

**Trade and Territorial Conflict:
International Borders as Institutions**

Beth A. Simmons
Department of Government
Harvard University

Contact information:
1521 La Loma Avenue
Berkeley CA 94708
(510) 843-8122
bsimmons@latte.harvard.edu

I would like to thank James Fearon, Peter Gourevitch and Steven Levitt for comments on an earlier draft. Thanks to the United States Institute of Peace, Washington DC, and the Institute for Global Conflict and Cooperation, University of California, for financial support for this project. Diana Duff Rutherford provided excellent research assistance while I was at USIP. I would also like to thank the following students who assisted with this project through the Undergraduate Research Apprentice Program at the University of California, Berkeley: Mimi Kong, Olga Kotlyarevskaya, Viany Orozco, Cristina Ruggiero, Julia Stuart, and Kay Vobis. Thanks to Lynn Gale at the Center for Advanced Study in Behavioral Sciences for valuable statistical advice. I retain sole responsibility for any errors.

**Trade and Territorial Conflict:
International Borders as Institutions**

Abstract:

International borders are usefully conceptualized as international political institutions that provide joint gains for the polities whose jurisdictions they distinguish. Far from irrelevant in an age of globalization, settled political borders help to make economic integration possible. But the international relations literature that focuses on territorial disputes has put too much emphasis on territory per se and far too little on the institutions of boundary settlement that produce joint gains. Students of international politics have cast the issues relating to territorial settlement in overly zero-sum terms, and may very well be missing an important impetus to conflict resolution in many cases. This paper shows empirically for the case of Latin America that territorial and border disputes entail opportunity costs (operationalized here as bilateral trade foregone). Mutually accepted borders mitigate these costs by reducing uncertainty, transactions costs, and other bilateral externalities of disputing. Theories of territorial settlement should take into account the possibility of such joint gains in their models of state dispute behavior.

Trade and Territorial Conflict: International Borders as Institutions

Three decades ago, Richard Cooper stated that “the trend toward economic interdependence between countries will require substantial changes in their approach to foreign policy in the next decade or so”(Cooper 1972:159). A wide range of studies has since been premised on the proposition that interdependence has significantly raised the costs to governments and the economies they govern of taking unilateral action. One solution to problems of coordination and collaboration among states has been to develop international institutions that reduce transactions costs and uncertainty, allowing states to enjoy greater mutual gains than would have been possible in the absence of such institutions.

The institutional paradigm has informed a broad range of studies in international political economy (Simmons and Martin 2002). The same cannot be said of international conflict studies. Scholars looking at interstate disputes have typically ignored institutional theory, focusing instead on the basic constellations of state power. The irony is that war and peace often revolve around the most ubiquitous international institution of the modern age: sovereign authority over delimited territorial space.

This paper argues for a reconceptualization of international borders as they have come to be understood in the international relations literature. One branch of that literature has emphasized the extent to which disputes over territory, more than any other issue, have spurred interstate rivalry, military confrontation, and all-out war. Borders as territorial divisions are then analyzed as zero-sum manifestations of state competition for power, prestige, lebensraum, or an imagined historical identity.

Yet the globalization literature continually reminds us that we live in a world in which territory matters less, and human capital matters more to national power. It also entreats us to believe that national boundaries matter less now than they ever have in the past. Markets override national boundaries, causing some commentators to suggest that our world is increasingly “borderless” (Ohmae 1990).

Neither of these conceptions is useful for understanding the role of international boundaries in a world of potentially highly interdependent nation states. In such a world, international borders are more important than ever, but they are increasingly inappropriate objects of interstate competition. The best way to understand this irony is to theorize about international borders as international political-economic institutions that produce not only divisible benefits, but mutual benefits as well. As I will show, thinking about borders in this fashion is not only plausible; it also resolves a number of issues that from the traditional realist and the globalization perspectives are puzzling.¹

This study proceeds in three sections. The first section sets out the argument that international borders that are accepted by adjacent states as legitimate should be thought of as international institutions that enhance certainty, reduce transactions costs, and provide mutual gains that are eroded or lost if the legitimacy of the border is in dispute. I concede that, from an economic point of view, a world of separate jurisdictions is less efficient than one of distinct nation states. But given a state system, settled territorial boundaries allow governments to realize important economic and political benefits that are very difficult to achieve in the absence of a well-accepted international border agreement. I will demonstrate

¹ These issues were, to my knowledge, first explored empirically by Albert Hahn in "Borders, Conflict, and Money: The Effect of Territorial Disputes on Bilateral Trade from 1950 to 1990." MA thesis, UC Berkeley Department of Political Science, 2000.

this in a very concrete fashion: by showing that there are significant opportunity costs to disputing the accuracy or legitimacy of a particular territorial division.

The second and third sections develop the methodology and demonstrate this claim empirically. Using a gravity model of trade, and controlling for a broad range of likely alternative explanations, I show that the mere fact of disputing a border has a significant negative impact on contiguous countries' bilateral trade. This is true even when we control for the effects of the actual threat or use of force. In short, I show that there is a high opportunity cost to disputing an international boundary. The argument is *not* that globalization and post-industrial technological advances have made territory per se less important. Rather, it is that borders as *institutions* for organizing understandings about jurisdiction over territory are increasingly important as the potential for economic interdependence increases. I conclude in section four that settled borders are an important international institutional arrangement that, as long as we live in a world of nation states, is helpful to further economic integration. The consequences for our understanding of international conflict and cooperation in this area are profound.

I. Borders as institutions

Geographers usually define international boundaries as spatial manifestations of political control displayed in the landscape (Rumley and Minghi 1991). As such, international boundaries separate areas subject to different political control or sovereignty. They represent the physical line of contact between states, and afford opportunities for both cooperation and discord (Prescott 1987:5).

It is the latter feature of international boundaries that has received so much attention in the international relations literature. Borders place physical limits on the exercise of state authority, as well as provide the physical space available for the provision of national security. For these reasons, they are a primary concern of scholars in the realist tradition who view power and the search for security to be the central features of international relations. Hans Morgenthau, who was remarkably eclectic in this regard, placed geography and natural resources – elements closely associated with territory – right at the top of the list of elements of national power (Morgenthau 1985:127-136). Moreover, he emphasized territorial reallocation as a central way to preserve the balance of power, a process he characterized as achievable by “diminishing the weight of the heavier scale or by increasing the weight of the lighter one” (Morgenthau 1985). Yet one ought not to portray his approach as unduly mechanistic. Morgenthau was also willing to consider national character, national morale, and the problem of popular support as important determinants of national power.² Each of these, of course, can be closely linked with the prospects of territorial loss or accretion.

Realist thinking overlapped with conceptions of the state and territoriality developed by early 20th century scholars of geopolitics (Mackinder 1904). Robert Gilpin’s claim that “throughout history” states have had as a principal objective “the conquest of territory in order to advance economic, security, and other interests” (Gilpin 1981:23), is not radically different from classical 19th century scholars whose theories treated states as “competitive territorial entities vying with one another for control over parts of the earth’s surface” (Murphy 2001).

² Morgenthau was also willing to recognize the reduced importance of territory in the nuclear age (Biersteker 2002).

For those who draw inspiration from realist theory, an international boundary is typically conceived of in zero-sum terms. Gary Goertz and Paul Diehl provide the clearest contemporary expression of this general assumption:

Because a territorial dispute is primarily zero-sum (usually only one entity can control a piece of land) it may appear surprising that the vast majority of all territorial changes over the last 165 years have been completed peacefully. (Goertz and Diehl 1992:51)

The assumption has informed a good deal of research that shows disputes over territory are much more prone to degenerate into violent interstate conflict than are disputes over other issues (Brecher 1993; Gochman and Leng 1983; Hensel 1999; Senese 1996). Disputes over territory have been linked to ongoing violent rivalries between states, as well as the frequency and intensity of war (Goertz and Diehl 1992; Holsti 1991; Huth 1996; Mandell 1980; Vasquez 1993; Vasquez 1995). Studies that focus on the resolution of territorial disputes almost always focus on external security variables, though in light of the literature on the “democratic peace” more attention has been given to domestic regime type and international norms (Huth 1996; Kacowicz 1994).

The realist approach to territorial issues has not quite figured out what to do with a few stubborn facts. The first is highlighted in the quote by Goertz and Diehl above. If control over territory is truly zero-sum and so closely connected to issues of national security, why has territory so often been transferred peacefully? Immediately one thinks of imposed solutions where resistance may have been deterred, but there are other apparent anomalies from a realist perspective. Paul Huth cites evidence that in all of the years since the Second World War, less than one-third of all international borders have been disputed (Huth 1996:8). The best empirical analysts merely flag these as “null cases” for purposes of statistical controls, but they are of serious theoretical import. Why are so many borders

accepted as legitimate and uncontested? Even in the Middle East, usually perceived as a hotbed of territorial contention, formal mutually accepted treaties exist for 80% of the region's land boundaries (Blake 1992). Realists do not have a clear answer for why so much of the world should be in apparent equilibrium for the past half-century. Institutionalism on the other hand provides insights, which we discuss below.

Moreover, it is difficult to articulate (and to my knowledge, no one has attempted) a realist account for the decline in the use of force in cases of territorial disputes. Yet there is an emerging scholarly consensus that disputes are less and less resolved through violence. One revealing statistic is that territorial change as a result of violence dropped from 33 percent before World War II to 16 percent afterwards (Goertz and Diehl 1992:52). Edward Morse attributed this development to the forces of modernization, including the rise of economic interdependence (Morse 1976). Mark Zacher has proposed a more normative explanation, arguing that growing acceptance of an "anti-territorial revisionism norm" discourages the use of violence in border disputes (Zacher 2001).

