¹¹ of Integrated Data for Events Analysis (IDEA). It is an extension and refinement of the WEIS dataset. The events are machine coded international events data set developed by Virtual Research Associates Inc. The VRA reader uses the lead sentences from Reuters news reports to categorize events from 1990 to 2004 into one of 157 possible event type codes. The IDEA codes can be mapped onto Goldstein's scale of conflict-cooperation, in which negative values represent conflictual acts whereas positive values indicate cooperation. The dataset contains 554,108 international bilateral events for the period 1990-2004 that can be mapped onto Goldstein's conflict-cooperation scale.

⁹ Based on WTO, PTA signifies the preferential treatment with other countries including a small number of sectors and goods; FTA represents a large number of goods to trade without tariff barriers. CU is defined as an agreement among the parties having a common external tariff. CM is stated as free movement of capital, goods and labor among the concluding countries and MU is the agreement in which all the agreeing parties have a single currency.

¹⁰ The reason for choosing the database in addition to WTO is that WTO RTA database contains the agreements which are notified to WTO however, there exist numerous agreements which are not notified to WTO.

¹¹ See <http://gking.harvard.edu/events/>

Trade data are from the database assembled by Barbieri, Keshk and Pollins (2008)¹² who use the information mostly from IMF direction of trade and statistics. Their data spans over the period of 1870-2006. Data on gross domestic product and gross domestic product per capita has been taken from Penn World Table 6.2 (Heston, Summers, and Aten, 2006). Real GDP is measured in billions of 2000 dollars and real GDP per capita in 2000 dollars.

Scores for regime type is consulted from Polity IV data set¹³ where polity $_{it}$ is the net polity score (democracy - autocracy) for country i in time t . The score ranges from 10 for pure democracies to -10 for pure autocracies. UN general assembly voting data is obtained from Erik Voeten dataverse by Erik Voeten and Adis Merdzanovic (2009). They assembled the data for the years 1946-2008. Common defense alliance data is obtained from correlates of war dataset by Gibler and Sarkees (2004). The data set contains data since 1816-2000. Although our dataset for this study goes until 2004, we coded the most recently available value for each dyad for the years 2001-2004. Distance, and common language ethno data are taken from French Research Center in International Economics¹⁴.

5.2 Hypothesis and variables

According to underlying theory described above and in the context of the intensity of integration agreements, our first hypothesis is that the greater interstate cooperation among dyad contributes a major factor in determining higher integration agreement. The variable (Cooperation) is net cooperation summing the Goldstein scores over all events within a year between the countries in a dyad marked as i and j in year t . it is measured as:

$Cooperation_{ijt} = \sum_{year\ t\ events} (cooperation_{ij} + conflict_{ij})$ ¹⁵. The Goldstein scores for cooperative events are positive and scores for conflictive events are negative. So a positive value of this cooperation variable will indicate that there is net cooperation among the dyad and the negative value represents net conflict. We coded 0 for this variable where no event is reported between the dyad.

¹² See <http://www.correlatesofwar.org/>

¹³ See <http://www.systemicpeace.org/polity/polity4.htm>

¹⁴ See <http://www.cepii.fr/anglaisgraph/bdd/distances.htm>

¹⁵ See Reuveny and Kang (1998)

Second hypothesis is that the greater the trade salience among the dyad, the greater is the probability that they will form deeper integration. (Trade Saliency) is the geometric mean of State i and State j's bilateral trade dependence. It is measured as:

$$Trade\ Saliency_{ijt} = \sqrt{\left(\frac{Imports_{ij} + Exports_{ij}}{GDP_i}\right)} * \sqrt{\left(\frac{Imports_{ji} + Exports_{ji}}{GDP_j}\right)}$$

Third hypothesis is that greater the size of the dyad¹⁶, the greater will be the probability that dyad will enter into higher level of integration agreement. DYAD SIZE is the log of addition of the GDPs of countries i and j in the dyad.

Our fourth hypothesis is that greater the similarity among the dyad according to their relative country size, the greater will be the plausibility that pair will form strong integration. For that matter we use the index¹⁷ to find the similarity among the dyad. The variable is Dyad similarity.

The fifth hypothesis concerns that more the absolute difference in relative factor endowments¹⁸ between the two integrating partners, the more will be the probability that the dyad will conclude loose form of integration. This hypothesis is contrasting to traditional argument that comparative advantages will be exploited further if the two countries in the pair have different factor endowments. Fact. Endowm. Diff is the absolute difference of the logs of income per capita.

Sixth hypothesis is that higher the democracy, higher the chances that dyad will enter into deeper form of integration. The variable (democracy) contains the lower democracy score in a dyad which is the measure of joint democracy.

Seventh hypothesis constitutes that greater the UN voting correlation among the dyad, the greater the probability that dyad will enter into higher integration level. The variable (UN vote

¹⁶ $Dyad\ Size = \log(GDP_{it} + GDP_{jt})$.

