

1-1-2013

Economic Agreements and Interstate Conflict: A Policy Substitution Model of Coercion

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ECONOMIC AGREEMENTS AND INTERSTATE CONFLICT: A POLICY
SUBSTITUTION MODEL OF COERCION

by

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For the Degree of Doctor of Philosophy in

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2013

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DEDICATION

To Kati, steadfast in spite of distance and lapse of time – just as she promised, and more than I deserve.

ACKNOWLEDGEMENTS

I owe far too much to far too many for their help and support in completing this project. While I cannot begin to repay in full the debts I have accumulated with these individuals, I hope this small token of my gratitude and appreciation will suffice as my first payment. Completing my dissertation would not have been possible without the excellent training and mentorship of my dissertation committee – Katherine Barbieri, Harvey Starr, Kirk Randazzo, Matthew Fuhrmann, and Phil Arena. Special thanks are due to Katherine Barbieri for her valuable feedback and willingness to work with me through all circumstances on my dissertation. Just as important as that, however, is her advice on professionalization, academia, and positioning myself to make a policy difference. In a similar vein, Harvey Starr served as my entrée into the true world of political science and knowledge generation through multiple courses on research design and international relations. I had a total of two international relations courses under my belt in my undergraduate and master’s program before coming to South Carolina. Needless to say, his patients and assistance in helping me learn core concepts and theories was invaluable.

I owe an enormous debt to Kirk Randazzo for, first, teaching me almost everything I know about research methods and, second, listening to my frustrations, concerns, and doubts through graduate school. He frequently made good on his promise to “not make it easy” for me. I would be truly disappointed if he had failed to live up to this promise. Matthew Fuhrmann’s constant optimism and encouragement on my various

projects were greatly appreciated at times when I tried desperately to downplay my research. I am again in incredible debt to Phil Arena, who must have the patience of a saint to help me through various iterations of my formal model. His contributions were invaluable in helping make my dissertation as technically sound as possible.

I am also indebted to the Department of Political Science at the University of South Carolina for funding and institutional support that allowed me to complete my PhD. Thanks are due to those in the department that graciously provided me feedback and assistance along the way. From the day I set foot on campus, Dan Sabia helped me in every way possible to grow and develop as a teacher and scholar. Likewise, Roger Coate, Jill Frank, and Robert Angel provided invaluable insight into critical thinking and classroom instruction that should be due every PhD student. Methodologically, David Darmofal and Lee Walker were of incredible help on multiple occasions. Lastly, allow me to thank Brenda Stevens, Tamara Gordon, Debby Tiemeyer, Pamela Mauldin, Tyler Bledsoe, and Janis Leaphart for their support over time. My first assignment as a graduate assistant was supporting the administration office, which allowed me to learn the critical contribution these individuals contribute to the department. Further, it is challenging to find a more cordial, friendly group to work with anywhere.

My colleagues and friends are equally represented in this document through their thoughts, ideas, and support. Nadia Jilani, Ashley Murph-Schwarzer, Brian Warby, Michael Martindale deserve special note as members of the Dissertation Working Group, which provided invaluable feedback for early stages of the project. Beyond that, these individuals, along with Douglas Page, Alan Tauber, Charles Wu, T.J. Kimmel, Ally Reckendorf, and numerous others pushed me to do better, helped me to put things in

perspective, and restored my sanity through various mechanisms. Outside of my graduate program, several family and friends deserve mention for their support and seemingly genuine interest in what it is I did while at South Carolina. My parents, Dan and Jane, instilled in me the love of learning from an early age. While they may not have understood my decision to get a PhD, they certainly supported me through thick-and-thin. Likewise, Josh Anderson, Anthony Marshall, Becky Marshall, Josh Singleton, John Watson, and Penny all provided incredible respite from the daily barrage of insecurities, concerns, fears, and troubles that accompany graduate school. Their unfailing support, which I called upon time and time again, can never be repaid. I do not think they know just how valuable their help was through this and many other times.

Lastly, and unquestionably most importantly, my wife Kati made this achievement – to include the dissertation and graduate school – possible for me. Someday I hope to understand the degree of selflessness and patience it takes to say “ok, let’s do it” when confronted with a spouse who wants to go to graduate school. She was, and continues to be, an unwavering source of encouragement at times when I doubt my abilities, choices, or goals. Her willingness to leave a career, watch me leave my career, move to a state she had never been to, and put up with the demands of a student is beyond my comprehension. While I can never truly understand her sacrifice for my dreams, and likely can never return it kind, I hope she understands the depth of love and devotion I have for her and that while the dream is mine, I live it for her.

ABSTRACT

Economic integration agreements – also called preferential trade agreements or regional trade agreements – have dramatically expanded in scope since World War II. While the proximate goal of economic integration is to increase commercial exchange between member states, there are strong reasons to believe agreements affect security relations as well. In particular, by increasing interdependence between member states through trade and investment, economic agreements increase the opportunity cost of coercion. However, they simultaneously marginalize commercial ties between agreement members and the outside world and exacerbate relative gains concerns through trade diversion. Hence I argue that while conflict between agreement members likely abates, it may become more likely between members and non-members.

Furthermore, in considering the impact of economic agreements on security relations, I take a broad view of the interstate conflict process that includes multiple coercive strategies. Specifically, I consider how agreements influence the use of economic sanctions and military force as substitutable coercive strategies in disputes. Using the logic of policy substitution, I develop a formal bargaining model capturing a state's decision between sanctions and military force. I draw several implications from the formal model. First, asymmetric trade relations between agreement members results in the use of military force by dependent states and economic sanctions by autonomous ones. Second, symmetric trade relations between agreement members result in economic

sanctions. Finally, members and non-members of agreements are more likely to use military force in disputes.

I evaluate these arguments using statistical test of dyad years from 1970 to 2001. Ultimately, I find the influence of agreements is highly contextual and based on economic relationships between states. Conditional support is found for the idea that economic agreements reduce conflict between members and increase it with non-members provided certain economic conditions exist. However, other economic relationships can actually increase conflict between states in the same agreement. Furthermore, I do not find support for the argument that economic agreement members substitute economic sanctions for military force as strategies in disputes. Conditional support does exist for a substitution effect between members and non-members, however.

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CHAPTER 1

INTRODUCTION

Economic integration agreements – also called preferential trade agreements or regional trade agreements – are powerful foreign policy tools for many states. By lowering commercial barriers, agreements increase trade and investment among member states. As a consequence, the number of extant agreements now numbers over two-hundred individual arrangements with many more in various stages of negotiation. The proliferation of agreements is accompanied by increasing complexity. Many economic agreements now incorporate external trade policy harmonization and factor mobility in addition to standard trade liberalization. In addition to increasing commercial exchange, states also gain from agreements by increasing their bargaining power in multilateral negotiations and signaling political commitment to particular policies. Economic integration, therefore, appears to be a cornerstone of commercial policy for states.

Rhetoric from scholars and politicians alike further suggests that commercial integration is as valuable for peace and security as it is for economic prosperity. In the late nineteenth century, Vilfredo Pareto advocated customs unions as pacifying mechanisms in Europe (Machlup 1992, 146). John Maynard Keynes echoed this sentiment after World War I, believing that integration had the potential to tie European states together politically and prevent the devastation of war (Keynes 1920, 249). French minister Robert Schuman, when advocating for the European Coal and Steel Community, firmly believed in economic cooperation as a means to peace:

“By pooling basic production and by instituting a new High Authority, whose decisions will bind France, Germany and other member countries, this proposal will lead to the realization of the first concrete foundation of a European federation indispensable to the preservation of peace.” (Schuman 1950)

Yet economic agreements do not exist in a vacuum. Economic integration can profoundly affect the welfare of non-member states by altering trade patterns and investment decisions. Regional economic agreements – by necessity – are discriminatory institutions that incorporate a discrete number of states to maximize economic gains. By doing so, economic agreements may implicitly cordon off areas of the global economy and foster acrimonious commercial relations. In a process called trade diversion, for example, trade shifts from more- to less-efficient producers due to the unequal removal of trade barriers and tariffs (Viner 1950, 43; Krugman 1993, 384-385). Indeed, the concern over the trend in regional trade agreements prompted then Director General of the World Trade Organization (WTO) Supachai Panitchpakdi to comment:

"[Regional integration] threatens the primacy of the WTO, and foreshadows a world of greater fragmentation, conflict, and marginalization, particularly of the weakest and poorest countries." (Panitchpakdi 2002)

Furthermore, economic integration involves strategic decisions about which states are included and excluded from membership. Often these decisions are made based on security goals. Many states integrate economically to resist aggressive states or particularly strong threats they may face. For example, the Gulf Cooperation Council (GCC), with a stated goal of developing a common market, was created in part due to concern over the Iran-Iraq war. As Saudi Arabia’s Interior Minister Prince Nayif ibn Abd al-Aziz indicated during one of the organizations meetings in 1982:

“Undoubtedly, the GCC has made great progress in all fields in a short period of time. Undoubtedly, the security field which all of you represent here is of paramount importance in the cooperation of GCC member states.” (Ramazani 1988)

Given that economic agreements are both a component of an overall security strategy for some states and impact the economic power of states, it is prudent to consider the overall impact they have on conflict between nations. This project, in turn, examines the relationship between economic institutions and interstate conflict in order to evaluate their ability to generate peace. Specifically, I look to inform the following question: Do formal economic integration agreements influence interstate conflict?

While informed by a broad literature on trade and conflict, many issues concerning the broader security implications of economic agreements have yet to be addressed. In particular, I consider three important aspects of economic agreements and commercial relations in general that receive comparatively little attention. First, where contemporary studies of economic interdependence and conflict assume the gains from trade are valued equally, I attempt to contextualize economic relations between states by considering more carefully the structure of commerce. Economic agreements vary in terms of scope and depth, for example, in ways that likely influence their pacifying effects. Likewise, asymmetrical relations between agreement members (or non-members) may further color their interactions. Second, I consider the seemingly contrasting effect economic agreements have on intra-agreement and extra-agreement relations. While the economic effects of agreements may increase interdependence between members, thereby potentially pacifying relations, it may simultaneously reduce it with states excluded from the agreement. Consequently, states forming economic agreements may face a tradeoff between intra-agreement peace (i.e., between member states) and extra-agreement conflict (i.e., between members and non-members).

Finally, I consider more carefully the causal mechanisms behind the influence of commerce on conflict. In particular, I evaluate the belief that economic sanctions can substitute for military force as coercive policies. In many ways economic agreements provide a natural test for this oft-held belief. States in an economic agreement implicitly signal their economic interdependence and the salience of trade relations with other member states. Given this, if economic sanctions truly substitute for military conflict, agreement members are theoretically the best positioned to substitute sanctions for military force.

In this project, I specifically argue that economic agreements influence the relative utility of coercive policies among those states both included in and excluded from membership. Economic agreements foster greater intra-agreement interdependence by increasing trade, promoting investment, and providing intangible benefits to members. This, in turn, likely encourages the use of economic sanctions to address conflicts between members instead of military force. On the other hand, the process of economic integration likely reduces or limits interdependence between members and non-members of agreements. Economic sanctions are likely less effect, promoting the use of military force to address conflicts. Consequently, while some relationships reduce overall conflict and violence, others may actually increase it by limiting the effective use of alternatives like economic sanctions.

1.1 Layout of the Dissertation

My dissertation proceeds as follows. Chapter 2 synthesizes the commercial and institutional effects of economic agreements with their political implications per the extant literature. In Chapter 3, I develop a theory of economic agreements and interstate

conflict. My argument is relatively straightforward. Economic agreements increase economic interdependence between member states while simultaneously reducing relative interdependence with non-member states. This process has different implications for intra- and extra-agreement relations. Interdependence between agreement members, first, is likely a facilitator of peaceful intra-agreement relations. The marginalization of ties between members and non-members, however, likely exacerbates tensions and increases extra-agreement conflict.

The implications of my theory, however, go beyond simply the initiation of conflict and extend to the means by which states pursue conflict. To this end, I develop a formal bargaining model considering a state's choice between economic sanctions and military force to coerce adversaries. The model begins with a challenger demanding concession from a defender, who then either accepts or rejects. Given the defender rejects the demand, the challenger then decides whether to use economic sanctions or military force to compel the defender to acquiesce. My analysis of the model indicates, somewhat intuitively, that states select the policy with which they are best suited to compel the defender. States in a dominant economic position are more likely to use economic sanctions while more dependent states are more likely to use military force. In terms of my argument concerning economic agreements, the implications once again are different for intra- or extra-agreement relations. Interdependence between members of the same agreement likely increases both the effectiveness of economic sanctions and cost of military force, encouraging the use of the former. When members engage in conflict with non-members, however, economic sanctions are less likely to be effective

given the lower degree of interdependence. The result could be elevating military force to a first-best option when conflicts arise.

I test the implications of my theory and formal model using a multi-method approach. Chapter 4 describes in detail a research design which allows me to appropriately capture the complex details of economic agreements and their influence on both conflict and the strategies states employ. In Chapter 5, I examine the effect of economic agreements and the trade relationships they influence on the onset of both economic sanctions and military force between two states in the same economic agreement. I also offer an extended illustration of some plausible causal mechanisms in my analysis using the relationship between Uganda and Kenya, both members of the East African Community. I conduct a second large-n analysis in Chapter 6 testing my argument that economic agreements exacerbate conflict between members and non-members as interdependence is limited. I evaluate the onset of economic sanctions and military force based on economic agreements and trade relationships between two states where either only one is in an agreement or both states are in separate agreements. In the concluding chapter, I summarize my argument and consider the policy implications of my analysis.