While realists are working out empirical explanations of the hows and whys of boundary disputation and territorial transfer, the globalists are telling us that none of this should matter. Though not all accounts go as far as Kenichi Ohmae, who asserts that the world is now "borderless," (Ohmae 1990; Ohmae 1995) it is rather commonly accepted that borders are declining in economic significance (Herz 1957; O'Brien 1992) as well as social-cultural significance (Agnew and Duncan 1989; Appadurai 1996). Richard Rosecrance has long argued that trade increasingly trumps territory as a source of national power (Rosecrance 1986; Rosecrance 1996). John Stopford and Susan Strange have argued extensively that competition for world markets, for example, has replaced competition for territory, or for control over the natural resources of territory, as the "name of the game"

between states (Stopford and Strange 1991; Strange 1996). Geographers as well as political scientists in the 1990s have argued that the control of networks of finance, information, and transportation are much more important than control over territory per se (Agnew and Knox 1994; Kobrin 1997; Luke 1991; Murphy 1999; Ruggie 1993).

The evidence for these claims is in most cases episodic, but where it has been systematic, it has not been especially supportive of the irrelevance of international borders. Although internationalization in today's "global era" is no doubt real and significant, national boundaries continue to have significant influences on international economic relations. Globalists are at a loss to explain why international investment is not *more* globalized than it is: why is there such a "home bias" when it comes to investing (Goldstein and Mussa 1993; Sobel 1994)? John McCallum's study of bilateral trade between the U.S. and Canada was the first to show empirically that a "borderless" North America does not yet exist: as of 1990, trade between Canadian provinces was almost 22 times that of Canada-U.S. trade, all other factors being held equal (McCallum 1995:617). This study served as the foundation for a more complete and comprehensive study by John Helliwell, who not only confirmed McCallum's findings, but also found that even after the Free Trade Agreement (FTA) of 1990, U.S.- Canada border effects were still in the tenfold range (Helliwell 1998:21). Furthermore, Helliwell extended the analysis to trade between all countries in the 1986-1996 period, showing that border effects were an international phenomenon, and particularly acute for developing countries (Helliwell 1998:59). Departing from McCallum and Helliwell's trade-centered analyses, Charles Engel and John Rogers confirmed the importance of borders using the "law of one price." They showed that even after holding all other factors equal, price divergences between cities in different countries are much greater

than between cities in the same country (Engel and Rogers 1996). Borders, they claim, are indeed still quite “wide.”

What is needed is a way to think about international boundaries that is neither prisoner to realism’s zero-sum approach to traditional concerns of state security, nor falls prey to claims that borders do not matter. It is instructive to return to Prescott’s (a geographer) description of an international boundary and to notice how much it has in common with the conditions which international relations scholars have associated with those given rise to “interesting” issues with respect to cooperation (Keohane 1984). International boundaries involve “mixed motive games” which Schelling characterized as having elements of “mutual dependence, and conflict, of partnership and competition” (Schelling 1980:89). Realists have spelled out quite well the competitive elements in boundary determination and acceptance: territory may have symbolic, political, historical, or other kinds of significance that make it difficult for states to give it up. On the other hand – and this is rarely emphasized in the literature on territory and boundaries – well-accepted international border arrangements provide *mutual* benefits for states that may be very difficult for either to realize through unilateral policies.

Governments may want to maximize their territorial authority, but like players in a game of battle of the sexes, may place a good deal of value on capturing the value associated with agreeing on the line. Governments may in some cases be relatively indifferent to where the exact line is drawn (at least over the range of territory that is being negotiated), and may place far more value on settlement itself. I argue this is because an institutionalized border arrangement provides benefits that each country can only enjoy if it cooperates with its neighbor in resolving the border dispute. Primarily, these benefits flow from the certainty

and the reduction in transactions costs that flow from a normalization of relations regarding the border.

Just what are some of these benefits that require mutual acceptance of the border? In this paper we focus on the economic benefits. All of the economic literature suggests that trade is highly sensitive to risk and transactions costs involved in among even the friendliest of trade partners (the studies cited above found significant effects to the border between countries as friendly as the United States and Canada). Now insert contention over the extent of territorial authority. There are good theoretical reasons to believe that such a dispute would inject significant uncertainty and risk into developing cross-border trade links. Most obviously, the dispute could become active, and most studies have shown that war reduces bilateral trade volumes (Anderton, Anderton, and Carter 1999; Anderton and Carter 2001).³ More subtly, the disputing governments may be more likely to interfere with trade at the border (customs hassles) or to develop explicit policies to reduce their mutual dependence out of mutual suspicion of one another's motives and intentions stemming from the territorial dispute (Hirschman 1945). In some cases, the border might simply be closed for security reasons. In any case, a heavy military or police presence of a hostile state around the border itself is unlikely to be very inviting to traders.

But the broader reasons for stagnant trade will have to do with the general uncertainty surrounding relations between the two countries' governments. Should an investment be made in developing relationships with suppliers or marketing to consumers in a country with which relations are so uncertain? Subjection to hostile propaganda campaigns is another potential problem. In short, traders face costs and risks of developing business

³ But see (Barbieri and Levy 1999; Barbieri and Levy 2001).

linkages in countries with which their government has a dispute.⁴ The territorial dispute over the Kurile Islands, for example, has caused economic relations between Japan and Russia to stagnate, even while those between Russia and Korea have continued to expand (Akaha 1996; Linge 1995; Meyer 1998).⁵

Historically, the link between settling an outstanding territorial claim and improving bilateral trade has often been manifest by the nearly simultaneous conclusion of territorial agreements and treaties of “friendship, commerce and navigation”. For example, Argentina and Bolivia addressed border issues in a Friendship, Commerce, and Navigation Treaty in 1868; Chile and Argentina settled the Beagle Channel dispute and signed a friendship and commerce treaty in 1984; Brazil and Peru signed a series of boundary treaties that also addressed commerce and navigation (1841, 1851, 1909) (Ireland 1938; Ireland 1941). Governments have historically been willing to facilitate international economic relations once disputes over territory have been settled.

International investors may be even more wary than traders of cross border contracts involving jurisdictional disputes over the border. In the case of the Saudi-Yemeni border dispute (settled by treaty, June 12, 2000), the expectation that the region was well-endowed with hydrocarbons drove attempts to negotiate a boundary settlement (Schofield 1997). But even if we consider the broader decision to invest away from the border, investors are likely to run risks of a sovereign-induced nature if they sink assets in countries that have a fundamentally hostile posture to their home country. Finally, despite the inherent attractions of some border regions (Timothy 1995), tourists can hardly be expected

⁴ Brian Pollins, for example, found that “...importers (regardless of the level of analysis we choose) take account not only of price and quality of goods and services but of the place of origin of these products and the *political relationship between the importing and the exporting nation*” (Pollins 1989:738). Pollins also notes that exporters are subject to the same considerations.

⁵ But see (Carlile 1994).

to flock to border regions that may be heavily armed, or that lack basic infrastructural investment due to the dispute over the border. Though we rarely consider this impact, tourism is increasingly significant to the economies of many countries (Martin 2003). These are opportunities foregone for the lack of clearly accepted understandings about the international border.

There is another reason why unsettled borders are potentially costly to governments: they may stand in the way of regional economic integration. The prospect of Turkey or Cypress joining the European Union, for example, has run up against the territorial claims of the former over portions of the latter, as well as other disputes involving Greece in the Aegean Sea (Joseph 1996; Theophylactou 1995). Leaders in both Peru and Ecuador viewed regional economic integration primary emanating from Mercosur as an incentive to settle the border. The alternative was to risk getting left behind as the rest of Latin America developed stronger trade relations. Exclusion from regional arrangements in some cases is another opportunity cost of territorial disputes.

If we view settled international boundaries as valuable international institutions that provide joint benefits to adjacent governments, then we can understand some findings that from a realist perspective appear quite anomalous. Goertz and Diehl for example expect that “the greater the intrinsic value of the territory involved, the more likely military conflict is to be a part of the transfer” (Goertz and Diehl 1992:88). Yet Paul Huth found that “when economic issues are predominantly at stake then compromise settlements are quite likely” (Huth 1996:153). How can a realist, especially one concerned with relative gains (Grieco 1988; Mearsheimer 1994-95) explain such an outcome? It is easily explicable in institutionalist terms: without a settlement, these would have been economic gains largely forgone for lack of investment – the result of uncertainty and transactions costs for private

actors associated with governmental territorial disputing. (It is interesting to note, however, that Huth explains the propensity to settle where economic issues are at stake as flowing from the ease of *dividing* rather than the institutional potential for *generating* economic benefits).⁶

There are good reasons for accepting this paradigm shift with respect to borders. The traditional geopolitical concept of security as defense of territory and containing or neutralizing threats to a nation's sovereignty has come to be regarded as narrow and even self-defeating.⁷ Governments are increasingly willing to expand the parameters of security to include inputs of economic development, social reconstruction, and empowerment of human rights.⁸ In the case of the Peru-Ecuador conflict, governments were increasingly aware of the opportunity costs they pay in terms of domestic social development and lost international trade and investment (Simmons 1999). In that case (finally resolved in 1998) Peruvian and Ecuadorian leaders were motivated to build agreements on joint development into the border agreement, and then marketed the package to the broader community of international investors (Simmons forthcoming).

To summarize: international border arrangements can be fruitfully analyzed in institutionalist terms. Settled borders signal private economic agents that military conflict is less likely, that economic development is a higher value than territorial acquisition, that hostile harassment at the border is much less likely, and that property rights will not be subject to jurisdictional controversies. In short, settling territorial disputes is a costly signal

⁶ Yarbrough and Yarbrough suggest that demands for sovereign territorial over resources should be related to transactions costs. They argue that economic agents are likely to want to change international boundaries in order to reduce transactions costs by bringing resources under a single governance structure. (Yarbrough and Yarbrough 1994).

⁷ This point has long been recognized by liberals such as Norman Angell (1911) who, on the eve of World War I was highly skeptical of the idea that sovereign territorial acquisition would provide a basis for prosperity and influence (Angell 1911).

⁸ This point is made with respect to South Asia by (Gupta 1997).

that a state has made the conversion from a territorial state to a trading state. In the next section, some plausibility is provided for these arguments by demonstrating just how costly territorial disputes can be. There is no denying that such disputes can be costly in terms of human life, military expenditures, and lost trade when these conflicts become hot. But what I seek to show is that *even when controlling for the threat or use of force, merely disputing the border is a costly drag on bilateral trade.*⁹ These costs are documented using a gravity model, to which is added the presence of a territorial dispute. The results suggest that institutional arrangements that reduce uncertainty and transactions costs go a long way toward supporting the conditions under which economic integration may flourish.

