# Preference Similarity and Interstate Commercial Cooperation

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*In this study, I evaluate a hypothesis regarding whether a dyadic preference similarity guides foreign policy behavior. The existing literature in international relations highlights the importance of domestic institutions and international factors, yet the mutual preference similarity has not been fully explored in interstate economic cooperation research. Quantitative studies on commercial cooperation have largely ignored the impact of mutual preference similarity on international economic foreign policy. I revisit a claim that international economic cooperation can be explained mainly as the product of similar political and economic institutions. I argue that the similarity of mutual preference between dyads is likely to affect the probability of interstate economic cooperation. Omitting the variance of mutual preferences leads to an incomplete picture of commercial cooperation. I show that an index of states' dyadic preference similarity based on correlation between roll-call voting in the United Nations General Assembly accounts for much of the variance in economic cooperation propensity. If state preferences coincide over divergent issues, then their commercial ties become stronger. I conclude that the preference similarity of governments' foreign policy goals affects the willingness of states to form Free Trade Agreements (FTAs).*

*Keywords: Dyadic Preference Similarity, Interstate Commercial Cooperation, International Trade Agreements, Voting in the United Nations General Assembly*

## 1. INTRODUCTION

Since the early 1980s, many countries have concluded Preferential Trading Arrangements (PTAs). Almost every country in the world is a member of a PTA. Currently sixty percent of world trade occurs within such preferential trading blocs. Although a recent surge of PTAs has stimulated many debates, we lack a complete understanding as to what drives states to make a commitment to international trade agreements. This study seeks to improve our understanding of why countries rush to join international trade agreements by examining the impact of mutual preference similarity constraints.

The leading theories in international relations highlight the importance of domestic economic institution and political institution, while the mutual preference similarity factor has not yet been explored in extant research. Few quantitative studies on interstate commercial cooperation have investigated the impact of mutual state preferences on international economic foreign policy. It is unquestioned that the decision-making process of states is influenced by what they want to be achieved. If that is the case, omitting an analysis of states' preferences leads to an incomplete picture of dynamics of commercial cooperation. To fill this gap, I investigate whether interstate economic cooperation can be explained by the similarity of states' mutual preferences. I show that an index of states' dyadic preference similarity based on correlation between roll-call voting in the United Nations General Assembly accounts for much of the variance in cooperation propensity. To be more specific, the states' dyadic preference similarity accounts for the propensity to conclude international trade agreements.

## 2. LITERATURE REVIEW

Competing arguments have shown that states choose trade policies because of external factors (Mansfield 1998), domestic factors such as preferences of political leaders (Rogowski 1989), preferences of pressure groups (Grossman and Helpman 1995), political institutions (Gaubatz 1996, Verdier 1998, Remmer 1998, Mansfield, Milner, and Rosendorff 2001), and economic institutions (Souva 2004).

A growing body of recent literature argues that domestic institutional constraints affect trade policy. Change in political regimes may be "the institutional change that helps explain global free trade" (Milner 1999). Scholars have found a positive link between international trade and democracy (Gaubatz 1996, Verdier 1998, Remmer 1998). Barbieri and Schneider, however, draw a different conclusion about the link between democracy and trade (Barbieri and Schneider 1999). Penubarti and Ward (2000) maintain that previous studies rely on the misspecification of the trade model and fail to account for the spatial context of international trade flows. Therefore, debates over the monadic impact of regime type on the propensity of free trade policy are still incomplete (Reinhardt 2000). Some political scientists discuss the dyadic effect of democracy on trade cooperation (Simmons 2000). Mansfield, Milner, and Rosendorff (2001) show that "democratic dyads are more likely to be proponents of cooperation to lower trade barriers than are autocratic ones". On the other hand, Verdier (1998) argues that democracies tend to choose protection due to the political clash caused by trade. Mansfield and Bronson (1997) also argue that democratic dyads are not more likely to cooperate in terms of treaty counts and trade flows. Overall, empirical evidences have been presented about the independent effect of democracy on trade cooperation.