1.2 Defining Formal Economic Agreements

Before proceeding with my analysis, however, a brief definition and discussion of formal economic agreements is warranted. A formal economic agreement as I use it refers to any institution removing barriers to commercial exchange with discrete membership. In general, this is broadly similar to the conventional use of regional trade agreements. The World Trade Organization defines a regional trade agreement as a

territory that maintains separate tariffs or regulations for a “substantial part of the trade of such territory” (WTO 1994, Article XXIV). In practice, the concept is stretched somewhat by the states that employ such arrangements such that a “substantial part” of trade is not in fact covered by agreements (an issue I address empirically). Two key factors therefore define my use of economic agreements. First, the arrangement must in some way reduce barriers to commerce between states so as to increase economic interactions between members. Second, membership in the agreement must be discrete and non-universal. That is, global institutions like the WTO and its predecessor the General Agreement on Tariffs and Trade (GATT) are not considered in my theory or analysis. While the GATT and WTO reduce barriers to commerce, their nearly universal membership provides a baseline of economic openness in the world. My use of economic agreements, to this end, captures institutions that go beyond global standards to capture unique, discrete relationships between groups of states.

Economic integration agreements also vary in scale and scope. Balassa (1962) first developed a comprehensive economic theory of integration as a *process*. He identifies five stages of integration in increasing order from free trade agreements to customs unions, common markets, economic unions, and total political integration. Subsequent authors have modified Balassa’s taxonomy for particular nuanced purposes (see Crowley 2001 for a summary of taxonomy). Each level is differentiated by additional layers of policy convergence and depth of integration. In the most basic, the distinction between levels is the mix of negative and positive integration initiatives, where negative integration is simply the removal of barriers and not the creation of new mechanisms. Shallow agreements, such as free trade agreements, focus largely on

negative integration by removing impediments to trade. Deep agreements, in contrast, remove barriers as well as creating common initiatives. Customs unions, for example, incorporate free trade *and* the harmonization of external trade policies. Consequently, the taxonomy I adopt in my analysis takes into account the incremental depth of economic integration. A summary of the levels of integration and the policies they imply I use in my analysis, based largely on Balassa's original taxonomy, are included in Table 1.1.

1.3 The Political Salience of Economic Agreements

Understanding how economic agreements influence conflict between states is important given trends in the global economy today. As noted, economic agreements are incredibly popular tools of commercial policy for states in the contemporary world economy. Starting from a base of almost zero following World War II, the number of extant integration agreements grew to include well over two-hundred unique arrangements. It is not an exaggeration to say that, with only a few exceptions, every state in the world today is party to at least one economic agreement. Agreements are now also more diverse in membership, broader in scope, and increasingly deep. While most early agreements were restricted to European states, the proliferation of new states following decolonization encouraged participation in the developing world. Figure 1.1 illustrates the popularity of economic agreements by plotting the cumulative number of economic agreements in force from 1950 to 2011. Evident in Figure 1.1 is the exponential growth of agreements since the end of the Cold War. Between 1992 and 2011, states formed between ten and eleven agreements annually on average. The fifteen agreements added in 2011 indicate the popularity of economic agreements is unlikely to wane in the coming years.

The quantitative increase in economic agreements has also complicated commercial relations between states. Crisscrossing and overlapping agreements create a more complex system of trade regulations for businesses to navigate. As Bhagwati (1995, 2008) famously noted, there now exists a “spaghetti bowl” of trade deals that subject the same commodities to different tariffs, quotas, and rules of origins. The ultimate result of such dynamics may, on one hand, expand commerce given the lower barriers to trade. On the other hand, the complexity Bhagwati notes may stymie global trade by creating a chaotic system of competing preferences that increases uncertainty and suboptimal outcomes. Indeed, Baldwin (1993) argues that the mere creation of a trade agreement between a discrete number of states encourages the formation of other agreements. States concerned about competition from the new agreement may seek to form agreements to compensate for this implicit market discrimination. Hence, agreements have a domino effect where agreements are formed in defensive fashion. Consequently, given their popularity and potential to influence global commerce, economic agreements are an important topic of consideration in international relations today.

In addition to the economic consequences of agreements, it is important to understand their influence as part of state’s overall security strategies. While the direct economic benefits of economic integration agreements are the most obvious motivation for their popularity, a number of political incentives underlie most arrangements. Indeed, some go as far as to state the fundamental motivations of *all* economic agreements to be political. In the words of Ali El-Agraa:

In reality, almost all existing cases of economic integration were either proposed or formed for political reasons even though the arguments put forward in their favor were expressed in terms of possible economic gains. (El-Agraa 1997, 34)

Perhaps the most basic political motivation to form an economic agreement is to underpin a broader security arrangement. Schiff and Winters (1998), notably, identify several security-based motivations for regional integration. First, states may seek economic integration to politically bind member states. As the anecdotal quotes at the beginning of this paper indicate, policymakers often turn to economic agreements to achieve security goals. European integration, as noted, was pursued largely for security goals. Likewise, Argentina and Brazil sought economic integration to quell tensions between the two countries and focus on democratic consolidation (Schiff and Winters 1998). Former U.S. Secretary of State Cordell Hull also advocated economic integration as a means to pacify interstate relations (Hull 1948). Second, although the main goals of agreements are economic in nature, many also include a component addressing external security and foreign policy threats. The South African Development Coordination Conference (SADCC) was formed in 1980 specifically to reduce states' material dependence on South Africa. By doing delinking their economies from South Africa, member states (Angola, Botswana, Lesotho, Mozambique, Swaziland, Tanzania and Zambia) sought to both resist pressure from South Africa and actively combat the Apartheid regime by economically isolating the country. The Association of Southeast Asian Nations (ASEAN) likewise was formed in 1967 to resist external powers. Of particular concern to ASEAN founders was the factious regional economy that opened them to manipulation by the competition between the United States and Soviet Union. Consequently, one of ASEAN's core objectives is "... [to] ensure [states] stability and security from external interference in any form or manifestation..." (ASEAN 1967). It

is important to subject the beliefs of policymakers to empirical evaluation given the relatively common belief economic agreements are instruments of peace between states.

1.4 Contributions

My research makes several noteworthy contributions to both the scholarly study of political science and potential public policy. First, I contribute to and expand the body of literature on economic interdependence and conflict. In some ways my analysis is a critique or refinement of the mainstream belief that interdependence has a linearly pacifying effect on interstate conflict. The assumption made by most studies linking interdependence with peace is that trade exclusively results in positive gains. That is, the only way interdependence can increase conflict is if little interdependence exists. Such an assumption may not be warranted, however, as it captures only the vulnerability of states to disruptions in trade. While both states may be vulnerable, one may be more sensitive to disruptions such that it is less able to adapt policies to minimize damage from the disruption (Keohane and Nye 1977; Richardson and Kegley 1980). Indeed, if the terms of trade decidedly favor one state in the trade relationship, it is unlikely they view interdependence similarly.

My argument lends support, most importantly, to the belief held by Barbieri (1996, 2002), Grieco (1988, 1993), and others that the structure of trade relations is an important determinant of their influence on conflict. That is, I consider more so *when* and in what ways economic relations influence conflict and not simply *if* they do so. This line of inquiry has implications for policymakers as well. On one hand it directly informs decisions to pursue close economic relations between states as a pillar of or compliment to security policy. This is particularly useful for economic agreements primarily pursued

for security goals (e.g., the European Coal and Steel Community). It is also helpful for security agreements that contain an economic component. While the military alliance may intend to draw states closer together, it is possible economic frictions brought on by openness and competition could drive them apart. On the other hand, it broadly informs trade and economic policy by highlighting the potential political consequences of economic policy decisions. That is, economic agreements that do not specifically touch on security goals may nonetheless impact foreign policy decisions.

Second, my analysis addresses a generally neglected area of international relations. Specifically, how might the existence and operation of limited-membership international institutions influence states excluded from membership? While copious research explores integration and conflict between members, relatively little considers how institutions affect non-members. State decisions to seek integration are strategic choices that necessarily exclude certain parties. It follows, therefore, that institutions may have as profound consequences for non-members as they do members. I provide a piece of this puzzle in my analysis.

Third, I consider the empirical validity of policy substitution in conflict scenarios. Sanctions have long been posited as means to prevent deadly conflict. Woodrow Wilson firmly believed in the power of economic pressure to avoid conflicts like World War I:

“A nation boycotted is a nation that is in sight of surrender. Apply this economic, peaceful, silent, deadly remedy and there will be no need for force. It is a terrible remedy. It does not cost a life outside the nation boycotted, but it brings pressure upon the nation that, in my judgment, no modern nation could resist.” (Hufbauer, Schott, and Elliot 1990).

His sentiment is carried out in practice by notably the United States, which uses sanctions more often than any other country as a tool of foreign policy. However, while economic sanctions have long been posited as alternatives to war, few studies bring empirical

results to bear. While sanctions may be alternatives to war, it is equally valid that they are utilized in different foreign policy roles that do not warrant the use of military force. Furthermore, the majority of sanctions literature is rightly focused on their effectiveness and consequences. Understanding the consequences of sanctions, however, requires an understanding of the circumstances in which states employ sanctions. That is, the effectiveness of sanctions may be conditioned on the type of engagement. Sanctions may be more or less effective depending on whether they are used to avoid conflict or not. If they are indeed substitutable policies, economic agreement members are the most likely group to do so given their formal interdependence and ready-made institutional mechanisms. This contribution has important consequences for policy in particular, given the popularity of economic sanctions as conflict resolution tools today. I consider in this analysis some of the conditions under which economic sanctions are more or less likely to be adopted by states.

Overall, my research addresses the political ramifications of one of the most noteworthy trends in international political economy over the past fifty years. Economic agreements have expanded in scope and scale such that nearly every economy in the world is now formally linked to at least one other. Relatively little scholarly attention has been paid, however, to the broad security consequences of agreements. Through my dissertation, I address this gap and help inform trade and economic policy by considering how the structure of economic relations influences conflict behavior. If it is the case, as I argue, that economic agreements reduce conflict among members but increase it with non-members, states entering into economic agreements face a tradeoff between intra- and extra-agreement security. Understanding this tradeoff will ultimately help states

determine the linkages between economic and security policy, thereby helping improve efforts in both arenas.

Table 1.1: Levels of Economic Integration

	Partial Scope Agreement (PSA)	Free Trade Area (FTA)	Customs Union (CU)	Common Market (CM)	Economic Union (EU)
Reduction in Trade Barriers	X	X	X	X	X
Elimination of Trade Barriers		X	X	X	X
Creation of a Common External Trade Policy			X	X	X
Free Movement of Labor and Capital				X	X
Coordination of Domestic Economic Policies					X