II. Data and Methodology

Establishing a baseline for trade: Border effects using a gravity model of bilateral trade

The strategy of this section is to isolate the effects of a disputed border on the bilateral trade between two countries.¹⁰ The central hypothesis is that disputed borders involve tremendous economic opportunity costs, which are conceptualized for purposes of empirical testing as bilateral trade foregone. The problem is how to estimate the size of this “lost opportunity”, controlling for other plausible determinants of trade.

⁹ The effect of a territorial dispute on a country’s total trade is not explicitly tested here. There is some possibility that disputes divert a portion of potential bilateral trade to third countries. Such diversion is not likely to absorb all of the potential trade between disputants, and in any case is not likely to be as efficient as trade between contiguous neighbors.

¹⁰ Certainly, other kinds of international disputes may also affect bilateral trade. Political or ideological disputes, such as that between the United States and Cuba, are also candidates for reducing trade. The effect of foreign policy posture on trade has been analyzed by Pollins (1989). The purpose here is to focus explicitly on territorial disputes as a way to motivate a theoretical re-orientation of international boundaries.

I employ a gravity model of trade, which has been widely used to examine bilateral trade flows since it was pioneered in the 1960s (Linneman 1966; Poyhonen 1963; Tinbergen 1962). The basic gravity model is a very simple empirical model that explains bilateral trade between countries as proportional to their “mass” (usually captured by gross domestic product) and inversely proportional to the distance between countries. This simple baseline model has a remarkably consistent history of success as an empirical tool. The response of bilateral trade to income and distance regularly produces large, correctly signed and statistically significant coefficients (Davis et al. 1997; Frankel, Stein, and Wei 1997; Helpman 1984; Leamer and Levinsohn 1995; Linneman 1966).

Gravity models of trade now have a clear and convincing link to international trade theory (Anderson 1979; Oguledo and MacPhee 1996). Constant-returns Heckscher-Ohlin trade models can generate the basic gravity equation, in the presence of large factor endowment differences between countries that supports trade specialization and inter-industry trade (Deardorff 1998; Evenett and Keller 1998; Leamer 1974). This theory has been especially useful for analyzing the volume of north-south trade (Marcusen and Wigle 1990). On the other hand, increasing returns models can also generate the specialization required for gravity models to make conceptual sense, but are more likely to apply to trade within regions and to generate high proportions of intra-industry trade (Bergstrand 1989; Helpman 1984; Helpman 1987). Since the relationships specified in the gravity equation are basically consistent with more than one theoretical tradition, scholars have emphasized that it is less useful for discriminating between theories of trade than in making empirical predictions about the volume of trade itself (Deardorff 1998).

The empirical robustness and theoretical foundations that have been drawn make the gravity model highly useful for exploring the impact of a broad range of factors on a baseline

model of trade. For example, by including a variable for regional trade institutions, a number of scholars have used this approach to study the extent to which regional trade arrangements are trade-creating or trade-diverting (Bayoumi and Eichengreen 1995; Frankel and Wei 1993; Hamilton and Winters 1992; Polak 1996). Andrew Rose uses a gravity model as a baseline to measure the impact of currency union on international trade (Rose 1999). Rebecca Summary examined the effects of political rights on arms trade using this approach (Summary 1989). Brian Pollins includes membership in free trade agreements such as NAFTA, LAFTA, and the EC, as well as a “conflict and cooperation index” in order to study the relationship between foreign policy and trade (Pollins 1989). Gravity models have been used to explain patterns of trade in sectors from wheat to apparel to mobile communication flows (Christerson 1994; Koo and Karemera 1991; Matthes 1994). It is employed here to ask: how much does a border dispute detract from expected bilateral trade volumes?

Gravity models of bilateral trade typically take the following form

$$T_{ab} = f(Y_{ab}, D_{ab}, R_{ab})$$

T represents the trade flow between countries *a* and *b*; **Y** represents the economic size of the two countries, **D** represents the physical distance from country *a* to *b*, and finally, **R** represents other factors that may resist or encourage trade between *a* and *b*. Because we are interested in the effects of a settled, mutually accepted border on bilateral trade flows, we use the following specification of the gravity model:

$$\log(T_{ab}) = \beta_0 + \beta_1 \log(Y_a + Y_b) + \beta_2 \log(D_{ab}) + \beta_3 (BD) + \beta_4 (\text{controls}) + \epsilon$$

The dependent variable $\log(\mathbf{T}_{ab})$ represents the logged total flow of dyadic trade expressed in millions of US dollars.¹¹ $\mathbf{Log}(\mathbf{Y}_a + \mathbf{Y}_b)$ represents the combined economic size of the two trading nations, measured as the logged gross domestic product. The expected coefficient is positive. $\mathbf{Log}(\mathbf{D}_{ab})$ represents distance between capitals of the country dyad, expressed in logged kilometers. The expected coefficient is negative, as greater distance represents greater transportation costs that should add “economic distance” and thus decrease trade volume. \mathbf{BD} represents the existence of a border dispute, coded as 1 if there is a dispute between the two countries, otherwise zero. The expected coefficient is negative; our central expectation is that disputes reduce bilateral trade.

The Primary Explanatory Variable: Defining Territorial Disputes

A crucial question is how one identifies a territorial dispute. Conceptually, we are interested in overlapping territorial claims that can be expected to instill uncertainty regarding jurisdictional authority, even in the absence of the overt use of military force. Paul Huth has developed a useful set of criteria for selecting cases that fit our concern. He coded territorial disputes as cases of governments’ disagreement over the location of a border (whether or not a treaty has attempted to spell this out); when one country occupies the national territory of another and refuses to relinquish control or withdraw; when one government does not recognize the sovereignty of another over some portion of territory within the border of that country; or when a government does not recognize the independence and sovereignty of another country (or colonial territory), and seeks to annex some or all of its territory (Huth 1996:19-23).

¹¹ When trade is zero, the value zero was kept instead of allowing it to fall out after the log function.

In Huth's study, disputes are considered "resolved" when these conditions are reversed.¹² I favor Huth's rather stringent definition of resolution – involving governments' formal acknowledgement of the legitimacy of a particular border arrangement – because the argument turns precisely on institutions' role in reducing transactions costs and uncertainty. Publicly articulated arrangements of a formal nature are more likely to produce the confidence in resolution upon which our theory turns.¹³ I therefore use Huth's list of cases, updating them where necessary (see Appendix 1; disputing dyads are also listed in Table 2, discussed below).

Controls

I also include a set of control variables that could influence bilateral trade levels. First, it is useful to distinguish this argument about stable territorial institutions from arguments about the consequences of war or the threat of military force for commercial relations. Empirical studies suggest that war between countries reduces their bilateral trade. Admittedly, this is likely to be true, but here it is argued that the prolonged uncertainty of an ongoing dispute over territory is a more pervasive detriment to trade than actual cases of the use of force. Countries need not actually brandish their military might or engage in armed conflict to incur the opportunity costs of disputing their borders.¹⁴ We are more interested

¹² Huth (1996 p. 23) defines the end of a dispute as:

1. "The occupation and assumption of control over disputed territory by the challenger is formally recognized by the target in a treaty, an international agreement, or in an official statement by the political leadership of the target.
2. The signing of a bilateral agreement with a target or an official statement by the challenger in which its territorial claims are either renounced or are satisfied with a compromise settlement.
3. The challenger agrees to abide by a ruling issued by the ICJ [International Court of Justice] or an international arbitration panel."

¹³ On the value of formal arrangements (usually treaties) for signaling an intention to comply, see (Abbott and Snidal 2000; Lipson 1991).

¹⁴ There is a mild positive correlation between territorial disputes and military disputes of .258 in this dataset.

in negative externalities associated with unsettled borders for cross-border trade, though we would expect the actual use of force to reduce trade as well.

I also control for the general level of trade openness for the two countries in question. Certainly it is possible that each country's general trade posture (its commitment to protection to enhance self-sufficiency, its overall development strategy) could be a central determinant of bilateral trade levels as well. I include total exports plus imports to and from the rest of the world as a proportion of GDP for each country (multiplied and logged) to control for general trade posture. The expectation is that bilateral trade is partially a function of two countries' general trade policy. The more open generally, the more positive the effect on bilateral trade.

A further possibility is that trade is influenced by the nature of the regimes constituting the pair. More democratic countries may simply tend to be more liberal economically and may very well have more intense bilateral trading relationships. I use a dichotomous indicator for a democratic pair – coded 1 when *both* countries score above 5 for democratic governance on the Polity scale of –10 (low) to 10 (high). Since, as described below, a fixed-effects model is used, over-time variance in these measures is important. Appendix 2 indicates how the regime type of each pair and the level of overall trade openness have varied for each country-pair over time (see Appendix 1 for all data measures and sources). Finally, I control for time as well. The expectation is that all trade is increasing over time, and thus that we should see a strong positive correlation of bilateral trade with the passage of time.

Case Selection and Estimation Methods

These ideas are tested using territorial disputes from Latin America between 1967 and 2000. This region of nearly half a billion people affords a good opportunity to assess the claims about the importance of settled borders for trade. Most importantly it is a region in which the boundary conditions of our theory are likely to hold. That is, evidence suggests that for the most part governments in this region are likely to value trade, as past experiments with import substitution have been set aside and conscious efforts over the last two decades to develop regional trade through such institutions as Mercosur, the Andean Pact, and the Central American Common Market have accelerated. Figure 1 illustrates the growth in share of GDP in Latin American that is traded intra-regionally and with the rest of the world.

[FIGURE 1 ABOUT HERE]

Focusing on Latin America also holds some variables constant: language, culture, and highly charged ethnic conflicts are not likely to be at play in border and trade relations in this region. This region is also appropriate because of its long history of political independence. Unlike areas which have more recently been under foreign administration, trade is less likely in Latin America to be distorted by colonialism. More generally, there are good reasons to believe that regions are highly heterogenous and that to pool them would at this point in our research would be premature. While border disputes are likely to distort trade generally, the most appropriate model is very likely to differ across regions.