Another important question in the international relations literature concerns what factors lead to peaceful interactions. Studies suggest that democratic countries are less likely to go to war because democratic countries are status quo powers with similar interests and satisfactions (Lemke and Werner 1996; Lemke and Reed 1996). Gartzke (1998, 2000) further shows that states' preference similarity accounts for much of the lack of militarized conflicts between democracies. Studies demonstrate the importance of state preference in the likelihood of war behavior. These studies mainly show that similarity of interests matters in international interaction. The other implication is that countries with similar preferences or norms promote peaceful interactions. That is, they are more likely to form security alliances or conclude cooperative economic arrangements. For example, jointly satisfied states with shared preferences form security ties such as NATO or economic agreements such as EU.

Current analyses are not effective in resolving the puzzle of how preference similarity affects the way preferences are aggregated into interstate commercial cooperation. I show how the preference similarity provides insights for a country's decision to join PTAs. This preference explanation also provides a new framework for revealing what has been overlooked in efforts to explain the puzzling behavior of countries that rush to join PTAs. Commercial ties and flows do not need to be influenced by democratic norms and institutions if countries have mutually similar preferences or willingness to cooperate commercially. It is more preference similarity and shared interests than democracy per se that explain economic cooperation. In other words, democratic expansion does not necessarily drive an interstate economic cooperation. Rather, the similarity of state preferences guides how states behave in commercial relations. If states are mutually satisfied and have similar interests, it is not difficult to predict that they will be cooperative with each

other in political and economic issues. In other words, if state preferences converge over divergent issues, then they tend to increase commercial ties. States with similar preferences and shared interests are more likely to trade more freely with each other, because preference similarity lessens mutual political conflict and increases each other's economic ties (Reinhardt 2000). They will have fewer problems in adjusting their trade policies. In the same context, countries with conflicting preferences will have more tensions. Conflicts and tensions will negatively influence their economic interaction. Political tensions with dissimilar preferences lead to a decreased level of mutual commerce. Even in the shadow of serious political tension, economic ties can develop. However, such examples are rare. The member countries of the EU have more similar preferences and shared satisfactions over divergent issues than do the countries in Asia. If the U.S. and Jordan have similar preferences and are mutually satisfied, they would increase business exchanges even if they have different political institutions. The Free Trade Agreements between the U.S. and Central American countries or between the U.S. and Israel are other examples.

Having similar political and economic institutions is not the only factor which guides states' commercial behavior. Strategic willingness to conclude a trade agreement also becomes an important variable in this context. Simmons suggests that the presence of a democratic regime has no independent effect on the propensity to commit to openness (Simmons 2000). Moreover, Dai suggests, "domestic political institutions alone are not sufficient to predict a higher level of cooperation among democracies regardless of the preferences of the decision maker" (Dai 2002). Consequently, theories that incorporate both preferences and institutions are necessary, because "both are jointly determined" (Milner 1999). More recently, scholars have claimed that interplay between domestic institutions and preferences should be included within the literature regarding the recent change of external trade policy across countries (Milner 1999). A significant contributor to economic cooperation has been missed in previous studies. Accordingly, the purpose of this study is to provide a more convincing theoretical framework and empirical support incorporating preferences in order to explain why countries pursue interstate commercial cooperation by entering PTAs. I evaluate the hypothesis that the similarity of governments' foreign policy goals affects the willingness of states to form free trade agreements. This study shows that ignoring preferences in explaining economic cooperation is likely to lead us to incomplete conclusions (Gartzke 1998, 2000).

## 3. METHODOLOGY

The common techniques for analyzing statistical models with dichotomous dependent variables are logit and probit. However, logit and probit techniques require assumptions of independence among cases that are inappropriate in a time-series cross-section context. Given that the dependent variable of this study is comprised of the decision to join PTAs over time, there must be autocorrelations from year to year per dyad.[1] To account for this

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[1] It is notable that many of the existing PTAs are interrelated. "The countries of the European Union and Mexico belong to more than 10 agreements. Brazil, Colombia, Venezuela, Chile and some Central American countries belong to between 5 and 10 agreements. Most other WTO members belong to at least one agreement. The main exceptions to this pattern are Hong Kong, China, Japan, Macau and Mongolia" (Crawford and Laird 2000).

characteristic of the data, I rely on a generalized estimating equation (GEE) to analyze the data. Liang and Zeger formalized a Generalized Estimating Equations (GEEs) approach to deal with correlated data involving repeated observations over time. According to Zorn, the GEE technique is appropriate to use "when the standard assumption that observations in the data are conditionally independent is called into question." GEE analysis uses quasi-maximum likelihood estimation techniques to control the effect of time dependence on observations in the context of time-series cross-section data. The GEE method involves panel data with a binary or more complicated dependent variable.