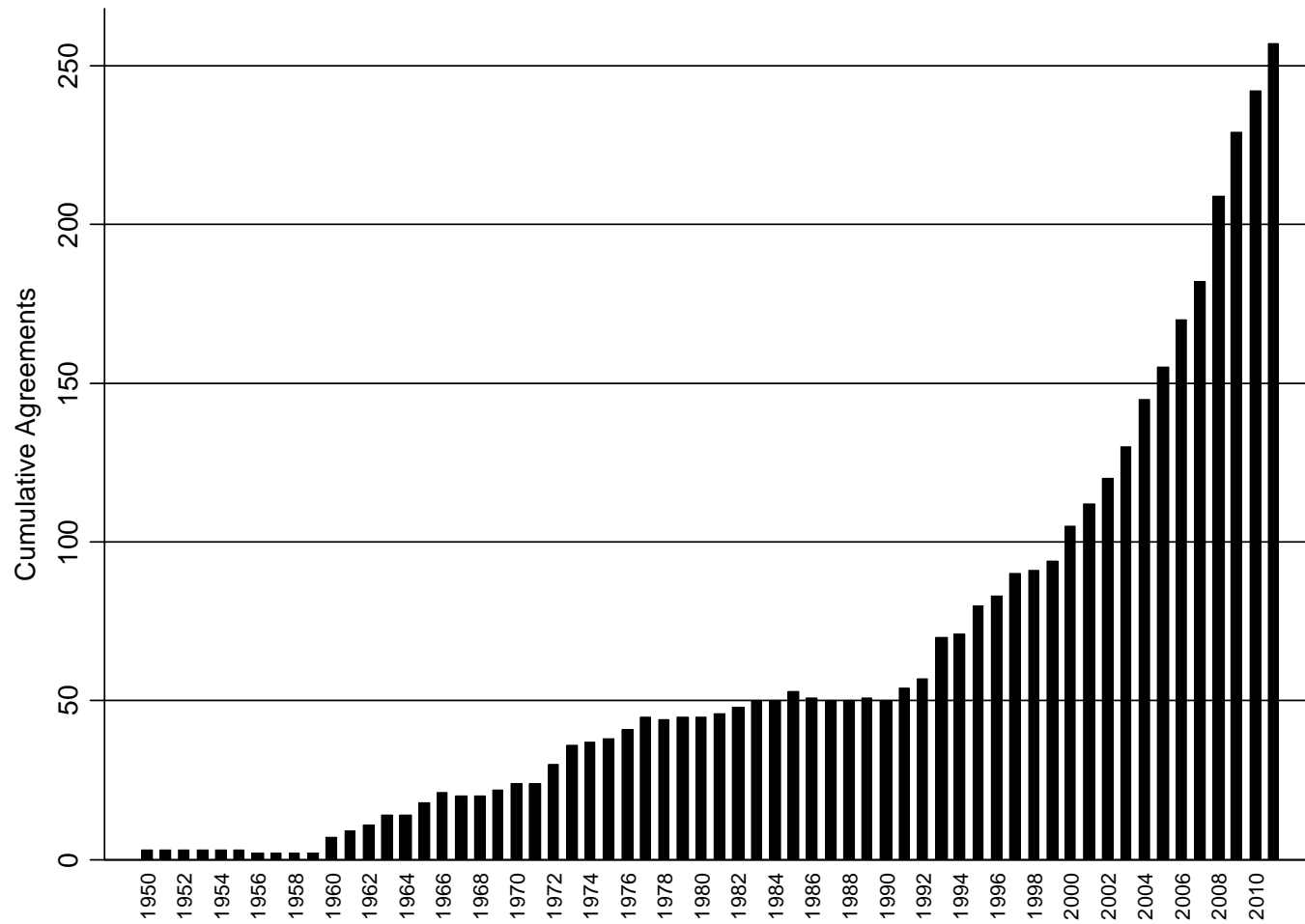


Figure 1.1: Growth in Economic Agreements 1950 – 2011

CHAPTER 2

ASSESSMENT OF RELEVANT LITERATURE: INTERDEPENDENCE, CONFLICT, AND THE FOUNDATIONS OF ECONOMIC AGREEMENTS

The research question I put forward is firmly grounded in the literature on economic interdependence and conflict, but also includes other research areas, given the formal nature of economic agreements. That is, economic agreements are international organizations that carry a temporal aspect related to the codified nature of association between member states. I proceed in this chapter as follows. First, I review and synthesis the extant literature on economic interdependence and conflict. Second, stemming from the interdependence and conflict debate, I evaluate the use of economic sanctions as a tool to achieve foreign policy goals and their substitutability with military force as coercive options for states. Third, I consider the political motivations and consequences of economic agreements from primarily a neo-functionalist perspective. Fourth, given the literature on economic interdependence and conflict, I explore the economic and political consequences of economic agreements for member states. Fifth, given the discussion of prior research, I contextualize the extant literature on economic agreements and interstate conflict. Finally, I consider gaps in this extant literature as it relates to my particular research question.

2.1 Economic Interdependence and Conflict

Economic agreements are naturally institutions designed to increase commercial interaction between member states. As such, their influence on conflict is primarily

informed by the broad literature on economic interdependence and conflict. Connections between commerce and conflict span centuries and are most often associated with enlightenment philosophers. In particular, Immanuel Kant believed economic interdependence reinforced legal systems and socialized states to prefer cooperation rather than conflict (1991 [1795]). Empirical assessments of Kant's general claims, however, assume more varied causal mechanisms. The line of inquiry most in line with Kant's original thoughts holds that trade may pacify states through a socialization process that encourages the acquisition of resources through exchange rather than conquest (Keohane and Nye 1977; Rosecrance 1986; Hegre 2000). Economic interdependence, furthermore, improves communication and conflict mediation mechanisms such that conflicts between interdependent states are resolved peacefully (Mitrany 1965; Haas 1964; Stein 1993; Doyle 1997). War is, therefore, not required between interdependent states, as they have alternative means of acquiring resources and resolving disputes.

The most developed branch of the liberal peace holds that trade between nations confers tangible, material gains that provide incentives to avoid conflict. Eliminating the flow of goods and services between states potentially sacrifices gains in aggregate welfare. Trade therefore reduces conflict through opportunity costs inasmuch as trade is disrupted by war (Polachek 1980, 1992; Dorussen 1999; Russett and Oneal 1997; 1999a; 1999b; 2001; Benson 2004). The opportunity cost argument is criticized on several grounds, however. Gartzke, Li, and Boehmer (2001) argue that opportunity costs are insufficient to deter conflict. Using a bargaining model, the authors demonstrate that opportunity costs simply increase the demand a challenger makes. That is, if the defender derives benefits from its economic relations with the challenger – and the

challenger is aware – it simply demands more in pre-war bargaining. Interdependence, therefore, is subsumed in the bargaining process (Garzke, Li, and Boehmer 2001, 400).

Second, Barbieri and Levy (1999, 2004) challenge the fundamental assumption of studies linking trade and conflict by testing whether conflict actually does disrupt trade. Although data availability limits their sample to seven dyads, the authors find little evidence to support the notion that war interrupts trade flows. There is ambiguous evidence that trade drops initially in response to war and no evidence to suggest that war inhibits future trade. In a later work the authors describe more fully the logic of trading with enemies in times of war, including systemic relative gains concerns, the alienation of neutrals in warring states, and dependency on trade taxes for war efforts (Barbieri and Levy 2004). Anderton and Carter (2001) present a rebuttal to Barbieri and Levy, however, by focusing on the impact of major power wars on trade. They find evidence that major power wars – and non-major power wars to a less extent – do reduce trade between combatants. Studies considering the impact of war on trade suffer from several problems, however, including data availability, limited sample size, and selection bias (Barbieri and Levy 2001). Consequently, the exact impact of military conflict on trade is ambiguous at best.

Two additional veins of research explore economic exchange beyond trade relationships. One specifically considers capital flows between states as inhibitors of conflict. Foreign direct investment (FDI) provides tangible benefits to states by increasing physical and human capital stocks which, in turn, are jeopardized through interstate conflict (Souva 2002; Souva and Prins 2006; Gartzke 2007). Furthermore, FDI provides private information that reduces uncertainty in the bargaining stages of war-

initiation (Gartzke, Li, and Boehmer 2001). Threats made by interdependent states are more credible given the potential losses they may incur. A final strain of research by Brooks (1999) argues that the geographic diffusion of production, expansion of multinational corporations, and shift to knowledge-oriented economies renders conquest ineffective in capitalizing on economic assets. Simply put, states cannot utilize what they conquer because of fractious production chains, the intangible nature of economic value based in knowledge, and disciplining role of corporations.

While the preponderance of studies conclude that economic interactions reduce conflict, a dissenting body of research finds the opposite effect of trade on conflict. The counter-argument to the liberal peace holds that asymmetric patterns of exchange encourage states to view commercial flows in terms of relative gains. A state achieving greater wealth or increased productivity from an economic agreement may translate its new-found advantage into military power to be used against the other (Barbieri 1996, 2002; Gilpin 1981; Gowa 1994; Grieco 1988; Grieco 1993). Furthermore, a state may simply develop concern about the extent to which they depend on a rival for economic viability. Reliance on another state for goods and/or markets is in and of itself a form of dependence exogenous to relative gains concerns. Although levels of trade may be relatively equal, each state is still vulnerable to disruptions in the relationship. Rather than interdependence, economic integration may foster simple dependence or the perception thereof in both states (Barbieri 1996, 2002; Mansfield and Pollins 2001, 836; McMillan 1997, 41). Consequently, vulnerabilities implied by dependency may encourage more aggressive actions in the security arena to compensate for strategic imbalances (Gilpin 1981; Liberman 1996; Mearsheimer 1990; Mearsheimer 1994).

Alternatively, Crescenzi (2003a, 2003b) argues that the constraining influence of interdependence depends on each state's exit costs. States that have many alternative options for import or export are not truly interdependent, as they can easily avoid the cost of conflict as it manifests in lost trade. Asymmetric exit costs tend to yield limited conflict, as the weaker state lacks bargaining leverage. Symmetrically low exit costs are most likely to escalate to militarized conflict.

Empirically, Barbieri (1996; 2002) argues that the salience of bilateral trade relationships and the symmetrical nature of dependence in these relationships are important determinates of conflict. Salience is defined as the importance of a bilateral trading relationship relative to others for two states in a dyadic relationship. Symmetry is the equality of dependence for states in a dyad. She finds through a large-n study that high interdependence, measured by the interaction of salience and symmetry, actually increases the likelihood of interstate conflict. Martin, Mayer, and Thoenig (2008) argue that countries more open to global trade are more prone to conflict due to the lower opportunity costs of any one trade relationship. The more numerous and diversely distributed the trade ties of a given state, the less valuable any one connection is relative to the others. Consequently, states with open markets incur less pain from the severing of any one trade tie. The reduced opportunity cost of conflict both decreases the pain of war and reduces the effectiveness of economic sanctions, since states may easily adopt by shifting from one trade partner to another.

2.2 Foreign Policy Substitution and Sanctions as Coercive Tools

The third and somewhat underdeveloped mechanism by which economic interdependence promotes peace is the possibility that economic interdependence

increases the effectiveness of alternative conflict resolution mechanisms. In other words, policies short of war may be substituted as a coercive means to achieve foreign policy goals as economic interdependence can increase their effectiveness, thereby obviating the need for war. The essence of policy substitution is that states may pursue foreign policy goals using several different means. States possess a menu of options with which they may address foreign policy issues (Most and Starr 1984 and 1989; Starr 2000). Different situations (causes) will often tend to result in different policy responses (outcomes) across both nations and time despite similar foreign policy objectives. For example, responses to a perceived security threat by a state range from increased defense spending, to securing allies, or preemptive war among others. The exact policy option adopted is determined by various factors both internal and external to the state. Cioffi-Revilla and Starr (2002) further refine policy substitutability and its application to theory and empirical testing in compliment to opportunity and willingness. Specifically, policy substitutability is a second-order causal mechanism to the larger framework of opportunity and willingness (Cioffi-Revilla and Starr 2002, 232). In other words, policy substitutability is a decision-making process stemming from the ability and desire of a state to act. A critical component of foreign policy substitutability, furthermore, is in the relative comparison of instruments to one another (Most and Starr 1984; Baldwin 1985, 121-122; Most and Starr 1989). Within the universe of potential responses to conflict, particular alternatives are more attractive compared to others based on the ability of states to inflict harm and withstand retaliation (Starr 2000, 132; Cioffi-Revilla and Starr 2002, 232; Gartzke, Li, and Boehmer 2001, 400; Stein 2003, 118). Consequently, policy substitution can shed light on the process of conflict within the context of cost/benefit

analyses. Foreign policy substitution is also strategic in nature. States will implement particular policies in part influenced by their expected outcome and chances of success (Clark and Reed 2005).

Of particular interest in the economic interdependence and conflict debate is the potential use of economic sanctions as substitutes for military force. Economic sanctions may be used to selectively harm the economy of another state if interdependence is sufficiently high. In this way, economic sanctions can be tools of coercion in which the sender state disrupts the flow of trade or capital in an effort to change an undesirable policy in the target state (Wallensteen 1968; Baldwin 1985; Hufbauer, Schott, and Elliot 1990; Drezner 2003). Likewise, sanctions can simply be used as tools to punish the target for an action or policy (Nossal 1989, Drezner 1999). The success for failure of economic sanctions, given this motivation, is directly related to the structure of economic relations between contending parties (Baldwin 1985, 189-195; Baldwin 1993; Whalley 1996; Mastanduno 2003, 176; Morrow 2003, 91; Stein 2003). Sanctions are particularly likely to succeed when used by relatively strong states against the relatively weak, as the latter is more dependent on the former for economic viability (Hirschman 1981).

Economic sanctions may also substitute for military force insofar as interdependence enhances states' ability to send costly signals. In particular, Garzke, Li and Boemer (2001) argue that severing mutually valuable commercial ties enables interdependent dyads to credibly signal resolve in conflict. Private information is therefore revealed concerning the disputant's willingness to fight. Similarly, Verdier (2004) argues that sanctions are important purveyors of private information from the sender state to the target state. They may signal a sender state's disapproval and/or its

resolve to see an offensive policy of the target state reversed, preferably without the use of military force (Drezner 2003; Garzke, Li and Boemer 2001; Morgan and Schwebach 1997). Economic sanctions and military threats may also generate audience costs insofar as leaders are punished for backing down from international confrontations (Fearon 1997; Schwebach 2000; Gartzke, Li, and Boehmer 2001; Morgan and Schwebach 1997; Lektzian and Sprecher 2007). Sending an economic sanction, in other words, may force leaders to pursue an aggressive policy vis-à-vis the target or risk being punished.

Despite their relative popularity, the ability of economic sanctions to generate meaningful costs through these mechanisms, and therefore succeed as signals of policy, is questionable. First, the ability of states to tailor sanctions to specific dimensions reduces their overall impact and weight. Indeed, Lektzian and Sprecher (2007) argue that sanctions are designed in such a way as to minimize the cost imposed on senders. The result, which they demonstrate empirically, is that sanctions often carry relatively little sunk or audience costs and result in a higher probability of military conflict overall. Second, when the field of available policy options is expanded to include military force, the audience cost value of sanctions is tenuous. Insofar as the potential cost of military confrontation (i.e., casualties) exceeds the potential cost of economic sanctions, the sunk and audience costs generated will typically be lower for sanctions than military force. As Fearon (1997) notes, “signaling anything less than total commitment leads to the inference that the defender will surely not fight” (75). Taking these two points together, sanctions may be seen by defending states as signals of the challenger’s weakness simply because they are not military threats (Hufbauer 1998). Sanctions may therefore be

viewed as foreign policy “on the cheap,” when military force is too expensive and diplomacy too frail (Hufbauer 1998; Schott 1998; Schwebach 2000).