¹⁷ $Dyad\ Similarity = \log\left[1 - \left(\frac{GDP_{it}}{GDP_{it} + GDP_{jt}}\right)^2 - \left(\frac{GDP_{jt}}{GDP_{it} + GDP_{jt}}\right)^2\right]$.

¹⁸ $FED = \left| \log\left(\frac{GDP_{it}}{capita_{it}}\right) - \log\left(\frac{GDP_{jt}}{capita_{jt}}\right) \right|$. We calculated these variables motivated by the work of Helpman (1987).

similarity) is calculated using the index¹⁹ which calculates the similarity of UN voting patterns among the countries in dyad.

Eighth hypothesis is that the common defense alliance among the pair is the motivating factor for the pair to form deep integration agreement. The variable (Alliance) indicates whether the countries in the dyad have any alliance in the particular year.

Ninth hypothesis is that greater the distance between the dyad, the lesser the probability that countries will enter into higher levels of agreements. Log (Distance) represents the log of great circle distance between the countries' most important cities.

Tenth hypothesis is that the common language and ethno is the contributing factor of forming deeper form of arrangements. (Language Ethno) is a dummy variable and contains the value 1 if the population in the dyad speaks the same language and share same ethno. As our dependant variable is a categorical one, we use ordered logit model. Our dependent variable takes on 6 values (0-5)²⁰ which represent five different possible levels of integration between dyad.

The unit of analysis is the directed dyad because our source and destination countries are different as cooperation sent by one country to another is different if we reverse the dyad. i.e. $Cooperation_{ij} \neq Cooperation_{ji}$ ²¹.

To minimize endogeneity concerns, each variable is lagged one year which change over time. The equation to be estimated takes the following form:

$$\begin{aligned}
 EIA_{ijt} = & \beta_0 + \beta_1 Dyadic\ Cooperation_{ijt-1} + \beta_2 Dyad\ Similarity_{ijt-1} + \beta_3 Dyad\ Size_{ijt-1} \\
 & + \beta_4 Fact\ Endowm\ Diff_{ijt-1} + \beta_5 Trade\ Salience_{ijt-1} + \beta_6 Democracy_{ijt-1} \\
 & + \beta_7 UN\ Vote\ Similarity_{ijt-1} + \beta_8 Alliance_{ijt-1} \\
 & + \beta_9 Distance_{ij} + \beta_{10} Language\ Ethno_{ij} + \varepsilon_{ijt}
 \end{aligned}$$

¹⁹ See Signorino and Ritter (1999).

²⁰ The value '0' represents that no agreement is concluded among dyad.

²¹ Contrary to undirected dyads where $ij = ji$

6 Results and Discussion

6.1 Descriptive Results

Table 1 provides the mean of each variable in the data set for those country pairs that have specific type of integration agreements and for those pairs that do not. The means provide preliminary support for the behavior of variables.

Table 1 – Variable Means according to the type of agreements

Variables	No IA	PTA	FTA	CU	SM	MU
Cooperation	1.7236	1.3495	2.6249	0.5300	4.3947	7.2031
Democracy	-1.3644	-0.1985	1.1565	-0.4740	9.5039	9.7792
Trade Salience	0.0005	0.0015	0.0053	0.0023	0.0190	0.0195
Factor endowment difference	0.5847	0.3390	0.3938	0.3098	0.1366	0.1428
Dyad Size	2.0419	2.0895	2.2579	1.1752	2.8277	2.8703
Dyad Similarity	-0.9699	-0.8002	-0.7415	-0.6034	-0.6211	-0.6591
UN vote similarity	0.6729	0.8498	0.7602	0.9228	0.8962	0.9274
Alliance	0.0346	0.5238	0.2797	0.9153	0.5381	0.4363
Language	0.1281	0.3781	0.1981	0.5885	0.0909	0.0675
LnDistance	8.8479	7.6764	7.5162	6.9439	7.0400	7.1642

As its clear from figure 1 that the dyads which enter into some higher category, are the ones who are mutually more cooperative to each other in general. Figure 2 depicts the fact that over the years, the countries being more cooperative to partners, experience higher level of integration with them.