I present this analysis with an indicator for each variable, ascribing the weak link principle. In a dyadic analysis, it is difficult to measure major concepts and variables. For example, joint democracy is a difficult concept to measure. Some studies have used a dummy variable, which takes on a value of 1 when both states' democracy scores are above some threshold. While others have chosen the lower of the two democracy scores as sufficiently reflecting the level of democracy needed for the dyad, I selected the "weak link" procedure of relying on the lower of the two democracy scores. Recently, it has become much more popular to use the separate variables such as high democracy and low democracy that identify the higher and lower of the two democracy scores in a dyad. This approach was first used by Dixon based on the weakest link assumption that suggests that the democracy level of the lower democracy state would drive the regime type relationship in any dyad. However, there are variations on the inclusion of variables based on the weakest link argument. Some studies include both high democracy and low democracy (Gartzke 2000, Oneal and Russett 1997), while others use low democracy alone (Beck, Katz, and Tucker 1998, Oneal and Russett 1999). Following Oneal and Russett's logic of the "weakest link in the chain," I identify the lower of the two democracy scores as the level of democracy in the dyad.

### 3.1. The Decision to Sign International Trade Agreements

I use the decision of a state to enter a PTA as the dependent variable from 1946 to 1996 with 150 countries. Commitment to a PTA can be seen as a costly signal by governments to convey their future willingness to eliminate trade barriers. Trade agreement commitment is one way for governments to secure their credibility if international markets doubt their willingness to maintain and enhance trade liberalization policies. In this vein, employing the conclusion of a PTA as a dependent variable is a reasonable way to measure the willingness of a country to cooperate with other countries in increasing commerce. I take preferential trade agreements, free trade agreements, customs unions, common markets, and monetary unions as a dependent variable. The dependent variable is coded to indicate when states form or join a PTA where we observe 1 if this occurs and 0 otherwise for dyad $i$ during year $t$. That is, it is the binary indicator of whether a dyad forms a PTA in a given year.

### 3.2. Affinity

We cannot measure the similarity of preference directly, but we can measure the "degree to which actors converge or diverge in their expressions of representative behavior" (Gartzke 2000). This is a proxy for the similarity of preferences. Gartzke and Jo's (2002) Affinity of Nations Index has been used in many studies to reflect similarity of states' foreign policy positions (Oneal and Russett 1999; Gartzke 2000). The Affinity of Nations Index reflects the

similarity of state preferences based on voting positions of dyads in the United Nations General Assembly. The index measures the degree of similarity of voting by all members of the United Nations General Assembly from 1946-1996. The Affinity of Nations Index gives yearly values of voting similarity for each member of the General Assembly relative to each other member, in a range from -1 to 1. A score of 1 indicates complete voting similarity between the two countries. A score of -1 indicates complete dissimilarity. The values are calculated in two different ways: using a two-category approach which measures votes cast (Yes or No) and ignores abstentions; and a three-category approach which considers abstentions to be an intermediate value. It seems appropriate to include abstentions in an analysis of voting behavior as they usually represent a political signal. This study uses scores of U.N. voting using S scores for voting affinity on all roll call votes cast in the United Nations General Assembly. Signorino and Ritter (1999) develop the S score as a measure of foreign policy similarity. This measure means that "the closer two states are in the policy space – i.e., the closer their revealed policy positions – the more similar their revealed policy positions. The further apart two states are in the policy space, the more dissimilar their revealed policy positions" (Signorino and Ritter 1999). The S indicator is "calculated as: $S = 1 - 2*(d)/dmax$, where $d$ is the sum of the metric distances between dyad members (in terms of votes) in a given year and dmax is the largest possible metric distance of those votes" (Gartzke and Jo 2002). S scores are calculated based on United Nations votes on three different dimensions – "yes" for approval and "no" for disapproval, as well as an intermediate dimension for those cases where a state "abstained." The Affinity of Nations Index contains annual dyadic S scores for all states in the United Nations.