The choice of Latin America does provide a good degree of variance with respect to territorial disputing both across countries. For the time period examined here,¹⁵ twenty-three contiguous country-pairs have had no territorial disputes, 8 country pairs have settled their disputes,¹⁶ three are still disputing,¹⁷ and one dispute seems to have developed during the period of observation.¹⁸ Finally, because we are only interested in those cases in which there is a *possibility* of a territorial dispute, I focus here on contiguous country pairs, with one exception for a case regarding islands involving non-contiguous countries.¹⁹

Time series cross-sectional data are used for the years 1967-2000 for thirty-six country pairs (where possible),²⁰ and the data are analyzed using ordinary least squares and robust standard errors for clustered samples.²¹ There are strong theoretical reasons for using a fixed effects model: certainly, we are offering a quite spare model of bilateral trade, and have explicitly decided to set aside a number of plausible influences on bilateral trade unique to each pair.²² Country pair dummies absorb many of the crucial aspects of geography (mountains, waterways, Amazonian jungle) that obviously influence the transactions costs of trade, but are not picked up in our distance measure. These dummies are also likely to absorb other disturbances or dislocations of a domestic nature that affect demand and

¹⁵ Reliable GDP data – essential for the gravity model – are difficult to assemble in a consistent time series for some of these countries prior to the early 1960s.

¹⁶ Honduras and Nicaragua (1960), El Salvador and Honduras (1992), Argentina and Uruguay (1973), Guyana and Suriname (1994), Brazil and Uruguay (1994), Argentina and Chile (1995), Bolivia and Chile (1995), and Ecuador and Peru (1998).

¹⁷ Belize and Guatemala, Guyana and Venezuela, and Colombia and Nicaragua.

¹⁸ The dispute between Nicaragua and Colombia seems to have opened in 1980 with Nicaragua's assertion of a claim to the islands of Providencia, San Andres, and Santa Catalina, claimed also by Colombia.

¹⁹ The non-contiguous case is that of Colombia and Nicaragua. The use of contiguous pairs necessitates the use of distance between capitals as our measure of distance. In Brazil's case, Rio de Janeiro was used instead of Brasilia.

²⁰ The following countries do not enter the dataset until the date of their independence: Guyana (1966), Suriname (1975), and Belize (1981).

²¹ Robust to deviations from ordinary assumptions of independent, identically distributed errors. The purpose is to account for the fact that and recalculate standard errors for non-independent observations within country-pairs.

²² For a discussion of the use of fixed effects models, see (Green, Kim, and Yoon 2001).

production (civil conflicts, for example). In all of the specifications below country-pair dummies are included and most are highly significant, but are not reported.²³

III. Findings

The results of the analysis are reported in Table 1. All five versions of the model show that our central expectations about bilateral trade are strongly confirmed. The two primary elements of the gravity model, distance and size of economy, work precisely as anticipated: distance reduces trade and the combined economic size of the trading partners increases it. The most important result for our purposes, however, is that the existence of a territorial dispute certainly puts a serious drag on bilateral trading relations.

[TABLE 1 ABOUT HERE]

For the period as a whole, the effect of disputing is to forego a reduction of about 36% of bilateral trade each year the dispute is not settled.²⁴ For Peru and Ecuador, model 1 estimated an average loss of about \$35 million in bilateral trade foregone for every year those two countries continued to dispute their borders. Similarly the model estimates that Argentina and Chile lost potentially an average of some \$326 million per year until their (multiple) territorial disputes were settled in 1995.

In order to give a clearer idea of the estimated impact of territorial disputes on trade for particular country pairs at particular points in time, Table 2 shows what effect our most basic model (Model 1) would expect a territorial dispute to have had on trade during our

²³ Full results including coefficients on country-pair dummies are available from the author upon request.

²⁴ Using the coefficient for logged bilateral trade in Table 1 Model 1, this is calculated as $1 - e^{-0.36}$.

period of observation. Each of the country pairs in this table had an unresolved dispute over territory during the period under observation. Estimates of bilateral trade assuming disputes compared with no disputes are presented first. The difference between these estimates represents bilateral trade foregone attributed by this model to disputes over territory. This can be compared with actual observed trade averages for both disputed and undisputed years.

[TABLE 2 ABOUT HERE]

The final column shows how much bilateral trade may have been reduced for each country for the period as a whole. When we cumulate the effects of disputing territory between Argentina and Chile for the period under observation, for example, the total bilateral trade foregone (1967-1994) is estimated to total over \$9 billion. The cumulative total for Ecuador and Peru is estimated to be over a billion dollars. To put these effects in perspective, this is more than a third of Ecuador's and about a sixth of Peru's total overseas development assistance received during the same period.²⁵

In most cases, country-pairs traded less on average while disputing over territory than our model predicts, and more on average than our prediction once the dispute was settled. Clearly, there is more volatility in trade than this spare model is able to detect. The model does a better job predicting the level of bilateral trade under disputes than for dispute-free years, because of the greater volatility and the smaller number of data points for dispute-free years among these pairs. Actual trade between Colombia-Nicaragua and Belize-Guatemala go against expectations because they begin the period without disputes, but conclude under the cloud of territorial contestation. A few partners have managed to

maintain high trade levels in spite of their disputes. Ecuador and Peru, for example, had levels of actual trade that were above those predicted under both conditions by Model 1. Overall, however, the table shows how costly it has been to bilateral economic relations – in terms of lost economic opportunities – for Latin American countries to actively contest their boundaries.

Figure 2 takes a closer look at how the estimations of model 1 square with reality. It plots actual versus predicted bilateral trade for four country-pairs based on model 1.

[FIGURE 2 ABOUT HERE]

In the case of Colombia and Nicaragua, the model simply could not cope with the extreme volatility in trade over the last two decades. Ecuador and Peru have had two distinct spikes in their trade that the model misses. We can see actual trade tumble in 1995, though, which is what we would expect with the deterioration that year in relations around the border. In the case of Argentina and Uruguay, we see actual trade trend upward in the 1990s in what is likely the effect of Mercosur. Nonetheless, trade does clearly pick up after 1974 – the year these countries' territorial claims were resolved. Finally, the model does extremely well predicting the actual trade of Argentina and Chile. The 1990s have been a boom period for bilateral economic relations between these two erstwhile territorial competitors.

It is possible that these results are simply a function of countries' developmental strategies rather than the consequence of an open diplomatic wound involving territory. Bilateral trade might be low because of a general commitment to import substitution or a

²⁵ Ecuador received about \$2.83 and Peru about \$6.1 billion in official overseas development assistance during the period of their territorial dispute. Figures are from the World Bank's *World Development Indicators* CD-rom.

policy of self-sufficiency. To account for this possibility, models 2-5 include our measure of general openness. Unsurprisingly, the pairs' general export orientation is positively reflected in higher bilateral trade, though this variable is of marginal statistical significance. But the important observation for our purposes is that overall trade orientation does not wash out the bilateral effects of disputing; on the contrary, its inclusion enhances them somewhat. The coefficient on territorial disputes in Table 1 model 2 is $-.492$, slightly more than that estimated without accounting for developmental strategy.

What is most fascinating about the effect of disputing territory is that it persists even when controlling for actual militarized disputes. Model 3 in Table 1 controls for the active threat, show or use of force between the countries of a pair, and this variable has no significant impact on bilateral trade levels for these countries in this time period.²⁶ Of course, the actual number of militarized disputes between Latin America countries during this time period is relatively small.²⁷ Still, these results are extremely interesting for our theory of territorial settlements: beyond any damage done by the actual or eminent use of military force, the uncertainties surrounding border disputes continue to cumulate opportunity costs in terms of bilateral trade foregone. Whether or not foreign relations come to blows, trade is diminished by the exertion of contradictory sovereignty claims over the territory of a trading partner. This brings us closer to isolating the effect of the damaged or absent *institution itself* on understanding economic losses that cumulate over time and put a drag on the economy.

²⁶ Moreover, when military disputes are inserted into model 1 and territorial disputes are removed, military disputes alone have no apparent effect on bilateral trade (coefficient $.072$, standard error $.157$). This raises our confidence further that the institutional uncertainty of a border conflict rather than military conflict *per se* puts a drag on trade.

²⁷ Honduras and Nicaragua (1957), Guyana and Venezuela (1966, 1969, 1970, 1976, 1981 and 1982), Guyana and Suriname (1976), El Salvador and Honduras (1976), Ecuador and Peru (1953, 1954, 1955, 1977, 1978, 1981 and 1995), Argentina and Uruguay (1969, 1973), and Argentina and Chile (1952, 1955, 1958, 1959, 1964, 1965, 1967, 1968, 1977, 1978, 1979, 1980, 1981).

Furthermore, it is highly unlikely that bilateral trade can be explained by processes of democratization and regime liberalization in the region. Joint democracy – a condition we might have associated with economic liberalization – is unlikely to impact bilateral trade, according to these data (model 4).²⁸

Finally, because globalization has tended to trend upward over the course of the postwar years, it would seem appropriate to control for the passage of time on bilateral trade. Surprisingly, including a variable to capture time had no significant effect on any of the variables in the analysis, nor was it significant in explaining bilateral trade (model 5). This raises our confidence that we are capturing the real effects of disputing and not simply time-related globalization trends. Model 6 tests all of these arguments simultaneously. Distance just barely loses its statistical significance, and joint democracy becomes statistically significant (in the wrong direction), but our essential finding remains in tact.

Do territorial disputes have a constant effect on trade over time? One possibility is that as long as governments do not act *forcibly* to stake their claims, economic actors become adjusted to the ambient level of uncertainty and develop economic links to the best of their ability under the tenuous circumstances. Informal norms to “agree to disagree” may develop, effectively reducing the impact of the formal dispute on trade. If this is the case, we should see a trend upward in the coefficient for territorial disputes over time. Figure 3 displays the coefficients estimated separately for five-year periods using the specification in model 1.²⁹

[FIGURE 3 ABOUT HERE]

²⁸ This result is robust to varying specifications of joint democracy. While the above results relate to a mutual cut-off point of 5 on the combined democracy-autocracy index (ranging from -10 to 10), a similar coefficient results from a mutual cutoff at 7 (-.123, with s.e. of .248).