Figure 1

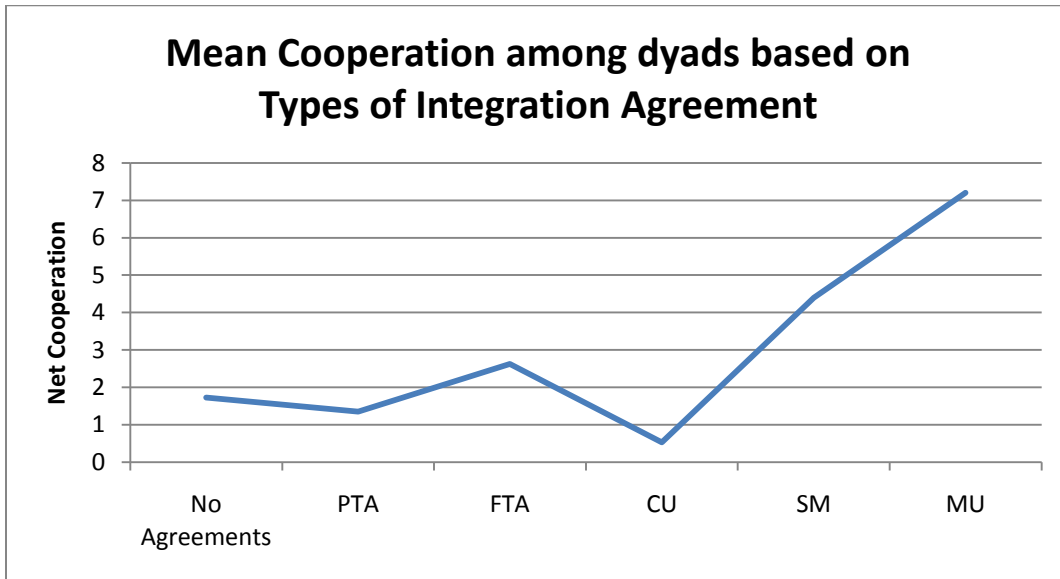
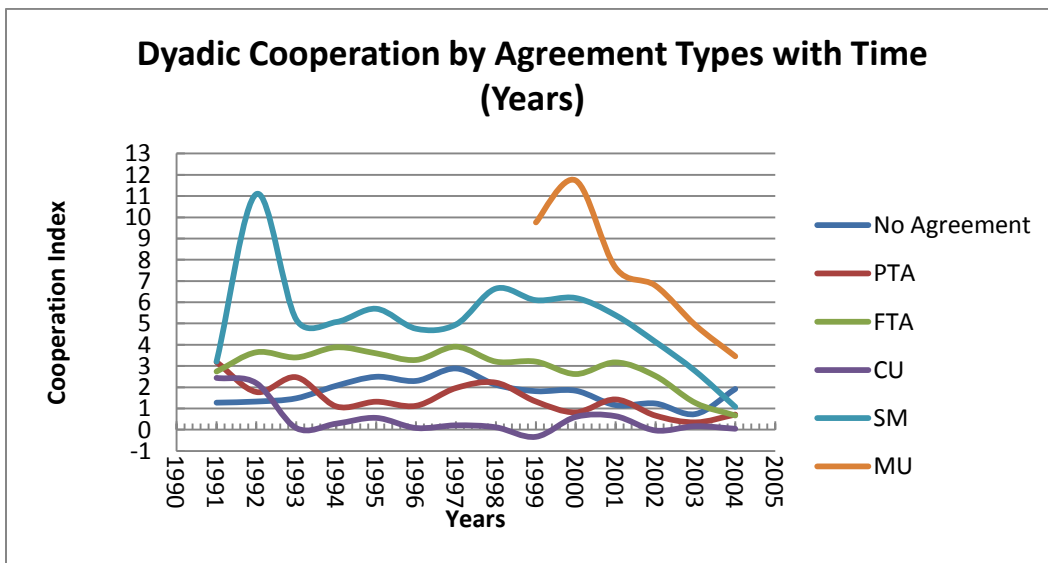


Figure 1 provides the mean cooperation among the pairs who have joined certain agreement.

Figure 2



6.2 Estimation Results

Firstly the ordered logit model is estimated with economic and geographical variables. The results are presented in Table 2. In Model (1), the cooperation variable is tested with economic as well as geographical variables. In Model (2), economic, political, strategic and geographical variables are analyzed with dyadic cooperation. Model (3) is the addition of trade salience variable to the previous one. Finally Model (5) estimates all the variables by dropping all the dyads which have never entered into negotiation agreement.

The positive coefficient indicates that there is higher tendency for the dependant variable (integration agreement level in our case) to move in the higher category from the lower one. Although there is no consensus on the interpretation of the magnitude of the coefficients estimated in categorical choice models.

In model (1) the cooperation variable is significant at 1% level with traditional economic and geographical variables. This indicates that the higher the dyadic cooperation between dyad, the higher the probability of attaining higher level of arrangement. The dyad size and dyad similarity have positive sign. The factor endowment difference has negative coefficient reinforcing our hypothesis. This shows the fact that as the difference in factor endowment difference increases; the countries are more prone to conclude loose form of integration. This result contrasts to the prediction of Baier and Bergstrand (2004) which states that greater the difference in relative factor endowments leads the nations to form trade agreements. One possible reason could be that they estimated the occurrence and non occurrence of trade agreements without keeping into account the depth of integration agreements. Our results say that lower the difference in factor endowments between pair of countries, the higher the probability of forming higher level of integration. The distance and language variable show the expected sign.