### 3.3. Democracy

I use the Polity data to capture the level of democracy. Polity data includes five factors that capture the institutional differences between democracies and autocracies: 1) the competitiveness of the process for selecting a country's chief executive, 2) the openness of this process, 3) the extent to which institutional constraints limit a chief executive's decision-making authority, 4) the competitiveness of political participation within a country, and 5) the degree to which binding rules govern political participation within it (Jaggers and Gurr 1996).

### 3.4. Control Variables

It is important to include other confounding variables that may be responsible for a commitment to PTAs. Studies (Mansfield, Milner, Rosendorff 2002; Mansfield 1998) find that political factors such as alliance positively influence the likelihood of leaders to make a commitment to a PTA. That is, "alliances are likely to promote free trade because countries are more likely to enter PTAs with their allies when they trust the credibility of their mutual political relationship. When a leader is concerned about the possibility that his ally will cooperate with other opponents, he is less likely to be willing to enter a preferential trade agreement with that ally" (Mansfield 1998). Previous studies also found that states enter a free trade agreement if they are members of the General Agreement on Tariffs and Trade (GATT) or WTO and if they are not involved in a war (Dispute) (Mansfield 1998). Studies also show the effects of hegemony on the expansion of PTAs. To a large extent, the growth in PTAs results from the decline in U.S. leadership and power. That is, states join PTAs

more extensively as hegemony declines. In this context, I control for the effect of hegemony (Hegemony) (Mansfield 1998). Hegemony can be calculated as "the percentage of total global trade (the sum of imports and exports) conducted by the state engaging in the most commerce in year t - 1" (Mansfield 1998). The geographic distance between countries (Distance) is also controlled for because this factor stimulates the formation of PTAs (Mansfield 1998). Controls for other economic conditions are also included to observe the effects of institutional variables on trade relations. Domestic economic factors can influence a leader's decision to join a PTA. For example, states with larger home markets are less likely to be motivated to enter free trade agreements compared to states with smaller home markets (Mansfield, Milner and Rosendorff 2002). Thus, the model includes the size of their economy (GDP) using the lagged per capita real GDP as a control in model. Empirical studies of trade policy also emphasize the level of macroeconomic conditions as a cause for increasing levels of protection. Trade is a field where decision-makers tend to face strong domestic pressures for import protection. When economic conditions are bad, domestic pressures for protection may suddenly occur. In other words, economic conditions influence the level of pressures for protection. "Recessions may lead states to join a PTA comprising countries whose principal industries do not rival each other. Doing so is one way a government can address domestic pressures for protection by restricting imports" (Mansfield 1998). If there are recessions, forming a PTA rather than imposing unilateral trade barriers gives some benefits to member countries of the GATT/WTO.

## 4. ESTIMATION RESULTS

Results from the models[2] show that the estimation results are consistent with theoretical expectations.

Table 1 presents the results[3] of the effects of preference similarity on the determination of leaders to commit to policy change for the formation of international trade agreements. The level of preference similarity has a strong positive effect on the commitment to tariff reduction agreements. In other words, the propensity of the determination of leaders to join Preferential Trade Agreements increases as the level of preference similarity increases. These results are consistent and robust across models with different specifications. Also, in two models, democracy continues to have a strongly positive effect on the propensity of commitment to PTAs. That is, the propensity of commitment to sign PTAs increases between democracies. The inclusion of an interaction term between preference similarity and democracy shows the same result.

The control variables behave as expected. The results indicate that the economic size of countries affects the likelihood that leaders sign PTAs. The estimates are negative and statistically significant. This means that as the economic size of a country increases, the propensity of its leaders to join PTAs decreases. Economic trade level and dispute are not uniformly statistically significant. Yet, geographically close states are more likely to enter

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[2] I include both restricted model (all independent variables and control variables are included) and unrestricted model (preference similarity excluded model) to make a contrast between two models to highlight the impact of mutual preference similarity to join PTAs.

[3] I use the command as xtgee……………. Family (bin), link(logit), robust.