These five-year cross-sections produce volatile estimates (a few of which are not statistically significant) of the effects of disputing. While this period analysis returns both negative and positive coefficients, there is no clear trend in these coefficients over time. Five periods had negative coefficients (four of which were statistically significant) and three periods had positive coefficients (one of which was highly statistically significant). It is not easy to conclude that there has been a secular change in the relationship between territorial disputes and bilateral trade over the last forty years.

IV. Conclusions

Border disputes have led to serious economic opportunity costs, even in cases where trade partners have never exchanged an explicit military threat. Notwithstanding a few excruciating exceptions, far from living in a “borderless” world, we live for the most part in a *well-bordered world*; one in which humans have accepted the boundaries of jurisdiction and sovereignty and have gone on to trade, invest, travel and communicate across well-established political jurisdictions. The central claim of this paper is that we are able to do these things precisely where governments have accepted as settled the first order question of who is formally sovereign over what geographical space. The most permeable political boundaries in the world tend to be those that are taken for granted by both of the bordering political authorities, as well as by other governments in the region. The Canadian-US border comes to mind, as do borders between the countries of Western Europe. The razor wire separating Israeli and Palestinian settlements provides a tragic contrary example.

Political boundaries are human institutions. Just as people who are in love in most modern cultures tend to get married (which provides them with a set of clearly defined rights

²⁹ Using the coefficients from model 2 produces substantially the same results.

that love outside of marriage does not) countries who want to benefit fully from cordial relations settle their territorial disputes and go on to enjoy *joint gains* from the set of recognized rights that exclusive jurisdiction affords. I have framed these joint gains in this research in terms of lost trading opportunities. But they include as well the economic joint gains of investment, travel, tourism, as well as a host of positive externalities associated with friendly bilateral diplomatic relations with a neighbor. Of course, once territorial disputes turn violent the human suffering and the costs associated with the use of military force mount and potentially create humanitarian crises that far outweigh the economic considerations analyzed here. But I have been at pains to demonstrate that *even non-military disputes over territory* – by virtue of the uncertainty and ill-will they sow – entail costs that have rarely been explicitly considered.

A simple gravity model of bilateral trade shows these costs are likely to be significant. Ecuador and Peru likely missed out on hundreds of millions of dollars of bilateral trade due to their long-running controversy over a large tract of undeveloped Amazonian jungle. The same can be said for Argentina and Chile with their multiple disputes over the Beagle Channel, Patagonia, and the Ice Fields. Case studies suggest that in negotiating a settlement leaders in these countries were indeed cognizant of these costs, and viewed them as one reason for hastening agreement over the legitimate location of the international border (Simmons 1999). Colombia and Nicaragua are two countries that would do well to follow this lead, as they have lost a total estimated \$50 million in bilateral trade since their dispute over a cluster of Caribbean islands erupted in 1980. Perhaps this is one reason Nicaragua has recently decided to initiate settlement proceedings at the International Court of Justice.

The theoretical implications of these findings are profound. Realist lenses have provided the focus for the mainstream study of territorial disputes and their resolution in the

field of international relations. Territory is viewed in zero-sum terms, and theories about peace and conflict, disputation and resolution have revolved around traditional problems of dividing the territory, its strategic importance, its resource endowment, and other power considerations. Very few studies have considered the possibility of joint gains, and none have considered joint gains beyond joint natural resource exploitation.

Institutionalist theory provides a natural way to think about political boundaries. Governments create them and accept them as legitimate in order to overcome uncertainty, high transactions costs, and other negative externalities that flow from contentious territorial claims. Such a paradigm shift would lead us to investigate the extent to which growing opportunity costs (alongside more traditional considerations) provide an impetus for governments to settle their disputes, even turning at times, contrary to realist expectations, to authoritative third parties to render legally binding rulings (Simmons 2002). As regional trade intensifies, governments should be increasingly willing to settle their territorial disputes so as not to get left behind as the regional integration train pulls away from the station. Theories of the settlement of territorial claims have much to gain from the institutional literature on cooperation generally.

Latin American And Caribbean Trade with the Rest of the World (Exports)

Figure 1:

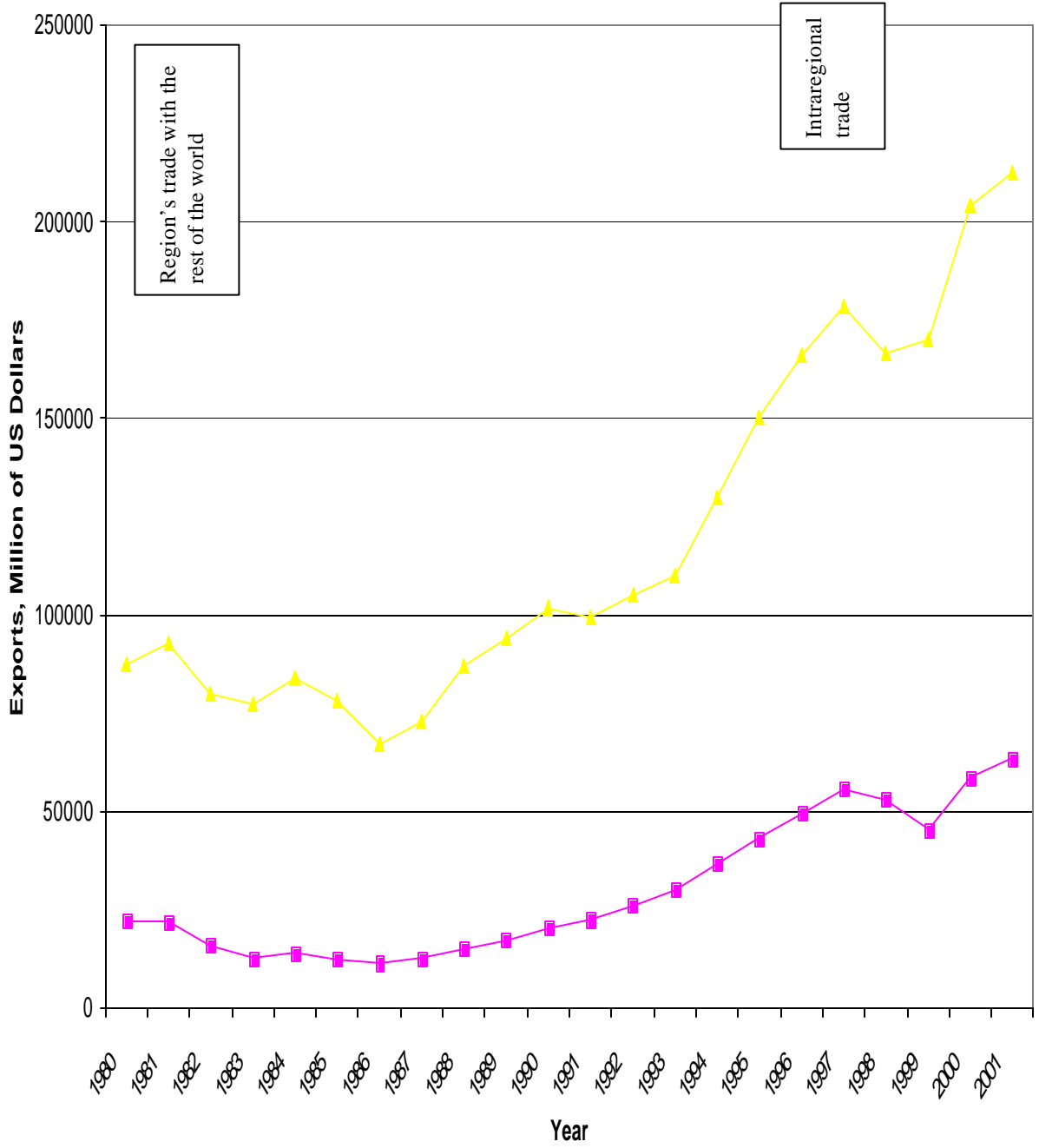


Table 1:
The effect of territorial disputes on bilateral trade
Result of a fixed effects gravity model
Coefficients (robust standard errors)

<i>Explanatory Variables:</i>	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
Log of combined GDP	3.009*** (.159)	2.931*** (.185)	2.93*** (.185)	3.05*** (.216)	2.67*** (.482)	2.56*** (.483)
Log of distance between capitals	-1.07*** (.231)	-1.036*** (.223)	-1.035*** (.221)	-1.034*** (.220)	-.857*** (.194)	-.653 (.406)
Territorial dispute	-.450** (.222)	-.492** (.202)	-.502** (.203)	-.535*** (.195)	-.459** (.196)	-.496** (.184)
General trade openness	--	.241* (.140)	.243* (.140)	.243 (.148)	.239* (.135)	.240* (.140)
Military dispute	--	--	.155 (.135)	--	--	.145 (.138)
Joint democracy	--	--	--	-.202 (.144)	--	-.289** (.138)
Year	--	--	--	--	.010 (.019)	.022 (.020)
Number of Obs.	1300	1243	1243	1243	1243	1243
R-squared	.887	.885	.885	.886	.885	.887

***significant at .01 level

**significant at .05 level

*significant at .10 level

Table 2:

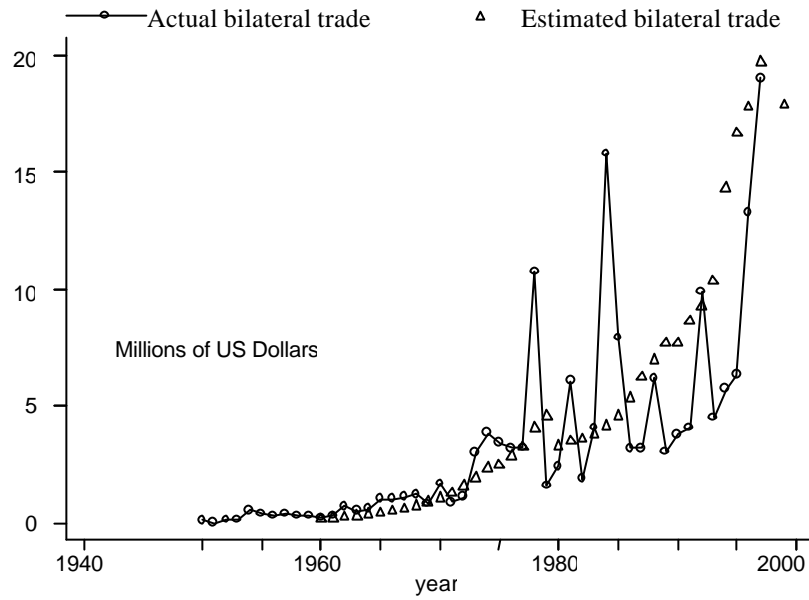
Estimated effects of territorial disputes on trade, 1967-2000#
(Yearly averages and cumulative totals, millions of US dollars)

	Date settled	Estimated Average Yearly Trade		Estimated Cumulative Impact of Disputing:	<i>Actual Average Yearly Trade</i>	
		Dispute:	No Dispute:		<i>Dispute:</i>	<i>No Dispute:</i>
Argentina-Uruguay	1974	154.51	242.32	614.67	33.6	506.50
El Salvador-Honduras	1992	52.30	82.03	718.25	12.96	138.70
Argentina-Chile	1995	573.54	899.49	9126.60	501.55	2730.44
Brazil-Uruguay	1995	440.15	690.29	7003.92	395.51	1550.67
Guyana-Suriname	1995	1.38	2.18	15.20	1.46	3.16
Bolivia-Chile	1996	40.12	62.92	663.32	43.84	174.70
Ecuador-Peru	1998	59.21	92.86	1043.15	74.94	182.67
Belize-Guatemala	unsettled	2.29	3.59	23.40	4.96	1.10
Colombia-Nicaragua	unsettled	4.88	7.66	50.04	8.90	2.75
Guyana-Venezuela	unsettled	32.67	51.24	603.8	22.52	--

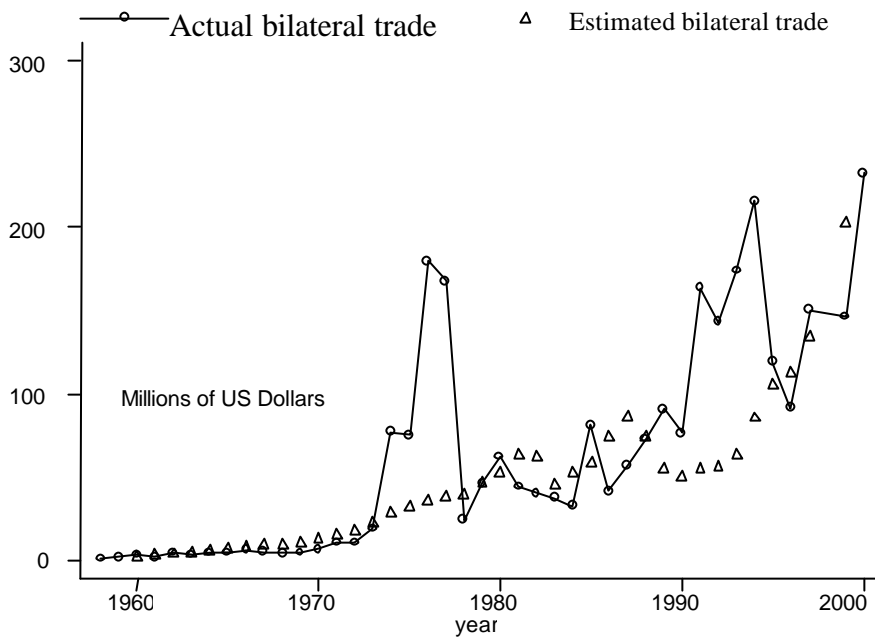
Estimates calculated based on table 1, model 1.

Figure 2: Comparison of Estimated and Actual Trade
 Predicted Values generated from Table 1, Model 1

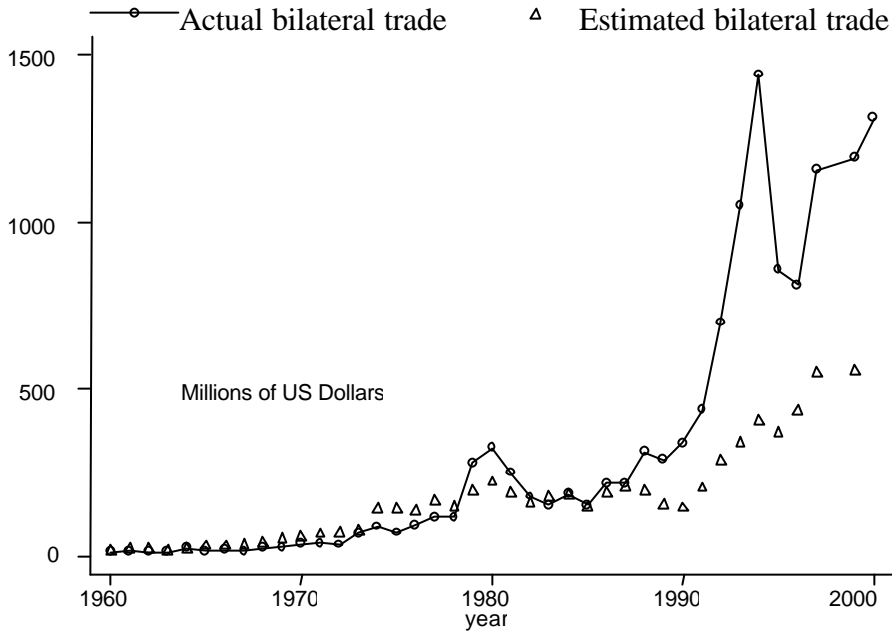
Colombia and Nicaragua:



Ecuador and Peru:



Argentina and Uruguay:



Argentina and Chile:

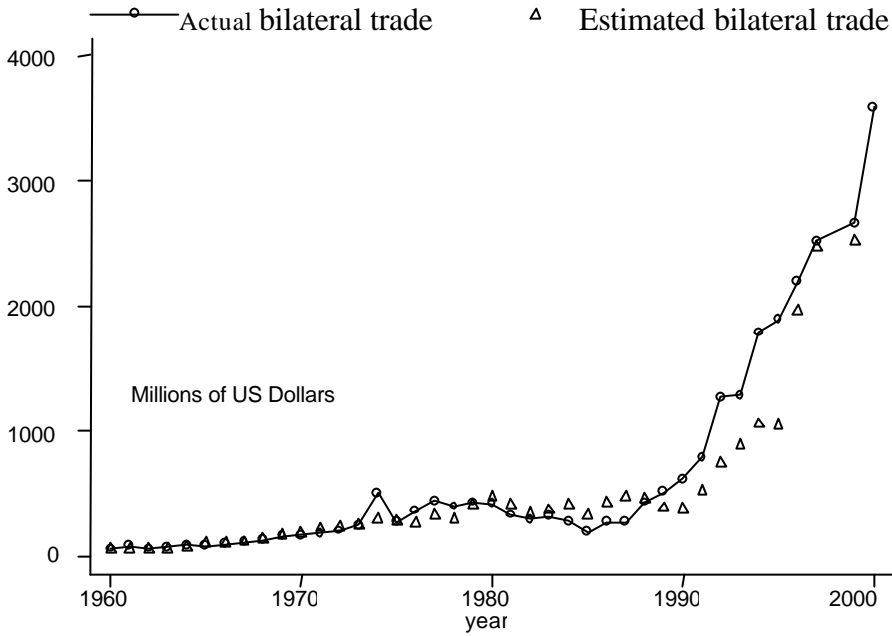
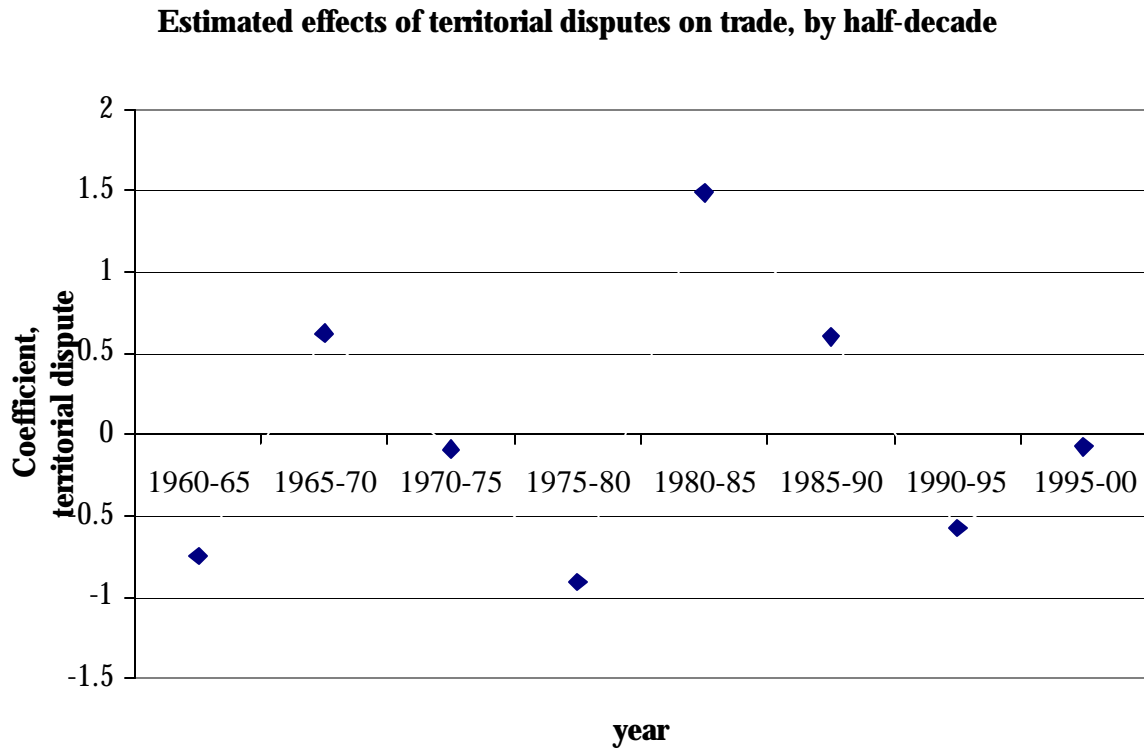


Figure 3



Appendix 1: Data

Dependent Variable:

Bilateral trade. The logged sum of imports into Country A originating from Country B plus the sum of imports into Country B originating from Country A, in millions of US dollars.