In model (2), political and strategic variables show positive signs and are significant at 1% level. Common defense alliance between the pairs plays a positive role in forming an integration arrangement. Similarly, the UN voting affinity is one of the major determining factors in concluding trade agreement.

One interesting fact revealed that when we introduce the variable of trade salience (Model 3), all the variables are significant with their expected signs but the cooperation variable changes its sign²². In model (4), we added an interaction variable (Trade Salience * Cooperation) to consider the ambiguous sign of our important variable “cooperation”. The estimated coefficient of the interaction variable shows negative sign indicating that probability of reaching a higher level of integration decreases for partners who are more trade dependant even in the presence of net bilateral cooperation to each other. The cooperation variable show significantly positive sign. This fact can be interpreted as that high trade salience reduces the importance of interstate cooperation in determining the higher integration agreement; however, trade salience itself increases the probability of achieving stronger form of integration between the pair. In the other models we have seen that cooperation has been throughout positive, indicating that cooperation is major determinant in forming higher integration levels. This raises another point that stronger integration agreements ascertain nontraditional measures other than trade flows, the view discussed by (Fernandez and Portes 1998) and this can be achieved when interstate cooperation will be higher.

In model (5), those dyads are tested which show some behavior i.e. they entered into some higher form of integration from lower level. The economic variables show the same expected sign. Cooperation variable is still positive and significant at 10 %. Interaction variable is negative and significant. Democracy and language variables are insignificant.

In order to evaluate the probability that dependent variable will attain a certain value, we use thresholds (cut-off terms). From eq 2, the threshold parameters for the model (4) are:

$$Y_i = 0 \text{ if } \xi_i \leq -7.505; Y_i = 1 \text{ if } -7.505 < \xi_i \leq -6.951; Y_i = 2 \text{ if } -6.951 < \xi_i \leq -5.515$$

$$Y_i = 3 \text{ if } -5.515 < \xi_i \leq -4.366; Y_i = 4 \text{ if } -4.366 < \xi_i \leq -2.435; Y_i = 5 \text{ if } \xi_i > -2.435$$

Taking the example of Spain and France in the year 1997,

$\Pr(Y_i = 0) = 0.0214$; $\Pr(Y_i = 1) = 0.015$; $\Pr(Y_i = 2) = 0.101$; $\Pr(Y_i = 3) = 0.197$;
 $\Pr(Y_i = 4) = 0.441$; $\Pr(Y_i = 5) = 0.222$). Hence for France and Spain, the most likely outcome is that they will form single market in the year 1997. The dyad had not entered into monetary union at that time.

²² One possible argument can be that they are correlated to each other. We calculated the correlation matrix of all the variables and found specifically the correlation between trade salience and cooperation to be 0.1831 which indicated that they are not also highly correlated.

Table 2 - Ordered Logit results for the probability of Integration Agreements formation or enhancement

The dependant variable is the degree of integration..

VARIABLES	(1)	(2)	(3)	(4)	(5)
<u>Economic Variable</u>					
Dyad Similarity	0.289*** (0.0148)	0.781*** (0.0265)	0.698*** (0.0270)	0.687*** (0.0269)	0.218*** (0.0287)
Dyad Size	0.238*** (0.0128)	0.680*** (0.0186)	0.550*** (0.0202)	0.530*** (0.0204)	-0.2034*** (0.0224)
Factor Endow. Dif	-1.269*** (0.0228)	-0.722*** (0.0291)	-0.699*** (0.0285)	-0.700*** (0.0285)	-0.367*** (0.0343)
Trade Salience			31.70*** (2.350)	36.56*** (2.644)	63.291*** (2.91)
<u>Political and Strategic Variable</u>					
Cooperation	0.00652*** (0.0005)	0.00171*** (0.0005)	-0.0017 (0.0007)	0.00141* (0.000744)	0.0025* (0.0009)
Democracy		0.0196*** (0.0014)	0.0167*** (0.0014)	0.0166*** (0.0014)	-0.0034 (0.0015)
UN vote similarity		1.372*** (0.0434)	1.399*** (0.0437)	1.367*** (0.0433)	1.058*** (0.0559)
Alliance		1.857*** (0.0235)	1.859*** (0.0235)	1.862*** (0.0234)	1.051*** (0.022)
Trade Salience * Coop				-0.151*** (0.0193)	-0.216*** (0.0224)
<u>Geographical and Social Variables</u>					
Distance	-1.785*** (0.0082)	-1.522*** (0.0097)	-1.450*** (0.0102)	-1.443*** (0.0103)	-0.201*** (0.0151)
Language	0.966*** (0.0163)	0.362*** (0.0227)	0.323*** (0.0226)	0.326*** (0.0226)	-0.187 (0.0216)
cut1	-12.23*** (0.0703)	-7.922*** (0.0955)	-7.515*** (0.0969)	-7.505*** (0.0968)	-1.268*** (0.127)
cut2	-11.72*** (0.0698)	-7.375*** (0.0957)	-6.961*** (0.0972)	-6.951*** (0.0971)	-0.535*** (0.1273)
cut3	-10.68*** (0.0696)	-5.984*** (0.0940)	-5.528*** (0.0957)	-5.515*** (0.0957)	-0.955*** (0.126)
cut4	-9.395*** (0.0683)	-4.907*** (0.0923)	-4.388*** (0.0948)	-4.366*** (0.0947)	2.04*** (0.125)
Cut5	-7.702*** (0.0750)	-3.149*** (0.0980)	-2.472*** (0.106)	-2.435*** (0.106)	3.913*** (0.135)
Pseudo R ²	0.29	0.33	0.34	0.34	0.0812
Log likelihood	-107719.55	-71153.16	-70692	-70655.686	-51013.205
Exp (log likelihood / No. Of Observations)	0.7833	0.7838	0.7847	0.7848	0.2626
Observations	441,084	292,182	291,585	291,585	38161