**Table 1 Preference Similarity and the Leader's Determination to Join PTAs**
**(Dyadic analysis)**

| Dependent Variable: PTAs | Unrestricted Model | Restricted Model |
|---|---|---|
| Independent Variables | 1 | 2 |
| Preference similarity | .5259724*** | |
| | .1683862 | |
| Democracy | .0336639*** | .0170693*** |
| | .0038633 | .0040256 |
| GDP | -2.41e-10*** | -4.65e-09*** |
| | 1.25e-10 | 1.30e-0 |
| Trade | 1.30e-07*** | -7.60e-08 |
| | 2.66e-08 | 7.03e-0 |
| GATT | .3076423*** | .5604896** |
| | .0627129 | .082915 |
| Alliance | .414603*** | .5444613** |
| | .0726423 | .084974 |
| Distance | -.760814*** | -.7262246** |
| | .0292664 | .0389114 |
| Colonial history | 1.406653*** | 1.121388** |
| | .2393128 | .2462911 |
| Dispute | -.8025714* | -.5675965 |
| | .349169 | .4448603 |
| Hegemony | | -35.60616** |
| | | 3.980427 |
| Constant | -.3551092 | 5.19899** |
| | .2959211 | .6768774 |
| p | 0.0000 | 0.0000 |
| Wald test chi$^2$ | 1385.89 | 869.41 |
| N | 206488 | 128199 |

*p < .05; **p < .01; ***p < .001
Robust Standard Errors for Coefficients in Parentheses

into PTAs. Geographic proximity is statistically significant across models. Colonial history has a positive effect on the commitment to join PTAs and is statistically significant. Hegemony is negative and statistically significant. Alliance has a positive effect on the commitment to join a PTA and statistically significant across models. The GATT variable shows a positive sign. Countries that are parties to the GATT are more likely to sign a PTA, but this variable is uniformly statistically significant.

## 5. CONCLUSION

In this research, I present the condition in which political leaders are motivated to pursue international trade agreements. Among other factors, I focus on the effects of state preferences on the likelihood of political leaders concluding a PTA to provide a better understanding of interstate commercial cooperation. I find that leaders have greater political incentives to conclude trade agreements as their interest similarity with other potential trade partners grows. The result also confirms that democratic leaders are more likely to form trade agreements with each other. Based on empirical results, this study demonstrates that shared interest and mutual preference similarity constraints provide an important motivation for leaders to pursue PTAs. In doing so, this study suggests that not only does the domestic regime type influence the likelihood of leaders to conclude PTAs, but also that analysis of state preference similarity should be incorporated in exploring interstate commercial ties. That is, mutual preferences clearly influence policy action at the international level. Current analyses are not effective in filling the gap of how preference similarity affects the way preference similarities are aggregated into interstate commercial cooperation. I show how mutual preference similarity provides significant insights for a country's decision to join trading blocs. This preference explanation provides a new framework for showing what has been overlooked in efforts to explain the behavior of countries that rush to join PTAs. Commercial ties and exchanges do not need to be influenced by democratic norms and institutions if countries have mutually similar preferences and incentives to cooperate commercially. These findings highlight the fact that accounts involving preferences make a significant contribution towards our understanding of international political economy, especially in explaining a leader's willingness to commit to international trade agreements.

This study is beneficial to international political economy research in a number of ways. Through this study, we have a better understanding on whether preference similarity contributes to leaders' willingness to join PTAs. Such a finding has obvious policy implications for leaders, policymakers, and international political economists. This is especially of interest to practitioners given the explosive surge of PTAs among leaders in different regions. Previously, studies have suggested that the proliferation of democracies will promote an increased level of economic cooperation in the form of international trade agreements. However, this study proves that the proliferation of democracies will be less successful in motivating countries to conclude international trade agreements if countries have heterogeneous interests and preferences. Omitting the role of preference in trading blocs leads us to make incomplete conclusions in understanding the dynamic process of PTAs.

## REFERENCES

Barbieri Katherine and Gerald Schneider, 1999, "Globalization and Peace: Assessing New Directions in the Study of Trade and Conflict," *Journal of Peace Research* 36(4): 387-404.