This is not to say that economic sanctions are completely devoid of an ability to signal resolve to defending states. The true signaling power of economic sanctions may lay in the ability of the challenger to demonstrate the harm it can inflict on an opponent. That is, by imposing costs on a defending state, the challenger communicates its ability to disrupt political or economic systems in the target. Hence, the signal is not necessarily one of intention or resolve, but of ability and capacity. Jervis (1970) argues that signals (or what he calls indices) are more successful when the “statements or actions ...carry some inherent evidence that the image projected is correct because they are believed to be inextricably linked to the actor’s capabilities or intentions” (18). Consequently, economic sanctions can be effective signals of the challenger’s capabilities in two ways. First, strong economic sanctions can demonstrate the degree to which the challenger is able to disrupt the defender’s economy and government by severing commercial ties. Second, the strength of sanction can signal the degree of resolve and domestic support for coercive actions (Lektzian and Sprecher 2007). By implication, weak sanctions can signal the opposite effects – namely the inability to harm and a lack of domestic support. The mechanism behind the signaling value in this way, however, is identical to the compellence or punishment argument. Specifically, sanctions are successful to the degree the challenger can harm the defender. The success or failure of economic sanctions, therefore, likely rests on their ability to inflict some degree of economic damage on the target state.

2.3 Evaluating the Effectiveness of Economic Sanctions

Turning to the actual effectiveness of sanctions, it is important to understand that success rates are strongly influenced by the goals states attempt to achieve and how success is defined. First, it is possible leaders that impose sanctions are primarily motivated by domestic political gain. Sanctions may be a mechanism by which governments demonstrate strong leadership or sympathy to domestic constituencies to gain political support in elections or for particular policies (Drury 1998; Kaempfer and Lowenberg 1988 and 1992; Mundo 1999; Whang 2011). Evaluating whether sanctions compelled a target to change policy, in these instances, is likely of little use given it was not their primary goal. Beyond this, however, sanctions may fulfill two objectives for states. First, sanctions may be a punitive measure against a target for actions or policies of which the sender disapproves (Nossal 1998). Punitive sanctions also serve a deterrent function, as they are in part meant to demonstrate the potential cost of objectionable policies in an effort to dissuade future transgressors (Hufbauer, Schott, and Elliot 2007). Second, sanctions may be used to compel states to change particular policies or behaviors.

The effectiveness of punitive and compellent sanctions is a topic of heated debate. The canonical empirical work on sanctions – Hufbauer, Schott, and Elliot (1990; 2007) – finds that they are successful in approximately one-third of cases (158). Once again, however, success is dependent on the sender's goals, as over one-half of sanctions succeed when they require only a modest policy change by the target. Likewise, Petrescu (2010) finds that sanctions may be an effective deterrent to future actions. In her analysis, she considers the likelihood that a state participates in a future military dispute given they were sanctioned in a previous military dispute. Using statistical analysis, she

finds that a state is indeed less likely to become involved in military disputes if they are sanctioned in a previous dispute. In contrast, Pape (1997) reevaluated the original work of Hufbauer, Schott, and Elliot (1990) using a more stringent definition of success.

Ultimately, he argues that sanctions are only successful in compelling policy change 5% of the time once military actions and ambiguity over concessions are taken into account.

Drezner (2003), however points out that previous conclusions about the effectiveness of economic sanctions were drawn without taking the threat of sanctions into consideration. Using a game theoretic model, he illustrates that target states are more likely to acquiesce to the sender state's demands before sanctions are actually imposed. Citing a previous study by Elliott and Richardson (1997), he notes that in economic sanctions dealing with U.S. trade policy, threats were successful about 56% of the time as compared to implemented sanctions which were only successful about 33% of the time. It could be argued that the threat of economic sanctions is a more useful policy tool than actual implementation; however, implementation is a necessary procedure without which the threat loses credibility (Lindsay 1986).

The sanctions debate now generally rests on identifying the conditions under which sanctions can and do work. Tsebelis (1990) models a two player game in which the sender has the choice to sanction or not and the target is given the choice to continue its policy or comply with the sender state's demands. Tsebelis provides six scenarios in which he considers different assumptions, all of which converge to the same equilibrium. Tsebelis finds that strategies of target and sender depend on the payoff of the opponent rather than their own payoff. This suggests that leaders in the sending state are interested in punishing the target even at their own cost and that the target is interested in violating

even at its own cost. Eaton and Engers (1992) suggest that the resolve of the sender and target should be the determining factor in whether sanctions are successful. They create two models, one in which the sanction demand has a shadow of the future, and one in which the demand is a onetime event. They find that sanctions and threats are more likely to be successful when expectation of future interaction exists. Smith (1995) builds upon Eaton and Engers' work by specifically incorporating the threat of sanctions into the model. He finds that the success of sanctions affects whether or not a nation chooses to sanction, suggesting that sanctions are indeed meant to succeed despite their seeming ineffectiveness. Drezner (1999) attempts to model the effects of conflict expectation on economic statecraft. He finds that as concerns over relative gains and reputation increase, a state's decision to utilize sanctions increases as well. Drezner also shows that as opportunity costs rise for the target and decline for the sender, the more economic sanctions will be used and the more effective they are likely to be.

Game theoretic models of this nature are complimented by numerous empirical studies. One set of studies considers the characteristics of the sending and receiving states in determining sanctions success. Overall, sanctions are more likely to succeed when utilized against close trading partners, friendly nations, and democracies due largely to the vulnerability of these states to costs (Allen 2008; Jing, Kaempfer & Lowenberg 2003). Other studies focus on the characteristics of the sanction itself in compelling policy change in targets. Hufbauer, Schott and Elliott (2007) argue that a combination of international cooperation and high costs to the target should bolster a sanctioning state's success rate, although others find against this claim (Martin 1992; Kaempfer and Lowenberg 1998; Miers and Morgan 2002; Bapat and Morgan 2009).

Beyond this, targeting ruling elites or employing multiple strong sanctions at the dispute outset over incremental increases over time increase the probability of success (Morgan and Schwebach 1996; Allen 2008). Finally, Ang and Peksen (2007) focus on the nature of the dispute itself by arguing that states' perceptions of the issues involved affect sanction outcomes. In particular, the greater the difference in salience between the sender and the target, the more likely a sanctions episode will end in success for the sender. To a certain degree, this backs up a game theoretic model by Hovi, Huseby and Sprinz (2005) in which they, "demonstrate that a target country will yield to imposed sanctions only if it initially underestimated the impact of sanctions, miscalculated the sender's determination to impose them, or wrongly believed that sanctions would be imposed and maintained whether it yielded or not." Consequently, given the extant literature, the effectiveness of sanctions is an issue of strategic conditions as much as economic circumstances.

2.4 Economic Institutions in Integration Theory

The second related body of literature on the commercial peace focuses upon the institutional aspects of organizations. Integration and regime theory argue that international institutions accrue benefits to member states that justify their creation and maintenance. As a consequence, individual states choose to become members of international organizations by adhering to formal, documented guidelines of association. In many ways, this is what distinguishes the potential effects of economic integration agreements from simple economic interdependence. Consider first the motivations behind the creation of international institutions. In the most basic sense, international institutions are responses to problems beyond the grasp of individual states (Mitrany

1965). Common problems create demands for technocratic responses that should provide better overall outcomes for members. In this way, international institutions are highly pragmatic tools at the outset (Haas 1958; 1964). The likelihood that organizations will benefit member states is largely a function of the linkages between them. Both Deutsch (1957; 1968) and Nye (1971), in particular, argue that integration must be preceded by an increase in overall transactions between potential members of economic unions. International organizations may both reflect and foster interactions and interdependence between member states.

A second body of integration literature looks *into* the state to find motivations for cooperation. Domestic constituencies in favor of integration may facilitate greater international cooperation through several mechanisms. In particular, elites play critical roles in the integration process. The socialization of elites – particularly within the bureaucracy – in the integration area enables both the realization of mutual gains and transmission of common values (Haas 1958; Deutsch 1968; Nye 1971; Wolf 1973; Moravcsik 1991; Sandholtz and Stone Sweet 1998; Stone Fligstein, Sandholtz, and Stone Sweet 2001). Likewise, shared values and ideology facilitate integration between states. Strong ideological systems, in particular, insulate the integration process from potential detractors and enable states to take short-term losses (Nye 1971). Institutional mechanisms are also important in primarily a pragmatic sense. Mansfield, Milner, and Pevehouse (2007) specifically apply their analysis to economic agreement formation and find that a greater number of “veto players” with the opportunity to derail trade negotiations reduce the likelihood of agreement formation. Hence, domestic politics can profoundly influence economic integration.

Overall, the creation and maintenance of international institutions is dependent in large part on their ability to bestow benefits on member states. Indeed, Keohane (1984) argues that institutions reduce transaction costs, limit uncertainty, and provide information that reduces the chances of members renegeing on commitments. All of these elements provide incentive to joint and sustain international cooperation through a codified framework. Such benefits are particularly likely to be realized in economic regimes owing to the potential for mutual gains (Lipson 1984; Axelrod and Keohane 1985). Ultimately, cooperation in one area of policy – such as trade – “spill-over” into new functional areas that require expanded bureaucracy and integration (Haas 1964). Consequently, integration tends to beget integration in the neofunctionalist perspective.

The success or failure of integration is not guaranteed by extent of interdependence or interaction between member states, however. Indeed, *disintegration* can occur under several circumstances. Perhaps the most intuitive reason for stagnation or disintegration is the inability of some institutions to address the distribution of gains. To some extent, states are concerned with the distribution of gains from both national power (Mearsheimer 1994; Grieco 1988; Grieco 1993) and economic equality perspectives (Nye 1971). Symmetrical gains, therefore, increase the likelihood integration will succeed. Domestically, Deutsch (1968) in particular identifies some of the conditions under which disintegration occurs. These include the rise of new political groups, recalcitrant elites or the failure of values to mesh, lack of domestic reform, and failure by domestic elites to adjust to the new political climate.

Also informative in the success or failure of integration, with particular respect to economic institutions, is the literature exploring political power and commercial

exchange. In particular, several works expound on this internal integrative process as it relates to commercial exchange by linking the distributional effects of trade to political power shifts. Following Stolper-Samuelson's classic theorem, industries in which a state is abundantly endowed will gain from external trade while poorly endowed industries will suffer. The political effects of this redistribution in economic power resonate through class cleavages. Those controlling the abundant factor will tend to gain over those with the less abundant factor (Rogowski 1987; Midford 1993). Broadly based class or industry cleavages may emerge depending on the mobility of factors, with high mobility across industry leading to class cleavages and low mobility to industry cleavages (Hiscox 2001). In turn, those gaining from trade will look to capitalize, while those hurt by trade will tend to lobby for exclusions and rollbacks.

2.5 Commercial and Political Consequences of Economic Agreements

In the most basic sense, economic agreements remove barriers to exchange between member states which, in turn, increase intra-agreement welfare. By removing barriers to trade, economic integration agreements have been shown to increase trade between members. Using gravity models to estimate a "normal" level of trade in absence of agreements, a robust economic literature has shown that economic integration agreements do indeed increase exchange between members (Carerre 2006; Egger et al 2008). In particular, Baier and Bergstrang (2007), using sophisticated statistical instrumental variable models accounting for endogeneity, find that economic agreements more than *double* trade between two member states after ten years. Second, the integration of markets and lowering of barriers facilitated by economic agreements implicitly broadens the markets of member states. This is analogous to an exogenous

increase in the size of domestic markets that may provide significant economies-of-scale. Larger markets created by economic agreements may increase foreign direct investment (FDI) into member states as corporations look to exploit newly realized economies of scale (Joumotte 2004). Corporations seeking to avoid the *de facto* discrimination of a limited economic integration agreement may find FDI an attractive alternative. Consequently, economic agreements also tend to attract multinational corporations (Chen 2009). Third, economic agreements encourage industrialization in developing states when shared by either developed or large developing states (Puga and Venables 1998).

Economic agreements may also confer several political benefits on member states. First, economic agreements may facilitate domestic reform and lock-in policy commitments. Insofar as economic integration agreements are “sticky” or difficult to undo, accession to a group binds domestic policy (Whalley 1996). Furthermore, successive governments face constraints when considering “surprise” policies to the detriment of externally oriented actors in the state (Fernandez and Portes 1998; Schiff and Winters 1998). In this way agreements can be credible signals of policy intentions. Second, the larger market conferred by an integration agreement may afford member states more bargaining weight in multilateral negotiations. Whalley (1996), for example, contends that newly independent Eastern European states following the Cold War pursued a series of limited economic agreements as bargaining leverage vis-à-vis the EU (72). Third, economic integration agreements may underpin broader security arrangements. Schiff and Winters (1998), notably, identify three security-based motivations for regional integration – quelling domestic unrest, binding member states together politically, and creating institutions to balance against external threats.