*** Significatif at 1% ; ** Significatif at 5% ; * Significatif at 10%. Standard errors are in brackets.

As discussed, the interpretation of the coefficients in an ordered logit does not inform of the magnitude of switch since we can only state that positive coefficients lead to the higher level of integration agreement whereas the negative ones indicate that the countries will observe lower level of integration. A preferable interpretation is in terms of odd ratios. The exponentiated coefficients in the logit model, presented in Table 3, can be interpreted as odds ratios for a one unit change in the corresponding independent variables. To take an example, we take the coefficient of dyad size from the model (1). The value of 1.27 means the odds of being in the higher integration level increase by 1.27 if dyad size increases by 1. In the percentages, it can be interpreted as that $\exp(0.019)$ obtained from the *democracy* variable in model (2) signifies that odds increase by 1.98%²³ if the variable increases by 1. Therefore the odds of being in the free trade agreement versus preferential trade agreement are 1.98% higher for a one-unit increase in democracy. For cooperation variable, the odds of being in the higher category are 0.0014% in model (3).

²³ $[\exp(0.019)-1] * 100$

Table 3 - Odds ratio for the Ordered Logit Results

The dependant variable is the degree of integration..

VARIABLES	(1)	(2)	(3)	(4)	(5)
<u>Economic Variables</u>					
Dyad Similiarity	1.334*** (-0.0197)	2.183*** (0.0578)	2.0097*** (0.0541)	1.988*** (0.0535)	1.244*** (0.0358)
Dyad Size	1.27*** (0.0162)	1.973*** (0.0366)	1.733*** (0.0349)	1.698*** (0.0347)	0.816*** (0.0182)
Factor Endow. Diff	0.281*** (0.0064)	0.485*** (0.0141)	0.497*** (0.0141)	0.496*** (0.0141)	0.692*** (0.0237)
Trade Salience			5.86 E+13*** (1.38 E+14)	7.57 E+15*** (2.00 E+16)	3.07E+27*** (8.94 E+27)
<u>Political and Strategic Variable</u>					
Cooperation	1.006*** (0.0005)	1.0017*** (0.0005)	0.998 (0.0007)	1.0014* (0.0007)	1.0026*** (0.0009)
Democracy		1.0198*** (0.0014)	1.0168*** (0.0014)	1.0167*** (0.0014)	0.996 (0.0015)
UN vote similarity		3.942*** (0.171)	4.051*** (0.177)	3.923*** (0.169)	2.882*** (0.1612)
Alliance		6.404*** (0.151)	6.417*** (0.151)	6.438*** (0.151)	2.8589*** (0.0656)
Trade Salience * Coop				0.861*** (0.0166)	0.805*** (0.018)
<u>Geographical and Social Variables</u>					
Distance	0.1678*** (0.0014)	0.218*** (0.0021)	0.234*** (0.0024)	0.236*** (0.0024)	0.817*** (0.0123)
Language	2.627*** (0.0428)	1.436*** (0.0326)	1.381*** (0.0312)	1.384*** (0.0312)	0.829 (0.017)
cut1	-12.23*** (0.0703)	-7.922*** (0.0955)	-7.515*** (0.0969)	-7.505*** (0.0968)	-1.2687*** (0.127)
cut2	-11.72*** (0.0698)	-7.375*** (0.0957)	-6.961*** (0.0972)	-6.951*** (0.0971)	-0.5352*** (0.1273)
cut3	-10.68*** (0.0696)	-5.984*** (0.0940)	-5.528*** (0.0957)	-5.515*** (0.0957)	0.955*** (0.126)
cut4	-9.395*** (0.0683)	-4.907*** (0.0923)	-4.388*** (0.0948)	-4.366*** (0.0947)	2.041*** (0.125)
cut5	-7.702*** (0.0750)	-3.149*** (0.0980)	-2.472*** (0.106)	-2.435*** (0.106)	3.9134*** (0.135)
Observations	441,084	292,182	291,585	291,585	381,61