Source: International Monetary Fund, *Direction of Trade Statistics*, various years.

Explanatory Variables:

Combined GDP. The log of the sum of gross domestic product of country A and Country B, in millions of US dollars. Source: World Bank, *World Development Indicators*, CD rom.

Distance between Capitals. The log of the distance in kilometers between capital cities. Because it is not Brazil's major city, Brasilia was replaced with Rio de Janeiro. Source:

<http://www.indo.com/distance/index.html>.

Territorial Dispute. Whether (1) or not (0) incompatible claims over territory are made by government officials. For a discussion of the criteria see text and footnote 62. Source: Huth 1996. Updates to these cases were made using newspaper reports and various country-specific sources.

Military Dispute. Whether (1) or not (0) either government of the disputing pair engaged in the threat or use of force against the other member of the pair. Source: *Militarized interstate disputes (MIDs) dataset*.

Year. Calendar year.

Joint Democracy. Whether (1) or not (0) *both* countries in the pair score above a 5 on the polity score. Range: 10 (highly democratic) to –10 (completely non-democratic). Source: *Polity IV dataset*.

General Trade Openness. Log of the product of Country A's and Country B's total imports and exports as a proportion of each country's GDP. Source: World Bank, *World Development Indicators*.

**Appendix 2: Explanatory Variables:
Joint Democracy Dates and General Trade Openness**

<i>Country-pair:</i>	<i>Joint Democracy Dates for Each Country-pair under varying cut-off assumptions: #</i>		<i>General trade openness within each Country-pair</i>		
	<i>Polity cut-off 5:</i>	<i>Polity cut-off 7:</i>	<i>Mean</i>	<i>Std.Dev.</i>	<i>Range</i>
Argentina - UK	1973-75; 1983-2000	1983-1988	6.66	.29	6.12-7.19
Argentina - Chile	1990-2000	--	6.57	.48	5.67-7.24
Bolivia - Chile	1989-2000	1989-1998	7.83	.26	7.18- 8.27
Brazil - Colombia	1985-2000	1988-1994; 1999-2000	6.26	.25	5.60-6.88
Colombia-Ecuador	1979-2000	1979-94; 1999-2000	7.34	.32	6.70-8.04
El Salvador - Guatemala	1996-2000	--	7.72	.31	7.17-8.25
Belize - Guatemala	1996-2000	1996-1998	8.43	.20	7.91-8.67
Dominican Rep. - Haiti	1990, 1996-2000	--	7.61	.32	7.04-8.16
El Salvador - Honduras	1984; 1989-2000	--	8.27	.34	7.62-8.84
Guatemala - Honduras	1996-2000	--	7.93	.35	7.21-8.46
Guatemala - Mexico	1997-2000	--	7.04	.52	6.34-8.04
Belize - Mexico	1997-2000	--	8.40	.31	7.95-8.88
Colombia - Nicaragua	1990-2000	1999-2000	7.62	.46	6.64-8.54
Costa Rica - Nicaragua	1990-2000	1995-2000	8.48	.46	7.45-9.42
Honduras - Nicaragua	1990-2000	--	8.44	.55	7.11-9.43
Colombia - Panama	1989-2000	1989-1994	7.79	.18	7.44-8.06
Costa Rica - Panama	1989-2000	1989-1998	8.66	.20	8.35-9.05
Argentina-Paraguay	1992-2000	--	6.57	.57	5.77-7.44
Bolivia - Paraguay	1992-2000	--	7.83	.31	7.24-8.36
Brazil - Paraguay	1992-2000	--	6.67	.46	5.77-7.41
Bolivia - Peru	1982-1991	1990-1991	7.49	.27	6.94-8.04
Brazil - Peru	1985-1991	1990-1991	6.33	.24	5.79-6.75
Chile - Peru	1989-1991	1990-1991	7.34	.33	6.50-7.85
Colombia - Peru	1980-1991	1990-1991	6.93	.16	6.56-7.27
Ecuador - Peru	1980-1991	1990-1991	7.41	.23	7.01-7.82
Argentina - Uruguay	1985-2000	1985-1988	6.57	.29	5.97-7.13
Brazil - Uruguay	1985-2000	1988-2000	6.67	.24	6.13-7.10
Brazil - Venezuela	1985-2000	1988-1998	6.67	.24	6.13-7.10
Colombia - Venezuela	1966-2000	1974-1994	7.27	.26	6.59-7.65
Guyana - Venezuela	1992-2000	2000	8.86	.41	8.13-9.66
Brazil - Guyana	1992-2000	2000	6.42	.32	5.76-6.94
Brazil - Suriname	1985-2000	1988-2000	7.09	.616	5.37-8.09
Guyana - Suriname	1992-2000	2000	7.86	.59	6.05-8.54
Argentina - Bolivia	1983-2000	1983-1988	6.72	2.07	6.29-7.11
Argentina - Brazil	1985-2000	1988, 2000	5.56	.31	4.97-6.24
Bolivia - Brazil	1985-2000	1988-2000	6.82	.21	6.40-7.43

No country pairs jointly scored 9 on the polity democracy-autocracy scale

References:

- Abbott, Kenneth W., and Duncan Snidal. 2000. Hard and soft law in international governance. *International Organization* 54 (3):421-456, VII.
- Agnew, John A., and James S Duncan. 1989. *The Power of Place: Bringing Together Geographical and Sociological Imaginations*. Boston.
- Agnew, John A., and Paul Knox. 1994. *The Geography of the World Economy: An Introduction to Economic Geography*. New York: Routledge, Chapman, and Hall.
- Akaha, T. 1996. Russia and Asia in 1995: bold objectives and limited means. *Asian Survey* 36 (1):100-108.
- Anderson, James E. 1979. A Theoretical Foundation for the Gravity Equation. *American Economic Review* 69:106-116.
- Anderton, C. H., R. A. Anderton, and J. R. Carter. 1999. Economic activity in the shadow of conflict. *Economic Inquiry* 37 (1):166-179.
- Anderton, C. H., and J. R. Carter. 2001. The impact of war on trade: An interrupted times-series study. *Journal of Peace Research* 38 (4):445-457.
- Angell, Norman. 1911. *The great illusion; a study of the relation of military power in nations to their economic and social advantage*. 3d rev. and enl. ed. New York, London,: G. P. Putnam's Sons.
- Appadurai, Arjun. 1996. *Modernity at Large: Cultural Dimensions of Globalization*. Minneapolis.
- Barbieri, K., and J. S. Levy. 1999. Sleeping with the enemy: The impact of war on trade. *Journal of Peace Research* 36 (4):463-479.
- Barbieri, Kathryn, and Jack S Levy. 2001. Does war impede trade? A response to Anderton + Carter. *Journal of Peace Research* 38 (5):619-624.
- Bayoumi, Tamim, and Barry Eichengreen. 1995. Is Regionalism Simply a diversion? Evidence from the Evolution of the EC and EFTA. In *NBER Working Paper No. 2583*.
- Bergstrand, Jeffrey H. 1989. The generalized gravity equation, monopolistic competition, and the factor-proportions theory in international trade. *Review of Economics and Statistics* 71 (February):143-153.
- Biersteker, Thomas J. 2002. State, Sovereignty and Territory. In *Handbook of International Relations*, edited by W. Carlsnaes, T. Risse and B. A. Simmons. London: Sage.
- Blake, G H. 1992. International boundaries and territorial stability in the Middle East: an assessment. *GeoJournal* 28 (3):365-373.
- Brecher, Michael. 1993. *Crises in World Politics: Theory and Reality*. Oxford: Pergamon.
- Carlile, L.E. 1994. The changing political economy of Japan's economic relations with Russia: the rise and fall of seikei fukabun. *Pacific Affairs* 76 (3):411-432.
- Christerson, Brad. 1994. World trade in Apparel: an analysis of trade flows using the gravity model. *International Regional Science Review* 17 (2):151-66.
- Cooper, Richard. 1972. Economic interdependence and foreign policy in the seventies. *World Politics* 24 (2):159-181.
- Davis, D, D Weinstein, S Bradford, and K Shimpo. 1997. Using international and Japanese regional data to determine when the factor abundance theory of trade works. *American Economic Review* 87:421-446.
- Deardorff, Alan V. 1998. Determinants of bilateral trade: does gravity work in a neoclassical world? In *The Regionalization of the World Economy*, edited by J. A. Frankel. Chicago: University of Chicago Press.
- Engel, Charles, and John H Rogers. 1996. How Wide Is the Border? *The American Economic Review* 86 (5):1112-1125.
- Evenett, Simon J, and Wolfgang Keller. 1998. On theories explaining the success of the gravity equation. In *NBER Working Paper*.
- Frankel, Jeffrey A, Ernesto Stein, and Shang-Jin Wei. 1997. *Regional trading blocs in the world economic system*. Washington, DC: Institute for International Economics.
- Frankel, Jeffrey A, and Shanjin Wei. 1993. Continental Trading Blocs: are they natural or supernatural? In *NBER Working Paper No. 4588*.
- Gilpin, Robert. 1981. *War and change in world politics*. New York: Cambridge University Press.
- Gochman, Charles S, and Russell J Leng. 1983. Realpolitik and the road to war. *International Studies Quarterly* 27 (1):97-120.