Finally, states seek economic agreements to lock-in access to important export or investment markets. Market-access motivations are generally defensively oriented with the aim of preventing exclusion or responding to other regional trade agreements. States excluded from one agreement may seek inclusion or creation of an alternative arrangement to ensure alternative markets (Baldwin 1993, 1997, 2006; Fernandez and Portes 1998). During the interwar years, for example, Germany scrambled to secure exclusive resources through regional agreements in response to English trade arrangements (Eichengreen and Frankle 1995, 96). The ultimate effect *may* be a “domino” effect where constituencies in excluded states seek defensive regional arrangements in response to *de facto* market discrimination and fears of trade diversion (Baldwin 1993). Broader multilateral liberalization may be detrimentally effected insomuch as states have less incentive to add additional members to a regional grouping (Krugman 1993; Bhagwati and Panagariya 1999). Alternatively, regionalism may be a stepping stone on the way to broader agreements and inter-region cooperation. The reduced number of units in multilateral negotiations and information conveyed by regional openness may encourage broader liberalization (Baldwin 1993; Baldwin 2006).

That economic integration agreements are universally desirable, however, is a topic of debate in economics scholarship. Initially, limited economic integration was unequivocally encouraged as a stepping-stone to broader liberalization (El-Agraa 1997). Viner (1950), however, identified the potential negative externalities of regional economic integration. While he notes that agreements reduce internal barriers to trade and increase the implicit size of the domestic market, both of which tend to benefit the member state, Viner also identifies the possibility of agreements to *limit* international

trade (Viner 1950). States joining an agreement may implicitly gain from protection if the RTA-wide tariff is higher than the state tariff (Viner 1950, 48). Indeed, economic agreements are inherently discriminatory in that they liberalize only specific geographic areas, thereby disadvantaging excluded states in some fashion (Bhagwati 1993). Indeed, agreements may create strong incentives to raise external trade barriers to maximize internal welfare gains (Krugman 1991, 1993; Findlay and Panagariya 1994; Pomfret 1997, 200-201; Schiff and Winters 1998).

Because of the tendency for many RTAs to accommodate internal trade and restrict external trade simultaneously, trade flows may shift from non-members to members of an agreement. Trade diversion, as it is called, occurs in the context of an agreement when exchanges of goods are shifted from more- to less-efficient producers due to the unequal removal of trade restrictions (Viner 1950; Krugman 1991; 1999; Findlay and Panagariya 1994; Pomfret 2001). That is, eliminating trade barriers to select states (i.e., agreement members) may reduce their real cost of goods compared to states who do not receive the same reduction in trade barriers. This process was first identified by Viner (1950) and subsequently expanded upon by numerous authors (Krugman 1991; 1999; Findlay and Panagariya 1994; Pomfret 2001). Figure 2.1 depicts a hypothetical process of trade diversion according to Viner (1950). Imagine three countries called Alpha, Bravo, and Charlie. Assume Alpha imports wheat from Bravo and Charlie based exclusively on price. Furthermore, it has a 20% tariff on both countries. Bravo and Charlie export wheat for \$1.10 and \$1.00 a bushel respectively. With the tariff applied to both states, it is easy to see that Alpha imports wheat from Charlie given its lower price (\$1.20 compared to \$1.32). Suppose now that Alpha and Bravo sign an agreement that

eliminates barriers to the wheat trade. As a result, Bravo can export to Alpha at a total cost of \$1.10. Charlie, however, is still assessed a tariff of 20% maintaining its total export cost at \$1.20. Consequently, Alpha shifts its trade from Charlie to Bravo despite its relative inefficiency.

Consequently, members of an RTA may achieve welfare gains at the expense of the external world as intra-RTA trade displaces exports from non-member states (Schiff and Winters 2003, 189). Empirically, numerous studies either using gravity models to predict baseline levels of trade or case studies identify trade diversion across several trade agreements (see Schiff and Winters 2003, 190 for a review, as well as Bayoumi and Eichengreen 1995; Eichengreen and Frankel 1995; Baldwin, Forslid, and Haaland 1996; Yeats 1997; Gupta and Schiff 1997; Chang and Winters 2002; Magee 2008; Martinez-Zarzoso, Felicitas, and Horsewood 2009).

Trade agreements also incentivize protectionism among agreement members vis-à-vis the external world which potentially compounds the issue of trade diversion. First, depending on the agreement type, barriers between members and non-members may actually increase once agreements are signed (Viner 1950). Furthermore, both Krugman (1991; 1993) and Schiff and Winters (1998) show formally that agreement members have strong incentives to raise external barriers and generate trade diversion as a welfare-maximizing strategy. As an example, Brazil lobbied heavily for the inclusion of extensive information technology trade liberalization in Mercosur negotiations, but subsequently opposed a similar potential multilateral agreement (Schiff and Winters 2003, 72). Higher external barriers may be part of a state-led strategy of insulating infant industries to build industrial capacity by specifically limiting external trade (Pomfret

2001, 352; Foroutan 2000). Despite the fact that it is bad economic theory, trade diversion may be good politics. Constituencies within agreement members that benefit from trade diversion have strong incentives to maintain and accelerate the process (Winters 1996; Olarreaga and Soloaga 1998). Furthermore, independent of observed trade effects, diversion worsens the terms of trade for non-members as they are forced to lower prices to remain competitive (Schiff and Winters 2003; Chang and Winters 2002). A similar process occurs with respect to investment. Economic integration can also divert investment from non-members to members by firms seeking access to the relatively larger market created by the agreement. Baldwin, Forslid, and Haaland (1996), in particular, find that the European Single Market Program diverted investment from European Free Trade Area countries.

Economic agreements may also affect the distribution of power between domestic constituencies. In particular, economic integration agreements may formalize and institutionalize many of the mechanisms advantaging the trade-endorsing class. Inasmuch as the formation of an economic integration agreement reflects a bargaining process between two states, the negotiated arrangement likely solidifies those parties on which domestic political support rests (Grossman and Helpman 1995). In other words, many agreements *by design* cater to (at least potentially) powerful constituencies. This effect is reinforced if members can secure exclusions from the removal of barriers, as in relatively shallow agreements, or protection with joint external barriers, as in customs unions (Olarreaga and Soloaga 1998). Commercial agreements then create binding policies for states that, if violated, risk retaliation from other members of the agreement and punishments by market forces (Whalley 1996; Fernandez 1996; Schiff and Winters

1998). Consequently, many agreements have strong forces that discourage their easy recall. Power tends to shift from the “losers” in liberalization, or those in import-competing industries facing more competition, to the “winners” created by liberalization, which generally include competitive export industries.

2.6 The Commercial Institutional Peace

The first theoretical connections between formal economic integration and conflict were made by turn-of-the-century European scholars. Vilfredo Pareto, speaking at European Peace conferences in both 1889 and 1900, advocated customs unions as a means to achieve peace on the continent (Machlup 1992, 146). John Maynard Keynes echoed this sentiment after World War I, believing in the ability of integration to politically bind European states (Keynes 1920, 249). European politicians also believed firmly in the ability of economic integration to prevent the wars witnessed in the first half of the twentieth century.

Empirically, research indicates trade agreements succeed in reducing conflict. Mansfield and Pevehouse (2000) first explored the connection between preferential trade agreements (PTAs) and conflict. The authors argue that preferential trade agreements (PTAs), which encompass the entire range of possible economic arrangements, reduce militarized interstate disputes between states by increasing trade, facilitating investment, and providing forums for conflict resolution. Using a large-N analysis with an interaction between PTA membership and absolute bilateral trade, Mansfield and Pevehouse ultimately find that PTAs reduce conflict only as trade between member states increases. Subsequent works have expanded the theoretical framework to account for more particular causal mechanisms. Bearce (2003) and Bearce and Omori (2005) test three

potential causal mechanisms behind the pacifying influence of economic integration – trade interdependence, elite interactions, and conflict resolution forums. Ultimately, they find a stronger role for the latter two in reducing conflict.

Several additional works disaggregate the category of PTA to account for institutional variation. First, Haftel (2007) specifically addresses how institutional variation across economic integration agreements influences conflict. He argues that institutions incorporating broader scopes of activity and more regular meetings of elite politicians reduce conflict. Ultimately, he finds support for his argument using a limited sampling of agreements existing during the 1980s and 1990s. Second, Vicard (2011) also considers the heterogeneity of trade agreements in his analysis. He argues that shallow agreements that do not require political coordination (i.e., partial scope or free trade agreements) do not constrain conflict. He does not account, however, for the extent of economic interaction between members created by the economic agreement itself. Finally, Gartzke, Li, and Boehmer (2001) explore the effect of monetary and capital interdependence on conflict between states. Specifically, common currency arrangements, including pegged exchange rates and joint currency areas, are posited to reduce conflict by signaling policy intentions and increasing the cost of conflict. Through statistical analysis, the authors find that joint currency arrangements pacify while pegged arrangements, which represent a degree of asymmetry in commercial relationship, tend to increase the possibility of conflict between states.

2.7 Opportunities in the Extant Literature

The current literature exploring the commercial institutional peace, while important first steps, do not fully address the potential influence of economic integration

on conflict tendencies. First, the majority of the current literature places all economic agreements into the “black box” of preferential trade agreements (PTAs). In reality, economic agreements differ greatly in scale and scope. There is a vast difference, for example, between NAFTA and the European Union in both stated and realized goals. Furthermore, those works that do account for institutional design make linear assumptions such that an increase in the depth/scope of an agreement yields more peace. There is no *a priori* reason, however, to believe that the influence of agreements is uniform or even linear across all types. In the extreme, some agreement types may encourage peace while others conflict. This is particularly important given the noted potential of international commercial exchange to influence domestic power dynamics (Hiscox 2001). For example, asymmetrical agreements, which are more common in shallow institutions (Fernandez 1996, 8), may encourage domestic forces to look on such arrangements as detrimental in the short- or long-term.

Second, the current literature considers primarily bilateral trade and its influence of conflict. Consequently, empirical studies to date interact the presence of an agreement with bilateral trade as the primary driver of conflict within commercial agreements (with the exception of Vicard, who does not use any interaction terms). However, the utility of economic agreements is not necessarily limited to bilateral interactions. Greece, for example, may not trade as much with Portugal as with Italy. They still may be dissuaded from engaging in conflict with Portugal, however, if it risks expulsion from the EU and losing preferential trading rights with Italy. Given the diverse influences integration, a more comprehensive analysis of costs is warranted.

A third potential contribution to the literature on economic integration and conflict is less a criticism than an extension of existing works. Much of the integration literature to date rightfully addresses intra-group dynamics, or how member states interact with one another. Formal economic integration, however, impacts not only intra-member relations, but also relations with the external world. Trade diversion and the incentives agreement members have to raise external barriers likely influence the decision-making calculus of states excluded from the agreement. In short, looking only at trade diversion, conflict may actually be more likely between agreement members and *non*-members owing to the reduced importance of extra-agreement trade. In other words, formal economic integration marginalizes the external world. This is likely to be exacerbated to the extent that regionalism begets regionalism in a “falling domino” fashion. That being said, while barriers may reduce trade, they provide strong incentives to invest in an agreement area to avoid implicit discrimination. Consequently, while it is likely that agreements influence relations between members and non-members, the exact nature is difficult to determine.

A fourth and final shortcoming of the commercial institutional peace literature is a broader criticism of conflict literature and a potential area of improvement. Conflict studies are extraordinarily well versed at predicting when war does not take place. Democracies, highly developed states, economically interdependent states, and allies tend not to engage each other militarily. While this is no doubt an important avenue of research, such studies say little about what states actually *do*. “War” and “not war” are generally explored without consideration given to alternative means of conflict

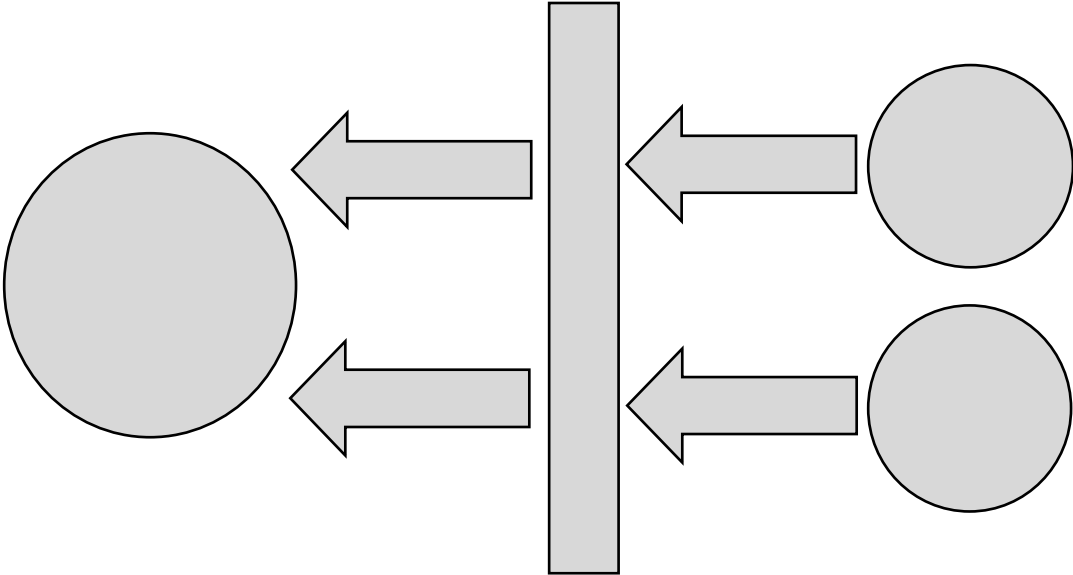
resolution. If states have a strong motivation to avoid war, by what means do they resolve interstate conflicts?