*** Significatif à 1% ; ** Significatif à 5% ; * Significatif à 10%

Table 4 – Probability Marginal Effects

Variables	dy/dx	S.E.	(Z-Statistics)	(P-Value)
<u>Probability (PTA)</u>				
Cooperation	5.69e-06	.00001	0.99	0.324
Dyad Similarity	.0003617	.00036	0.99	0.321
Dyad Size	.0001004	.0001	0.98	0.325
Factor Endowment Diff	-.0003515	.00036	-0.99	0.323
Log Distance	-.0003768	.00038	-0.99	0.320
Language	-.000177	.00011	-1.68	0.094
Democracy	4.23e-06	.00000	0.97	0.333
UN vote similarity	.0008295	.00084	0.99	0.322
Alliance	-.0106728	.00095	-11.21	0.000
<u>Probability (FTA)</u>				
Cooperation	.0007833	.00009	9.16	0.000
Dyad Similarity	.0498109	.00339	14.71	0.000
Dyad Size	.0138243	.00022	6.16	0.000
Factor Endowment Diff	-.048407	.00425	-11.38	0.000
Log Distance	-.051899	.00172	-30.19	0.000
Language	-.009387	.00277	-3.39	0.001
Democracy	.0005822	.00018	3.19	0.000
UN vote similarity	.1142457	.00627	18.22	0.000
Alliance	.1110429	.00246	45.18	0.000
<u>Probability (CU)</u>				
Cooperation	.0004465	.00005	9.15	0.000
Dyad Similarity	.0283978	.00196	14.49	0.000
Dyad Size	.0078814	.00129	6.10	0.000
Factor Endowment Diff	-.0275976	.00244	-11.33	0.000
Log Distance	-.0295887	.00101	-29.30	0.000
Language	-.0052719	.00153	-3.44	0.001
Democracy	.0003319	.0001	3.18	0.001
UN vote similarity	.0651328	.00364	17.91	0.000
Alliance	.0767415	.00204	37.53	0.000
<u>Probability (SM)</u>				
Cooperation	.0002858	.00003	9.10	0.000
Dyad Similarity	.0181783	.00127	14.32	0.000
Dyad Size	.0050451	.00083	6.09	0.000
Factor Endowment Diff	-.017666	.00156	-11.29	0.000
Log Distance	-.018940	.00066	-28.50	0.000
Language	-.003359	.00097	-3.45	0.001
Democracy	.0002125	.00007	3.18	0.001
UN vote similarity	.0416934	.00239	17.45	0.000
Alliance	.0530296	.00156	33.89	0.000
<u>Probability (MU)</u>				
Cooperation	.0000765	.00001	8.73	0.000
Dyad Similarity	.0048669	.00037	13.01	0.000
Dyad Size	.0013507	.00022	6.02	0.000
Factor Endowment Diff	-.0047298	.00045	-10.57	0.000

Log Distance	-.005071	.00025	-20.48	0.000
Language	.0008979	.00026	-3.45	0.001
Democracy	.0000569	.00002	3.17	0.002
UN vote similarity	.0111626	.00073	15.22	0.000
Alliance	.014709	.00066	22.14	0.000

*** Significatif à 1% ; ** Significatif à 5% ; * Significatif à 10%

6.1 Marginal Effects

In order for better interpretation of the coefficients marginal effects is implemented for the data. Through this we can estimate the partial effects on the response probabilities. To compare the effect of the RHS variables across different levels of integration, marginal effects are obtained. They are presented in Table 4. It shows probabilities for each level of integration. For every unit increase of dyadic cooperation, the probability of forming custom union (Pr 3) from free trade agreement (Pr 2) increases by 0.00044 units. Factor endowment difference marginal effect from custom union to single market is -.0047298. For every one unit the endowment differences increases, the probability of integration arrangement of type single market decreases by -.0047298 units. In other words, to remain in custom union, increases by 0.0047298 units. This is consistent for other levels of integration also. The result confirms the integration theory which predicts that the costs of integration are lower when countries have same factor endowments and when intra-industry trade level is higher.

6.2 Robustness

The ordered logit model is based on the assumption of parallel slopes. For that, Brant test of parallel regression is used. The Brant (1990) test assesses whether or not the coefficients are the same for each category of dependent variable. The significant test statistics provide evidence that this assumption has been violated. To counter this, generalized ordered logit model is estimated. The cooperation is significant at each level of integration except the formation of preferential trading agreement (the lower type). The economic variables indicate the expected signs and are significant at higher levels (CU, SM and MU). The distance is showing the expected sign for lower level of integration (PTA and FTA).

Secondly, the European Union countries were excluded to check whether it affects the results. The results show no change. Tabel (5) presents the results.

Table 5 – Robustness test (Excluding EU Countries)

The dependant variable is the degree of integration..