- Goertz, Gary, and Paul F. Diehl. 1992. *Territorial Changes and International Conflict*. New York: Routledge.
- Goldstein, Moris, and Michael Mussa. 1993. The integration of world capital markets. Paper read at Changing Capital Markets: Implications for Monetary Policy.
- Green, Donald P., Soo Yeon Kim, and David H. Yoon. 2001. Dirty pool. *International Organization* 55 (2):441-468, U6.
- Grieco, Joseph M. 1988. Realist theory and the problem of international cooperation: analysis with an amended prisoner's dilemma model. *The Journal of Politics* 50 (3):600-624.
- Gupta, A. 1997. Issues of South Asia: geopolitics or geoeconomics. *International Studies* 34 (1):15-24.
- Hamilton, Carl, and L. Alan Winters. 1992. Opening up Trade with Eastern Europe. *Economic Policy* 14:77-117.
- Helliwell, John F. 1998. *How Much Do National Borders Matter?* Washington D.C.: The Brookings Institution.
- Helpman, E. 1984. Increasing returns, imperfect markets, and trade theory. In *Handbook of International Trade*, edited by R. Jones and P. Kenen. Amsterdam: North Holland.
- Helpman, E. 1987. Imperfect competition and international trade: evidence from fourteen industrial countries. *Journal of Japanese and International Economics* 1:62-81.
- Hensel, Paul R. 1999. Charting a course to conflict: territorial issues and interstate conflict: 1816-1992. In *A Roadmap to War: Territorial Dimensions of International Conflict*, edited by P. F. Diehl. Nashville: Vanderbilt University Press.
- Herz, John H. 1957. The rise and demise of the territorial state. *World Politics* 9:473-493.
- Hirschman, Albert O. 1945. *National Power and the Structure of Foreign Trade*. Berkeley: and Los Angeles University of California Press.
- Holsti, Kalevi J. 1991. *Peace and War: Armed Conflicts and International Order, 1649-1989*. Cambridge: Cambridge University Press.
- Huth, Paul K. 1996. *Standing Your Ground*. Ann Arbor: University of Michigan Press.
- Ireland, Gordon. 1938. *Boundaries, Possessions, and Conflicts in South America*. Cambridge MA: Harvard University Press.
- Ireland, Gordon. 1941. *Boundaries, Possessions, and Conflicts in Central and North America and the Caribbean*. Cambridge MA: Harvard University Press.
- Joseph, J.S. 1996. Cypress at the threshold of the European Union. *Mediterranean Quarterly* 7 (2):112-122.
- Kacowicz, Arie M. 1994. *Peaceful Territorial Change*. Columbia SC: University of South Carolina Press.
- Keohane, Robert O. 1984. *After Hegemony: Cooperation and Discord in the World Political Economy*. Princeton, N.J.: Princeton University Press.
- Kobrin, Stephen J. 1997. Beyond symmetry: state sovereignty in a networked global economy. In *Governments, Globalization, and International Business*, edited by J. Dunning. Oxford: Oxford University Press.
- Koo, Won W, and David Karemera. 1991. Determinants of World Wheat Trade Flows and Policy Analysis. *Canadian Journal of Agricultural Economics* 39 (3):439-55.
- Leamer, Edward E, and James Levinsohn. 1995. International trade theory: the evidence. In *Handbook of International Economics*, edited by G. M. Grossman and K. Rogoff. Elsevier: North Holland.
- Leamer, Edward E. 1974. The Commodity Composition of International trade in Manufactures: An Empirical Analysis. *Oxford Economic Papers* 26:350-374.
- Linge, G.J.R. 1995. The Kuriles: the geopolitical spanner in the geo-economic works. *Australian Geographical Studies* 33 (1):116-132.
- Linneman, Hans. 1966. *An Econometric Study of International Trade Flows*. Amsterdam: North-Holland.
- Lipson, Charles. 1991. Why are Some International Agreements Informal? *International Organization* 45 (4):495-538.
- Luke, Timothy W. 1991. The discipline of security studies and the codes of containment: learning from Kuwait. *Alternatives* 16 (3):315-344.
- Mackinder, Halford John. 1904. The geographical pivot of history. *The Geographical Journal* 23 (4):421-444.
- Mandell, Robert. 1980. Roots of Modern Interstate Border Disputes. *Journal of Conflict Resolution* 24.
- Marcusen, J, and R Wigle. 1990. Explaining the volume of north-south trade. *Economic Journal* 100:1206-1215.

- Matthes, Norbert. 1994. Allocation of Mobile Communication flows: from microeconomic demand theory to a gravity model. *Annals of Regional Science* 28 (4):395-409.
- McCallum, John. 1995. National Borders Matter: Canada-U.S. Regional Trade Patterns. *The American Economic Review* 85 (3).
- Mearsheimer, John. 1994-95. The False Promise of International Institutions. *International Security* 19 (3):5-26.
- Meyer, P.F. 1998. Russo-Japanese relations: opportunity for rapprochement? *Demokratizatsiya* 6 (2):363-379.
- Morgenthau, Hans. 1985. *Politics Among Nations: The Struggle for Power and Peace*. 6th ed. New York: Alfred Knopf.
- Morse, Edward. 1976. *Modernization and the Transformation of International Relations*. New York: Basic Books.
- Murphy, Alexander B. 1999. International law and the sovereign state system: challenges to the status quo. In *Reordering the World: Geopolitical Perspectives on the Twenty-first Century*, edited by G. J. Demko and W. B. Woods. Boulder: Westview Press.
- Murphy, Alexander B. 2001. Political geography. In *International Encyclopedia of the Social and Behavioral Sciences*, edited by N. D. Smelser and P. B. Baltes. Amsterdam: Pergamon.
- O'Brien, Richard. 1992. *Global financial integration : the end of geography*. New York: Council on Foreign Relations Press.
- Oguledo, Victor Iwuagwu, and Craig R MacPhee. 1996. Gravity Models: A Reformulation and an Application to Discriminatory Trade Arrangements. *Applied Economics* 24:107-120.
- Ohmae, Kenichi. 1990. *The Borderless World: Power and Strategies in the Interlinked Economy*. New York: Harper Business.
- Ohmae, Kenichi. 1995. *The End of the Nation State: The Rise of Regional Economies*. New York: Free Press.
- Polak, Jacques J. 1996. Is APEC a Natural Trading Bloc? A Critique of the 'Gravity Model' of international trade. *World Economy* 19 (5):533-43.
- Pollins, Brian M. 1989. Conflict, Cooperation, and Commerce: The Effect of International Political Interactions on Bilateral Trade Flows. *American Journal of Political Science* 33 (3).
- Poyhonen, Pentti. 1963. A Tentative Model for the Volume of Trade between Countries. *Weltwirtschaftliches Archiv* 90:93-99.
- Prescott, J.R.V. 1987. *Political Frontiers and Boundaries*. London: Unwin Hyman.
- Rose, Andrew. 1999. One money, one market: estimating the effect of common currencies on trade. In *NBER Working Paper No. 7432*.
- Rosecrance, Richard N. 1986. *The Rise of the Trading State: Commerce and Conquest in the Modern World*. New York: Basic Books.
- Rosecrance, Richard N. 1996. The rise of the virtual state. *Foreign Affairs* 75:45-61.
- Ruggie, John Gerard. 1993. Territoriality and beyond: problematizing modernity in international relations. *International Organization* 47 (1):139-174.
- Rumley, Dennis, and Julian V. Minghi. 1991. *The Geography of border landscapes*. London: Routledge.
- Schelling, Thomas C. 1980. *The strategy of conflict*. [Rev.] ed. Cambridge: Harvard University Press.
- Schofield, R. 1997. The last missing fence in the dessert: the Saudi-Yemeni boundary. *Geopolitics and International Boundaries* 1 (3):247-299.
- Senese, Paul D. 1996. Geographical Proximity and Issue Saliency: Their Effect on the Escalation of Militarized Interstate Conflict. *Conflict Management and Peace Science* 15:133-161.
- Simmons, Beth A. forthcoming. Forward Looking Dispute Resolution: Ecuador, Peru and the Border Issue. In *Escalation and Negotiation*, edited by I. W. Zartman and G. O. Faure.
- Simmons, Beth A, and Lisa Martin. 2002. International Organisations and Institutions. In *Handbook of International Relations*, edited by W. Carlsnaes, T. Risse and B. A. Simmons. London: Sage Publications.
- Simmons, Beth A. 1999. *Territorial Disputes and Their Resolution: The Case of Ecuador and Peru*. Washington DC: United States Institute of Peace.
- Simmons, Beth A. 2002. Capacity, commitment, and compliance - International institutions and territorial disputes. *Journal of Conflict Resolution* 46 (6):829-856.
- Sobel, Andrew. 1994. *Domestic Choices, International Markets: Dismantling National Barriers and Liberalizing Securities Markets*. Ann Arbor: University of Michigan Press.

- Stopford, John, and Susan Strange. 1991. *Rival States, Rival Firms: Competition for World Market Shares*. Cambridge: Cambridge University Press.
- Strange, Susan. 1996. *The Retreat of the State: The Diffusion of Power in the World Economy*. Cambridge: Cambridge University Press.
- Summary, Rebecca M. 1989. A Political-Economic Model of U.S. Bilateral Trade. *The Review of Economics and Statistics* 71 (1).
- Theophylactou, D.A. 1995. A 'German solution' for Cyprus's reunification or United Nations 'enforcement' of peace? *Mediterranean Quarterly* 6 (3):39-51.
- Timothy, D.J. 1995. Political boundaries and tourism: borders as tourist attractions. *Tourism Management* 16 (7):525-532.
- Tinbergen, Jan. 1962. *Shaping the World Economy: Suggestions for an International Economic Policy*. New York: Twentieth Century Fund.
- Vasquez, John. 1993. *The War Puzzle*. Cambridge: Cambridge University Press.
- Vasquez, John. 1995. Why do neighbors fight? Proximity, interaction, or territoriality. *Journal of Peace Research* 32 (3):277-293.
- Yarbrough, Beth V, and Robert M Yarbrough. 1994. International Contracting and Territorial Control: The Boundary Question. *Journal of Institutional and Theoretical Economics* 150 (1):239-64.
- Zacher, Mark. 2001. The territorial integrity norm: International boundaries and the use of force. *International Organization* 55 (2):215-250.
- .