Economic integration agreements provide a unique “natural experiment” of sorts whereby alternative conflict resolution mechanisms gain effectiveness. In other words, policies short of militarized conflict can be substituted to achieve foreign policy goals (Most and Starr 1984, 1989). In particular, sanctions – either positive or negative – should be more effective, and therefore employed more often, between economic agreement members. First, economic interdependence between member states, realized or otherwise, may increase the effectiveness of non-violent coercion. Second, institutional structures are more likely to survive bouts of sanctioning given the ability of such tools to be tailored to specific situations. Third, the formal organization offered by an economic agreement may allow for coordinated action. Finally, the bargaining power and market potential of an economic agreement may increase the appeal of positive sanctions. The observable outcome of this dynamic may be increased sanctions usage, both positive and negative, by agreement members corresponding to decreases usage of militarized conflict.

Questions about the effect of agreements on conflict and the substitutability of foreign policies – either separately or jointly – cannot be addressed without carefully considering the relationship between economic and security relations. In this project, I pursue a framework that carefully considers the overall impact economic agreements have on international relations. Economic agreements can have impacts well beyond the states immediately involved in it. Consequently, I include not only intra-agreement dynamics in my analysis, but also the extent to which agreements impact the broader

regional and global economy. Likewise, the multitude of foreign policy options available to states requires a careful analysis of alternatives and their strategic interplay. It is important to appropriately model the relationship between economic sanctions and military force – both theoretically and empirically – in order to truly understand how states pursue the conflict process. In the following chapter, I present a framework that addresses these factors. Conflict between states is in part a consequence of their economic relationship. Specifically, formal economic agreements influence the salience of trade ties in ways that affect the relative utility of economic sanctions and military force in resolving disputes. Ultimately, therefore, conflict behavior is in part a consequence of the policy options made available by economic circumstances and relations between states.

Without Economic Agreements



Prices With Alpha-Bravo Economic Agreement

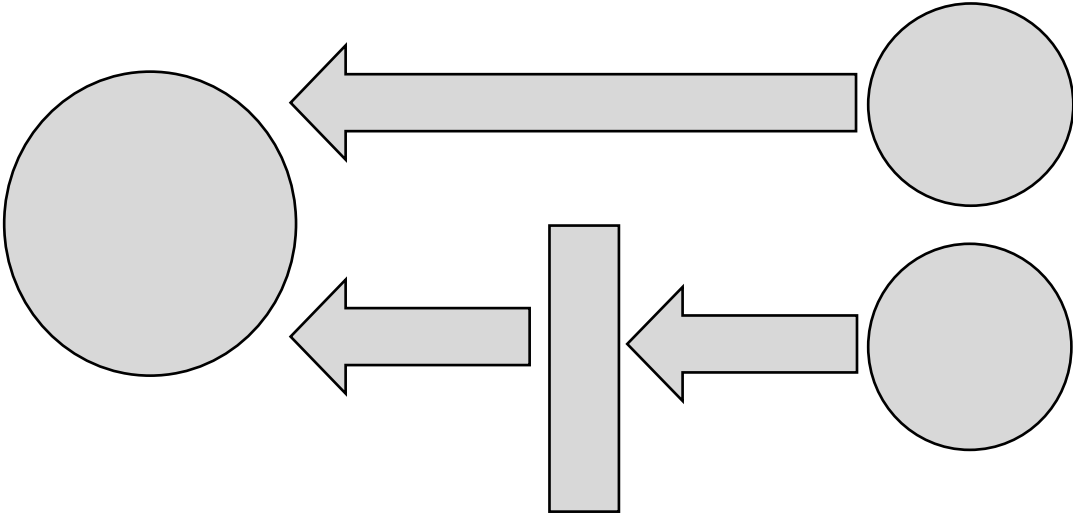


Figure 2.1: An Illustration of Trade Diversion

CHAPTER 3

ECONOMIC AGREEMENTS AND INTERSTATE CONFLICT: DISPUTE INITIATION AND POLICY SUBSTITUTION

While the extant literature on interdependence suggests a strong role for commercial institutions in reducing conflict, the economic processes they promote are multifaceted and complex. This complexity in turn suggests a more nuanced and comprehensive view of economic agreements in shaping state behavior. First, economic agreements are highly heterogeneous in depth and scope. Different levels of economic integration incorporate policies that may exhibit unique and non-linear influence on interstate conflict. Second, economic agreements do not exist in a vacuum and, indeed, may have strong influences on commerce beyond intra-agreement ties. There are important reasons to believe the formation of an economic agreement influences strategic relationships with non-member states. Finally, one of the posited causal mechanisms behind the pacifying effect of economic interdependence is the substitutability of economic sanctions for military force. Only a handful of studies, none of which address economic agreements specifically, consider the relationship between war and economic sanctions as policy options (see Clark and Reed 2005 for a noteworthy exception). In principle, economic agreements provide the ideal circumstances with which to observe the use of militarized and economic conflict. Members of economic agreements establish clear or formal commitments to increase interdependence and exchange. Within this context, sanctions are more likely to convey meaningful information to dispute

participants that should obviate the need for military conflict. Agreements, therefore, provide an opportunity to evaluate these claims.

Below, I develop a theory that embraces the complexities of economic agreements and how they influence conflict between members and non-members. Economic agreements confer material benefits on member states that, in turn, alter their relationship with those within and outside the agreement. The nature and extent of material benefits, furthermore, are dependent upon the structure of economic relations between states in the agreement. This is determined by the institutional mechanisms present in the agreement and the natural trade patterns between states as determined by geography, population, development, and other factors. Furthermore, in order to evaluate the ability of economic agreements to engender peace, the complete range of interactions between states must be taken into account. While agreements may reduce tensions between members, the economic forces it sets in motion may stimulate or exacerbate tensions between members and non-members.

I examine the relationship between economic agreements and interstate relations (or conflict) by using a combination of verbal and formal theory. First, I consider a variety of theoretical arguments about the impact of economic agreements on the initiation of conflict. I use the term “conflict” in this section to refer to policy disagreements between states that are sufficient enough to compel some degree of coercive action. Following the theoretical review, I develop a formal bargaining model using the logic of policy substitution to explore the means by which states engage in conflict. While agreements influence whether states initiate conflict, they also influence the tools states use as coercive instruments. Consequently, in discussing the bargaining

model, I frequently refer to coercive policies as the phenomenon being explained. I draw hypotheses from both a non-formal model of conflict and a formal bargaining model for empirical testing in subsequent chapters about how economic agreements influence conflict.

3.1 Economic Agreements and Interdependence

In the most basic sense, economic agreements foster institutional ties that promote economic interdependence between member states. First, economic agreements tend to increase trade between members by virtue of lower barriers to trade (Carerre 2006; Baier and Bergstrang 2007; Egger et al 2008). Second, the integration of markets facilitated by economic agreements provides significant economies-of-scale that may attract foreign direct investment (FDI) into member states (Joumotte 2004; Chen 2009). Third, integration agreements foster informal trade networks between members that increase the salience of all ties in the agreement. In other words, while a particular bilateral trade relationship may be unaffected by an economic agreement, states may still derive utility from the agreement by trading with other members. Fourth, in a formal sense, economic integration creates joint economic institutions and draws states into coordinated economic management. Fifth, agreements are often “sticky” or difficult to rescind without suffering consequences from members states and markets in general. In this way commercial agreements act as constraints on decision-makers and bind domestic policies to more open orientations and remove uncertainty (Whalley 1996). Consequently, we might expect members of economic agreements to attach greater salience and weight to intra-agreement connections given the potential benefits.

As such, the extensive benefits and linkages states derive from membership in an economic agreement foster greater economic interdependence between members. Interdependence, in turn, is more than simply the sum of exchange between two states (Baldwin 1980; Keohane and Nye 1977; Crecenzi 2003). Keohane and Nye (1977) are noteworthy in their development of the concept of interdependence in international relations. In particular, the authors further define the power aspect of interdependence as a function of how quickly states respond to changes in the relationship (sensitivity) and the extent to which a state is affected by the change (vulnerability). As tariffs, quotas, and regulations within agreements fall, the total amount of bilateral trade between members likely increases as states realize comparative advantages, economies of scale, and increased efficiency from production (Viner 1950; Johnson 1999). States in agreements may also attract more foreign direct investment owing to the relatively larger market area the agreement creates. Investment decisions by businesses are highly sensitive to the uncertainty and political risk generated by conflict (Chan and Mason 1992; Kobrin 1982). Increased investment resulting from membership can thus link states to agreement members. This holds true even if the investment flows from a third-party, non-member to an agreement member, as the investment may be to gain access to the preferential trade area.

States in economic agreements, by virtue of greater commercial exchange and reliance on intra-agreement ties, are likely to be more vulnerable to disruptions stemming from conflict between member states. It may also be the case that members of agreements are more sensitive to disruptions, as the codified trade network facilitated by the formal agreement enables states to more rapidly disseminate losses from a particular

bilateral conflict over the intra-agreement trade network. Likewise, foreign direct investment can generate vulnerability interdependence that is costly to break in the case of interstate conflict (Rosecrance and Thompson 2003). Economic integration also implies expectations about future commercial relationships and benefit (Mansfield and Pevehouse 2000). Hence, interdependence between member states is a combination of realized and anticipated commercial gains.

While economic agreements likely increase interdependence between members, it may also influence relationships between members and non-members. In particular, lowering barriers between members may unilaterally reduce the salience of a member state's trade ties with the external world. Considering a member state's aggregate trade flows, agreements may have two distinct influences. On the one hand, the total amount of trade a particular state conducts may increase as a result of exchanging more with fellow agreement partners. Lower barriers, in other words, may simply increase the amount of trade already taking place between two agreement members. On the other hand, flows may actually shift such that members conduct more trade with others in the agreement and less with non-members without necessarily increasing the total value of its trade portfolio. In the former case, the member grows more reliant on international trade, in general, and on member states, in particular, given the localized increase with agreement partners. In the latter case, members' reliance on international trade (i.e., its total level of national trade) remains unchanged, but dependence on agreement members as a whole increases given the shifting trade patterns.

Consider the first scenario where an agreement member's trade with other members increases without affecting its ties with non-members. The overall implication

is likely the reduced salience of trade outside the agreement area. Increased trade among all members within an agreement dilutes the relative importance of each tie with non-member states.¹ Shifting or expanding sources of imports and markets for export from non-members to members necessarily decreases the importance of those ties. As agreement members rely on each other for a greater portion of their overall trade portfolio, they rely less on states outside the agreement. Furthermore, the mere expectation of greater exchange among member states should reduce interdependence between members and non-members. States that sign agreements signal both the importance of their commercial relationship and the desire to see it develop further. In other words, states seek economic agreements to lock-in and enhance access to markets they view as important and critical for future development (Whalley 1996; Fernandez and Portes 1998; Schiff and Winters 1998). The more states look to the agreement for future commercial relations, the less important non-members become. Reductions in the salience of trade relationships applies to non-members as well. While members are drawn to their agreement partners, non-members are likely to identify their long-term commercial interest with other states given the implicit barriers they face to exchange with the agreement. The salience of non-member ties with agreement members, therefore, is similarly impacted by the process of economic integration.

Consider now the second scenario where increased intra-agreement trade comes at the expense of trade with the external world. This process, known as “trade diversion,”

¹ It also follows that agreements with many members dilute the relative importance of each trade tie *between* agreement members. As more states are incorporated into the group, the relative importance of each bilateral partnership may decrease. However, agreements carry institutional ties (i.e., formal membership) that links between members and non-members do not possess. To the extent these links can be leverage by the group to punish or coerce an individual member, even non-salient trade ties between agreement members can be considered “important.”

exacerbates the marginalization of trade relationships between members and non-members. Economic agreements are inherently discriminatory in that they liberalize specific geographic areas and exclude others (Bhagwati 1993). Furthermore, economic agreements may simply shift trade flows from non-members to members without increasing aggregate trade flows. This process (trade diversion) was first identified by Viner (1950) and subsequently expanded upon by numerous authors (Krugman 1991; 1999; Findlay and Panagariya 1994; Pomfret 2001). Figure 3.1 depicts a hypothetical process of trade diversion according to Viner (1950). Imagine three countries called Alpha, Bravo, and Charlie. Assume Alpha imports wheat from Bravo and Charlie based exclusively on price. Furthermore, Alpha has a 20% tariff on both countries. Bravo and Charlie export wheat for \$1.10 and \$1.00 a bushel respectively. With the tariff applied to both states, we expect that all else being equal, Alpha would import more wheat from Charlie given its lower price (\$1.20 compared to \$1.32). Suppose now that Alpha and Bravo sign an agreement that eliminates the tariff barrier on wheat. Now, Bravo can export to Alpha at a total cost of \$1.10. If Charlie is still assessed a tariff of 20%, with a total export cost at \$1.20, Alpha is likely to shift its trade from Charlie to Bravo despite Bravo's relative inefficiency.