VARIABLES	(1)	(2)
<u>Economic Variable</u>		
Dyad Similarity	0.687*** (0.0269)	0.218*** (0.0288)
Dyad Size	0.530*** (0.0204)	-0.203*** (0.0224)
Factor Endow. Dif	-0.700*** (0.0285)	-0.367*** (0.0344)
Trade Salience	36.56*** (2.644)	63.29*** (2.911)
<u>Political and Strategic Variable</u>		
Cooperation	0.00141* (0.000744)	0.00259*** (0.000908)
Democracy	0.0166*** (0.00140)	-0.00343 (0.00152)
UN vote similarity	1.367*** (0.0433)	1.059*** (0.0559)
Alliance	1.862*** (0.0234)	1.050*** (0.0229)
Trade Salience * Coop	-0.151*** (0.0193)	-0.216*** (0.0224)
<u>Geographical and Social Variables</u>		
Distance	-1.443*** (0.0103)	-0.201*** (0.0152)
Language	0.326*** (0.0226)	-0.188 (0.0216)
Cut1	-7.505*** (0.0968)	-1.269*** (0.127)
Cut2	-6.951*** (0.0971)	-0.535*** (0.127)
Cut3	-5.515*** (0.0957)	0.955*** (0.127)
Cut4	-4.366*** (0.0947)	2.040*** (0.125)
Cut5	-2.435*** (0.106)	3.913*** (0.135)
Observations	291,585	38,161
*** Significatif à 1% ; ** Significatif à 5% ; * Significatif à 10%		

Concluding Remarks

In this study, the discrete choice modeling is used to study the determinants of regional trade agreements. An ordered logit model with economic, geographic and political variables. While there is vast literature available determining the conclusion of trade agreements, but the role of an important factor of international dyadic cooperation is missing. There are important conclusions which can be drawn from results.

The results show that probability of attaining the higher level of integration increases with dyad size, dyad similarity, democracy and decreases with factor endowment differences and geographical distance. Strategic variables such as UN voting affinity and defense alliance are important in determining the integration arrangements. It is verified that although geographic and economic variables are important, the role of interstate cooperation in determining the integration agreements cannot be undermined. The dyadic net cooperation is significant in determining the higher levels of economic integration. An important thing to note is that when trade salience variable is introduced, the cooperation variable becomes insignificant though trade salience remains a strong predictor of the conclusion of higher level of integration. The theoretical justification can be given as when there is high trade salience among the dyad; the cooperation has not much important role.

An important thing is to be noted here that the ambiguous behavior of cooperation variable may be due to the fact that it constitutes different type of interstate cooperation such as political, economic and military. Disentangling this cooperation variable into these sub categories will provide further understanding which is the next step and the extension of this study.

Appendix A: Events and corresponding weights in Goldstein scale

<i>Definition</i>	<i>Goldstein</i>	<i>Definition</i>	<i>Goldstein</i>
Extend military aid	8.3	Accuse	-2.8
Rally support	7.6	Warn	-3
Extend humanitarian aid	7.6	Denounce or denigrate	-3.4
Extend economic aid	7.4	Halt negotiations	-3.8
Make substantial agreement	6.5	Break law	-4
Improve relations	5.4	Disclose information	-4
Promise humanitarian support	5.2	Political flight	-4
Promise military support	5.2	Defy norms	-4
Promise economic support	5.2	Veto	-4
Promise material support	5.2	Censor media	-4
Collaborate	4.8	Impose curfew	-4
Agree	4.8	Refuse to allow	-4
Promise	4.7	Reject proposal	-4
Promise policy or nonmaterial support	4.5	Reject	-4
Forgive	3.5	Political arrest and detention	-4.4
Endorse or approve	3.5	Criminal arrest and detention	-4.4
Ask for material aid	3.4	Arrest and detention	-4.4
Solicit support	3.4	Nonspecific threats	-4.4
Empathize	3.4	Administrative sanctions	-4.5
Praise	3.4	Strike	-4.5
Agree or accept	3	Strikes and boycotts	-4.5
Ease sanctions	2.9	Sanction	-4.5
Assure	2.8	Demand	-4.9
Host meeting	2.8	Expel	-5
Extend invitation	2.5	Protest defacement and art	-5.2
Relax curfew	2.2	Protest procession	-5.2
Demobilize armed forces	2.2	Protest obstruction	-5.2
Relax administrative sanction	2.2	Protest demonstrations	-5.2
Relax censorship	2.2	Reduce or stop aid	-5.6
Observe truce	2.2	Sanctions threat	-5.8
Evacuate victims	2.2	Nonmilitary force threats	-6.4
Provide shelter	2.2	Threaten	-6.4
Grant	2.2	Guerrilla seizure	-6.8
Apologize	2.2	Police seizure	-6.8
Acknowledge responsibility	2	Seize	-6.8
Release or return	1.9	Control crowds	-6.9
Travel to meet	1.9	Protest altruism	-6.9
Ask for humanitarian aid	1.6	Protest	-6.9