Beck Nathaniel, Jonathan Katz, and Richard Tucker, 1998, "Taking Time Seriously: Time-

Series-Cross-Section Analysis with a Binary Dependent Variable," *American Journal of Political Science* 42: 1260-88.

Bliss, Harry and Bruce Russet, 1998, "Democratic Trading Partners: The Liberal Connection, 1962-1989." *The Journal of Politics* 60(4): 1126-47.

Crawford Jo-Ann and Sam Laird, 2000, "Regional Trade Agreements and the WTO," Paper presented for a meeting of the North American Economic and Finance Association in Boston, 6-9 January.

Dai Xinyuan, 2002, "Political Regimes and International Trade: The Democratic Difference Revisited," *American Political Science Review* 96(1): 159-65.

Gaubatz, Kurt Taylor, 1996, "Democratic States and Commitment in International Relations," *International Organization* 50(1): 109-39.

Gartzke, Erik, 1998, "KantWe All Just Get Along?: Opportunity, Willingness, and the Origins of the Democratic Peace," 1998. *American Journal of Political Science*. 42(1): 1-27.

Gartzke, Erik, 2000, "Preferences and the Democratic Peace," *International Studies Quarterly* 44(2): 191-210.

Gartzke, Erik and Dong Joon Jo, 2002, The Affinity of Nations: Similarity of State Voting Positions in the UNGA**.**

Grossman, Gene and Elhanan Helpman, 1994, "Protection for Sale," *American Economic Review* 84(4): 833-50.

Jaggers, Keith and Ted Robert Gurr, 1996, *Polity III: Regime Change and Political Authority, 1800-1994*, ICPSR version. Boulder, CO: Keith.

Lemke, Douglas & Suzanne Werner, 1996, "Power Parity, Commitment to Change, and War," *International Studies Quarterly* 40(2): 235-260.

Lemke, Douglas & William Reed, 1996, "Regime Types and Status Quo Evaluations: Power Transition Theory and the Democratic Peace", *International Interactions* 22(2): 143–164.

Lemke, Douglas & William Reed, 1998, "Power Is Not Satisfaction," *Journal of Conflict Resolution* 42(4): 511-516.

Mansfield, Edward, and Rachel Bronson, 1997, "The Political Economy of Major-Power Trade Flows," in Edward Mansfield and Helen Milner (eds), *The Political Economy of Regionalism*. New York: Columbia University Press.

Mansfield, Edward, 1998, "The proliferation of Preferential Trading Arrangements," *Journal of Conflict Resolution* 42(5): 523-43.

Mansfield, Edward, Milner Helen, Peter Rosendorff, 2002, "Why Democracies Cooperate More: Electoral Control and International Trade Agreement," *International Organization*, 56(3), 477-513.

Milner Helen, 1999, "The political economy of international trade," *Annual Review of Political Science* 2: 91-114.

Morrow James, Randolph Siverson, Taressa Taberes, 1998, "The Political Determinants of International Trade," *American Political Science Review* 92(3).

Oneal, John R., and Bruce Russett, 1997, "The Classical Liberals Were Right: Democracy, Interdependence, and Conflict, 1950-1985," *International Studies Quarterly* 41: 267-94.

Oneal, John R., and Bruce Russett, 1999, "Assessing the Liberal Peace with Alternative Specifications: Trade Still Reduces Conflict," *Journal of Peace Research* 36.

Souva, Mark, 2004, "Institutional Similarity and Interstate Conflict," *International*

*Interactions* 30 (3): 263-280.

Signorino, Curtis, and Jeffrey Ritter, 1999, "Tau-B or Not Tau-B: Measuring the Similarity of Foreign Policy Positions," *International Studies Quarterly* 43(1): 113-144.

Simmons Beth, 2000, "International law and state behavior: commitment and compliance in international monetary affairs," American Political Science Review 94: 819-35.

Reinhardt, Eric, 2000, "Aggressive Multilateralism: The Determinants of GATT/WTO Dispute Initiation, 1948-1998," Unpublished Manuscript.

Remmer, Karen, 1998, "Does Democracy Promote Interstate Cooperation?" *International Studies Quarterly* 42 (1): 25-52.

Rogowski Ronald, 1989, *Commerce and Coalitions*, Princeton, NJ: Princeton University Press.

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