Trade agreements also incentivize protectionism among agreement members vis-à-vis the external world, which potentially compounds the issue of trade diversion. First, depending on the agreement type, barriers between members and non-members may actually increase once agreements are signed (Viner 1950). Furthermore, both Krugman (1991; 1993) and Schiff and Winters (1998) show formally that agreement members have strong incentives to raise external barriers and generate trade diversion as a welfare-

maximizing strategy. As an example, Brazil lobbied heavily for the inclusion of extensive liberalization in information technology during negotiations on Mercosur, but subsequently opposed a similar multilateral agreement (Schiff and Winters 2003, 72). Higher external barriers may be part of a state-led strategy of insulating infant industries to build industrial capacity by specifically limiting external trade (Pomfret 2001, 352; Foroutan 2000). Despite the fact that it is bad economic theory, trade diversion may be good politics. Constituencies within agreement members that benefit from trade diversion have strong incentives to maintain and accelerate the process (Winters 1996; Olarreaga and Soloaga 1998). Furthermore, independent of observed trade effects, diversion worsens the terms of trade for non-members as they are forced to lower prices to remain competitive (Schiff and Winters 2003; Chang and Winters 2002).

A similar process occurs with respect to investment. Economic integration can divert investment from non-members to members by firms seeking access to the relatively larger market created by the agreement. Preferential trade agreements are particularly attractive to investors because they provide businesses admission to the entire area. By investing in Ireland, for example, Intel's products gained access to the entirety of Europe through the European Economic Area. Countries that do not enjoy such access, like some Eastern European and Balkan states, that otherwise would have been competitive with Ireland may have been disadvantaged by their lack of access. Indeed, Baldwin, Forslid, and Haaland (1996) find that the European Single Market Program diverted investment from European Free Trade Area countries. Consequently, agreements can disrupt investment flows in a similar pattern to trade.

The overall implication of trade diversion or the threat thereof is likely, all else being equal, to produce sharp reductions in interdependence between members and non-members of agreements. The material shift in trade flows away from non-members to members affects bilateral interdependence in two ways. First, less trade occurs between members and non-members, thereby reducing the extent of commercial exchange. Second, non-members constitute an even smaller portion of their trade portfolio. In the first scenario, trade between members and non-members is unchanged and marginalization is due largely to growth in the denominator (the member's overall trade portfolio). In the second scenario, trade diversion marginalizes member and non-member ties by reducing the numerator (the member's trade with the non-member) and holding the denominator constant. Consequently, members are likely less vulnerable to disruptions in trade with non-members, given the reduced salience of those ties. Economic agreements influence both short- and long-term commercial relationships, thereby influencing interdependence by potentially reducing the long-run gains available to both business and government.

3.2 Implications for the Initiation of Interstate Conflict

By altering interdependence between states, economic agreements likely influence their propensity to engage in conflict. The net effect of these influences, however, differs depending on whether the agreement encompasses one or both states in a political conflict. Increased interdependence between two states in the same agreement likely reduces the onset of violent interstate conflict. Conflict between members and non-members, however, is likely exacerbated to the extent interdependence is limited or diminished by the agreement.

3.2.1 Conflict Between Agreement Members

Conflict between members of the same agreement – whether through economic or military means – is likely to be relatively costly insofar as it jeopardizes commercial exchange and the future of the agreement. Insofar as states materially gain from the trade fostered by membership in the agreement, any political action that aims to sever or limit the resultant ties reduces the welfare of agents involved in trade. The opportunity cost of conflict is born by several actors in this scenario. Governments incur a cost in terms of lost revenue. While agreements are likely to limit the tariff revenue states gain from commerce with other members, states still gain tax revenue from increased economic activity. Sanctions, which are specifically designed to disrupt commerce between states as a means of compulsion, and war may suspend or eliminate bilateral flows of goods and capital.² Industries or firms dependent on external sales, in turn, risk substantial losses from conflict that ultimately limits the government's ability to extract revenue. FDI flows may also be affected by conflict, as the risk generated by disputes may discourage investment or promote divestment. States lose overall economic activity and tax revenue as a result, thereby reducing the likelihood of conflict (Souva 2002; Souva and Prins 2006; Bussmann 2010). Potential losses in tax revenue, therefore, may encourage states to avoid conflict with particularly important economic partners.

Perhaps more important, however, are the actions of the externally-oriented businesses themselves. Insofar as they depend on other agreement members' markets for sales, businesses face substantial risk from trade disruptions with said member. In the

² Barbieri and Levy (1999) challenge this assumption by showing that the effects of war are temporary and less severe than typically assumed. While using a sample of six individual cases, their findings are potentially problematic for conflict studies. My analysis, while potentially affected by this, considers the cost of conflict beyond the opportunity cost argument and takes a broader view of interdependence.

most basic sense, conflict can be viewed as a barrier to trade that threatens the welfare of exporters in an economy (Mansfield and Pollins 2001). Just as an increase in tariffs jeopardizes the gains of exporters (through retaliatory tariffs), conflict between agreement members risks harming the extant trade relationship. Industries or constituencies facing this challenge are more likely to press leaders to maintain openness (Magee 1980; Rogowski 1989; Grossman and Helpman 1994). In particular, export-oriented entities faced with such losses are likely to either lobby politicians to avoid conflict or withdraw support for those that do engage in conflict. In either circumstance, politicians dependent on the support of business have incentives to avoid disruptions to the trade relationship (Magee, Brock, and Young 1989; Grossman and Helpman 1994).

Economic agreements are particularly likely to embolden domestic constituencies given their institutionalized nature. First, agreements are more likely to encourage domestic businesses to export more goods by lowering barriers between member states. Agreements are by definition arrangements that promote economic openness between a discrete set of states. The openness they foster encourages the accumulation of economic and political power by actors invested in international commerce (Schiff and Winters 1998). In general, relatively more competitive industries will benefit from expanded export markets while relatively less competitive industries will suffer from increased competition (Viner 1950). Competitive export-oriented firms will tend to thrive, while import-competing firms will tend to suffer. Resources tend to shift from the “losers” who suffer from liberalization to the “winners” (Rogowski 1987; Midford 1993). Such policies expand the range and number of businesses dependent on other agreement

members' markets for commercial viability, in turn increasing the potential pressure on politicians to avoid conflict.

In addition, agreements are by definition arrangements that promote economic openness between a discrete set of states. The institutional structures of economic agreements are likely to be affected by conflict. For example, the 1969 Football War between El Salvador and Honduras brought a premature end to the Central American Common Market. Likewise, security tensions between Kenya, Uganda, and Tanzania exacerbated economic tensions that resulted in the termination of the East African Community. Consequently, conflict between two agreement members may put at risk the entire arrangement, including ties with third-parties. On the one hand, agreements may be unsustainable after conflict due to the distrust it may generate. On the other, fellow agreement members may sanction the aggressor in the conflict, thereby denying it further access to the special economic area.

Economic integration, as far as it generates interdependence or the perception of it, makes conflict in any form more costly. Governments sacrifice tax revenue from externally-dependent firms. Exporters suffer losses from conflict that encourages them to pressure politicians for peaceful relations. Lastly, conflict between two agreement members may end the entire agreement or otherwise result in the sanctioning of the aggressor, thereby denying it access to the entire preferential trade area. My first hypothesis is thus stated as:

H₁: Economic agreements decrease the likelihood of conflict between member states.

3.2.2 Conflict Between Members and Non-Members

As I have argued, economic agreements decrease the salience of members' external trade ties. Increased trade between members within an agreement dilutes the relative importance of each tie with non-member states. Furthermore, shifting sources of imports and markets for exports from non-members to members necessarily decreases the importance of those ties. As agreement members rely on partner states for greater portions of their trade portfolio, they correspondingly rely less on outside states for commercial viability and overall trade. Economic interdependence between members and non-members is likely reduced as a result of shifting commercial relationships. The more states look to agreement members for future commercial relations, the less important non-members become. Reductions in salience, while not necessarily uniform in magnitude, apply to both members and non-members when long-run gains from trade are considered. While the former obviously are drawn to their agreement partners, the latter are expected or must find ways to identify their long-term commercial interests with other states given the implicit barriers they face to exchange with the agreement. Indeed, trade agreements tend to spur additional trade agreements by states looking to "lock in" preferential markets (Baldwin 1993). The salience of non-member ties with agreement members, therefore, is similarly impacted by the process of economic integration.

The marginalization of economic ties between economic agreement members and non-members influences conflict behavior by reducing the opportunity cost of both sanctions and military force. One of the important reasons interdependence reduces conflict is the forgone benefits states incur by engaging in combat (Polachek, 1980; Doyle 1997). By diversifying trade partners, or even emphasizing certain ties over

others, states necessarily decrease dependence on any one source. Agreement members therefore suffer less by initiating conflict with non-members by virtue of their more salient ties with other agreement partners. The notion that trade deters conflict is also in part based on a long-term expectation that future trade relations will be hurt by war (Doyle, 1997; Oneal & Russett, 1997). By erecting an implicit barrier between members and non-members, economic agreements marginalize the future utility of trading relationships in ways that similarly impede their deterrent effect. This holds for both members and non-members as the agreement signals intentions of future trading relations.

Economic agreements may also lower the cost of conflict by providing member states alternative markets for products. Crescenzi (2003a; 2003b) argues that states facing lower “exit” costs – or a greater ability to replace lost trade – are less constrained in conflict. Economic agreements, in turn, may lower the exit costs for member states by providing established trade networks. When engaged in conflict with a non-member state, members of an economic agreement may be able to leverage intra-agreement trade ties to replace trade lost due to conflict. Likewise, Martin, Mayer, and Thoenig (2008) argue that decreases in systemic trade costs, part of which is associated with barriers, reduce the multilateral impact of bilateral conflict. That is, lower systemic trade costs allow states to shift trade to other nations, thus reducing the negative externalities of conflict. Consequently, as economic agreements reduce trade costs for members, the ability of members to leverage intra-agreement ties to absorb excess trade affected by hostilities with non-members reduces the overall cost of those conflicts. Given the

overall marginalization of ties between members and non-members, the deterrent effect of integration is likely restricted.

The marginalization of salient trade ties between members and non-members, while limiting the deterrent effect of interdependence, does not in and of itself indicate the start of acrimonious relations or an increase in conflict. However, economic agreements may also produce security externalities that exacerbate relative gains concerns and strategic vulnerabilities between members and non-members. First, economic agreement members benefit from their association with an exclusive commercial area. Members gain wealth and productive capacity stemming from increases in intra-agreement trade that generally do not privilege the excluded state. Trade increases domestic economic efficiency in the aggregate, as producers are able to acquire materials at lower cost and export at higher rates. Increases in domestic efficiency, in turn, free resources for use in military applications (Baldwin 1985; Hirschman 1981; McKeown 1984; Root 1984; Gowa and Mansfield 1993). That is, states that achieve greater wealth and productive capacity from trade may, in turn, convert their commercial advantages into military power to be used against excluded states (Gowa 1995). Trade can therefore alter the distribution of power and capabilities between partners, allies, and rivals (Gowa and Mansfield 1993; Mansfield and Pollins 2001). By extension, economic agreements that promote freer trade increase the efficiency with which domestic resources can be utilized by member states, thereby adding to their potential military capabilities and aggregate power.

Second, the process of trade diversion may actually transfer gains from non-member states to member states. Trade in this capacity may be viewed as a zero-sum

game where members gain at the explicit expense of non-members. While trade diversion has clear welfare consequences in the economic sense for all states involved, the more important dynamic for conflict behavior is the material shift in trade. Consider again the relationship depicted in Figure 3.1 both before and after an economic agreement is formed. Once an agreement is formed, the trade linkage between Alpha and Charlie is severed and results in a clear loss for Charlie, given it no longer exports to Alpha. However, while it clearly suboptimizes trade, it is not clear that Alpha suffers any absolute losses from trade diversion. Indeed, Alpha obtains goods at a lower cost with liberalization that may result in aggregate gains from increased efficiency. Agreement members, therefore, likely experience increases in aggregate economic activity while states excluded from economic agreements are more likely to experience absolute declines in trade or terms of trade. Consequently, trade diversion may imply relative losses for excluded states and corresponding gains for agreement members. Given the strong incentives agreement members have to increase trade barriers to the external world (Viner 1950; Krugman 1991; Krugman 1993; Schiff and Winters 2003), the simple possibility of diversion may influence state behavior. In other words, the fear of trade diversion, marginalization, and associated relative losses may be as compelling as the realization of loss. The codified nature of economic integration signals that losses will continue for those outside the agreement.