Ask for military aid	1.6	Give ultimatum	-6.9
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<i>Definition</i>	<i>Goldstein</i>	<i>Definition</i>	<i>Goldstein</i>
Ask for economic aid	1.6	Military clash	-7
Request	1.6	Break relations	-7
Offer peace proposal	1.5	Threaten military war	-7
Peace proposal	1.5	Threaten military occupation	-7
Consult	1.5	Threaten military blockade	-7
Call for action	1.2	Threaten military attack	-7
Yield	1.1	Military force threat	-7
Discussions	1	Military border violation	-7.6
Propose	0.8	Military border fortification	-7.6
Yield position	0.6	Military mobilization	-7.6
Yield to order	0.6	Military troops display	-7.6
Ask for information	0.1	Military naval display	-7.6
Optimistic comment	0.1	Military alert	-7.6
Sports contest	0	Military demonstration	-7.6
A and E performance	0	Riot or political turmoil	-8.3
Accident	0	Bombings	-8.7
Natural disaster	0	Military seizure	-9.2
Human death	0	Abduction	-9.2
Human illness	0	Seize possession	-9.2
Animal death	0	Assassination	-9.6
Economic status	0	Guerrilla assault	-9.6
Adjust	0	Paramilitary assault	-9.6
Vote	0	Torture	-9.6
Adjudicate	0	Sexual assault	-9.6
Government default on payments	0	Bodily punishment	-9.6
Private transactions	0	Shooting	-9.6
Government transactions	0	Beatings	-9.6
Transactions	0	Physical assault	-9.6
Economic activity	0	Force	-9.6
Ask for protection	-0.1	Biological weapons use	-10
Pessimistic comment	-0.1	Assault	-10
Decline comment	-0.1	Military occupation	-10
Comment	-0.1	Coups and mutinies	-10
Deny responsibility	-0.9	Military raid	-10
Deny	-1	Military engagements	-10
Grant asylum	-1.1		
Reduce routine activity	-2.2		
Criticize or blame	-2.2		
Formally complain	-2.4		
Informally complain	-2.4		
Complain	-2.4		

Appendix B: 185 Country Sample

Albania	Costa Rica	Ireland	Mozambique	Slovenia
Algeria	Croatia	Israel	Namibia	Solomon Islands
Angola	Cuba	Italy	Nauru	Somalia
Antigua and Barbuda	Cyprus	Ivory Coast	Nepal	South Africa
Argentina	Czech Republic	Jamaica	Netherlands	South Korea
Armenia	Denmark	Japan	New Zealand	Spain
Australia	Dominica	Jordan	Nicaragua	Sri Lanka
Austria	Dominican Republic	Kazakhstan	Niger	Sudan
Azerbaijan	Ecuador	Kenya	Nigeria	Suriname
Bahamas	Egypt	Kiribati	North Korea	Swaziland
Bahrain	El Salvador	Kuwait	Norway	Sweden
Bangladesh	Equatorial Guinea	Kyrgyzstan	Oman	Switzerland
Barbados	Eritrea	Laos	Pakistan	Syria
Belarus	Estonia	Latvia	Palau	Taiwan
Belgium	Ethiopia	Lebanon	Panama	Tajikistan
Belize	Fiji	Lesotho	Papua New Guinea	Tanzania
Benin	Finland	Liberia	Paraguay	Thailand
Bhutan	France	Libya	Peru	Togo
Bolivia	Gabon	Liechtenstein	Philippines	Tonga
Bosnia and Herzegovina	Gambia	Lithuania	Poland	Trinidad and Tobago
Botswana	Georgia	Luxembourg	Portugal	Tunisia
Brazil	Germany	Macedonia	Qatar	Turkey
Brunei Darussalam	Ghana	Madagascar	Romania	Turkmenistan
Bulgaria	Greece	Malawi	Russia	Tuvalu
Burkina Faso	Grenada	Malaysia	Rwanda	Uganda
Burundi	Guatemala	Maldives	Saint Kitts and Nevis	Ukraine
Cambodia	Guinea	Mali	Saint Lucia	United Arab Emirates
Cameroon	Guinea-Bissau	Malta	Sat Vincent and Grenadines	United Kingdom
Canada	Guyana	Mauritania	Samoa	United States
Cape Verde	Haiti	Mauritius	San Marino	Uruguay
Central African Republic	Honduras	Mexico	Sao tome and principe	Uzbekistan
Chad	Hungary	Micronesia	Saudi Arabia	Vanuatu
Chile	Iceland	Moldova	Senegal	Venezuela
China	India	Monaco	Seychelles	Vietnam
Colombia	Indonesia	Mongolia	Sierra Leone	Yemen
Comoros	Iran	Montenegro	Singapore	Zambia
Congo	Iraq	Morocco	Slovakia	Zimbabwe

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