Increased efficiency and the effects of trade diversion stemming from economic agreements can therefore foster asymmetrical economic relationships between members and non-members in ways that encourage conflict. Member states gain strategic advantages through increased economic efficiency and insulation from the cost of

conflict with non-member states. As economic agreements are inherently discriminatory (Bhagwati 1993), the strategic gains member states enjoy do not extend beyond the borders of the agreement. Security externalities may therefore manifest such that non-member states are more strategically vulnerable. Relative losses resulting from trade diversion compound this effect, as it represents a direct relative gain for member states and loss for non-member states. Vulnerabilities are compounded if agreements exclude states from particularly important or strategic markets or resources. For example, both Britain and Germany pursued economic agreements in the interwar period to lock-in strategic markets and exclude the other from gaining footholds which ultimately fueled distrust and aggression (Eichengreen and Frankle 1995, 96). Indeed, after German victories in Europe, Bidwell and Uppgren (1941) expressed concern over German economic power from the United States's perspective:

“By exercising coordinated control over Europe's vast purchases, Germany might monopolize the foreign trade of certain of the republics, by bilateral agreements and bulk purchases, so as practically to exclude United States' goods. Further, we may expect that German economic power would be utilized to influence to our disadvantage unstable political situations whenever they appeared.” (Bidwell and Uppgren 1941, 285)

Strategic imbalances may in turn encourage both members and non-members to take more antagonistic stances. Acute vulnerabilities may compel non-member states to adopt more aggressive policies in the security arena to counteract perceived weaknesses and strategic imbalances (Hirschman 1981; Gilpin 1981; Grieco 1988; Grieco 1993; Gowa 1995; Mearsheimer 1990; Mearsheimer 1994; Barbieri 1996; Liberman 1996). Furthermore, relative losses experienced by non-members may outweigh the potential gains from trade for excluded states. That is, non-members may view whatever economic linkages they have with member states as sources of vulnerability or

dependency rather than ones of mutual gain. In such cases, the pacifying effect of economic exchange may short-circuit such that conflict is less costly overall. On the other hand, member states may press their new-found economic advantages on non-member states. Being less vulnerable, members may make bolder demands of non-members in conflict scenarios knowing the latter risks more through conflict.

Paradoxically, however, greater demands implicitly narrow the range of acceptable solutions to both parties which, in turn, increases the likelihood of violent conflict (Morrow 2003). This dynamic between members and non-members leads me to my second hypothesis:

H₂: Economic agreements increase the likelihood of conflict between members and non-members of the agreement.

3.3 A Policy Substitution Model of Coercion

In addition to simply increasing the occurrence of conflict, however, economic agreements and the processes they set in motion also change the nature of conflict between states. One of the posited causal mechanisms supporting the liberal peace holds that economic interdependence enables the use of non-violent conflict resolution mechanisms – particularly economic sanctions – to substitute for war (Drezner 2003; Garzke, Li and Boemer 2001; Morgan and Schwebach 1997; Morgan, Palmer, and Miers 2000; Verdier 2004). Insofar as economic agreements promote commerce and interdependence between member states, implications can also be drawn about the type or conduct of conflict between states. Indeed, members of economic agreements appear (on the surface) to be better suited to substituting economic sanctions for violent conflict given the formal nature of their agreement.

In evaluating the influence of economic agreements on conflict, I adopt a policy substitution framework in the spirit of Most and Starr (1984; 1989; 2000) and specifically applied to interdependence by Gartzke, Li, and Boehmer (2001). The essence of policy substitution is that states may pursue foreign policy goals using several different means. States possess a menu of options with which they may address foreign policy issues. Economic interdependence expands the options for conflict resolution by enabling the effective use of economic sanctions as either a tool of punishment or as a costly signal (Gartzke, Li, and Boehmer 2001, 400).

Economic integration agreements are structural characteristics shaping the menu of conflict management options available to states in this framework. Overall, states that enter into agreements expect increases in interaction and revisions in bilateral economic salience. Agreements not only serve as vehicles to promote commercial exchange, but also signal commitments to particular policies and patterns of exchange. Consequently, a degree of sensitivity and vulnerability is inherent within the agreement itself, but also increases as economic interdependence is realized (Keohane and Nye 1977). Material benefits conferred by such relationships, or the perception thereof, fundamentally alter the decision-making calculus within states. Within the universe of potential responses to conflict, particular alternatives are more attractive compared to others based on the ability of states to inflict harm and withstand retaliation (Starr 2000, 132; Cioffi-Revilla and Starr 2002, 232; Gartzke, Li, and Boehmer 2001, 400; Stein 2003, 118). Using this approach, I develop a bargaining model approximating the decision-making process as a challenger state chooses between economic sanctions and militarized conflict to coerce others. While alternative gradations of coercion are possible, this simplified framework

models two of the more prevalent and costly mechanisms used by states to influence others.

The general model representing the escalation of coercive tactics, depicted in Figure 3.2, employs two nations – “Challenger” (C) and “Defender” (D). Nature first selects the Defender’s type from a distribution such that it is weak with probability p or strong with probability $(1 - p)$. Weak Defenders acquiesce to all the Challenger’s demands while strong Defenders acquiesce only to weak demands. While the Defender is fully aware of its type, the Challenger has only a belief based on nature’s probability draw. Strength in this general model simply refers to the ability of the defender to resist the coercive tactics of the initiator. The order of play is depicted in Figure 3.2 and begins with the Challenger determining exactly the size of concession to demand from the Defender by selecting $x \in [0,1]$. Following this, the Defender either resists or acquiesces. If the Defender acquiesces, the game ends with the Challenger receiving x and the Defender $1-x$. Should the Defender resist, however, the Challenger must decide to use either sanctions or war as a coercive tool. If the Challenger attacks the Defender with military force, the target collapses with probability \underline{q} if weak and \bar{q} if strong, where $\bar{q} < \underline{q}$. Furthermore, both states incur a non-zero cost θ_c and θ_d respectively reflecting forgone trade, investment, and economic activity associated with warfare. If the Defender collapses, the Challenger receives the entirety of the good less the cost of war $(1-\theta_c)$ while the Defender receives nothing, but suffers the cost of war $(-\theta_d)$. If the Defender does not collapse, however, it wins the contest and the payoffs are reversed such that the Challenger incurs the costs $(-\theta_c)$ with no positive payoffs and the Defender retains the good in question $(1-\theta_d)$.

Likewise, economic sanctions carry a non-zero cost for both Challenger and Defender of γ_c and γ_d respectively reflecting the forgone gains from trade, investment, and other economic activity. I assume the costs of war are strictly more severe than sanctions ($\theta_c > \gamma_c$ and $\theta_d > \gamma_d$). Defenders fold under the weight of sanctions with probability $\underline{q}\lambda$ if weak and $\overline{q}\lambda$ if strong, where $\lambda \in [0,1]$ is a constant reflecting that economic force is strictly less likely to result in the Defender's collapse than military force. Consequently, $\underline{q}\lambda < \underline{q}$ and $\overline{q}\lambda < \overline{q}$. If the Defenders collapses, the Challenger receives the whole payoff less the cost of sanctions ($1 - \gamma_c$). The Defender, in turn, receives the cost of sanctions $-\gamma_d$ and no payoffs. Successful Defenders, however, do not collapse and receive $(1 - \gamma_d)$ and the Challenger only the negative cost of the sanction ($-\gamma_c$). Regardless of target type or mechanism employed, the game ends once the Challenger employs any form of coercion.

Given this setup, in the advent of economic coercion, the Challenger's generic payoff is $\lambda q(1) + (1 - \lambda q)(0) - \gamma_c = \lambda q - \gamma_c$ and the Defender's $\lambda q(0) + (1 - \lambda q)(1) - \gamma_d = 1 - \lambda q - \gamma_d$. The corresponding utilities for the use of military force for Challenger and Defender are $q - \theta_c$ and $1 - q - \theta_d$ respectively. Being uncertain of the Defender's strength, however, the Challenger must base its decisions on the expected utilities of both outcomes. The expected utilities for the Challenger are $EU_c(\text{sanctions}) = p\underline{q}\lambda + (1 - p)\lambda\overline{q} - \gamma_c$ and $EU_c(\text{military}) = p\underline{q} + (1 - p)\overline{q} - \theta_c$.

3.3.1 Equilibria

I solve the preceding model using perfect Bayesian equilibria that assumes all players are sequentially rational based on their beliefs throughout the game (Morrow 1994). Using this process, the critical decision is the Challenger's choice between using

military force and economic sanctions. Given the utilities identified in the prior section, the Challenger chooses economic sanctions when the following condition (labeled ξ for convenience) holds:³

$$\xi = p \leq \frac{(\theta_c - \gamma_c) + (\bar{q} - \lambda\bar{q})}{(\underline{q} - \bar{q})(1 - \lambda)}$$

If ξ is satisfied, the Challenger prefers to use economic sanctions rather than military force to coerce the Defender. If ξ is not met, meaning p breaches the threshold value, the Challenger prefers military force.

Two properties of ξ are particularly important in understanding the use of economic sanctions or military force. First, the value of ξ decreases as $\gamma_c \rightarrow \theta_c$. In other words, if the cost of economic sanctions approaches the cost of military force, there are fewer values of p that warrant the Challenger using economic sanctions. This makes intuitive sense, as situations in which sanctions are highly costly to the Challenger without improving the odds of success are unlikely to yield economic coercion. Second, if λ is sufficiently low – meaning the Defender is very unlikely to collapse from economic sanctions – fewer values of p satisfy ξ . This once again makes intuitive sense. If sanctions are very unlikely to compel policy change in the Defender, there is no value of p for which the Challenger will impose sanctions.

Figure 3.3 graphically illustrates these two properties by plotting the threshold below which the Challenger opts for sanctions (ξ) against the sanctions effectiveness expressed as a percentage of the effectiveness of military force (λ). The four lines in the graph are four cases of γ_c each expressed as percentages of θ_c . As the figure indicates, sanctions must be at least as effective as they are costly in order to render them viable

³ Proofs all of calculations are contained in the appendix.

policy alternatives for the Challenger. As might be expected, sanctions that are generally ineffective (between 20% and 40%) can still be viable policy options for a Challenger if inexpensive (20% the cost of military force). As the cost of sanctions grows, however, the Challenger is less willing to choose them given that they are less effective than military force. If sanctions are highly costly (80% the cost of military force), the Challenger demands sanctions be relatively likely to collapse the Defender.

There are a finite number of proposals the Challenger considers depending on the value of ξ . First, if $p \leq \xi$ indicating economic sanctions are preferred, the Challenger proposes either a relatively large value of x , denoted \bar{x}_e , or a relatively small value denoted \underline{x}_e where $\bar{x}_e \equiv \lambda \underline{q} + \gamma_D$ and $\underline{x}_e \equiv \lambda \bar{q} + \gamma_D$ respectively. Overall, the Defender acquiesces to \underline{x} with certainty and to \bar{x} only when it is sufficiently weak. If $p > \xi$, indicating the Challenger prefers military force, the corresponding values of \bar{x}_m and \underline{x}_m are $\bar{x}_m \equiv \underline{q} + \theta_D$ and $\underline{x}_m \equiv \bar{q} + \theta_D$ respectively.

If the Challenger proposes either \underline{x}_e or \underline{x}_m , the Defender acquiesces regardless of type, as it can do no better by resisting. The challenger may gamble and make a bold demand (\bar{x}_e or \bar{x}_m), however, if it believes the defender sufficiently weak. Specifically, the Challenger issues the bold demand \bar{x}_e only if it believes the Defender weak, signified by the equation below (labeled \hat{p}_e for convenience):

$$\hat{p}_e = p \leq \frac{\gamma_c + \gamma_d}{\lambda(\underline{q} - \bar{q}) + \gamma_c + \gamma_d}$$

Likewise, the Challenger issues the bold demand \bar{x}_m in conjunction with military force when the following (labeled \hat{p}_m) holds:

$$\hat{p}_m = p \leq \frac{\theta_c + \theta_d}{\underline{q} - \bar{q} + \theta_c + \theta_d}$$

The equations for \hat{p}_e and \hat{p}_m indicate an item of particular interest concerning the Challenger's choice regarding which demand to make. Both equations indicate that the higher the cost of conflict, the lower the values of \hat{p}_e and \hat{p}_m . In other words, if $\theta_d, \theta_c, \gamma_d, \text{ or } \gamma_c$ increase (holding $\underline{q} - \bar{q}$ constant), fewer values of either equation justify the Challenger gambling by issuing a bold demand. This makes intuitive sense, as the more costly the choice to coerce, the less likely the Challenger is to do so.

Given this setup, four equilibria follow given combinations of ξ and \hat{p}_e and \hat{p}_m . Table 3.1 summarizes the equilibria as a function of the Defender's strength and associated threshold conditions. In the first equilibrium, the Challenger prefers economic sanctions to military force. This preference may reflect several possible situations. Defenders may be particularly vulnerable to economic sanctions such that $\lambda q \rightarrow q$, meaning sanctions can be employed effectively. Alternatively, γ_c may be particularly costly, in turn encouraging the use of military force as a policy strictly more likely to compel the Defender to acquiescence. The choice of sanctions in this model may also indicate a combination of these two factors. Likewise, the Challenger is sufficiently convinced of the Defender's strength to warrant the lesser demand \underline{x}_e . As with the choice between sanctions and military force, this may be due to several factors, the most straightforward of which is a relatively high likelihood that the Defender is strong and will resist economic sanctions. The cost of sanctions, alternatively, may be relatively low such that the Defender is likely to resist the Challenger's demand. That is, if sanctions do not inflict sufficient harm on the Defender (or Challenger), they are unlikely to compel

the Defender to submit. As per the setup of the model, both Defender types acquiesce if the Challenger issues a weak demand. The Challenger also opts for economic sanctions in the second equilibrium for similar reasons. In this situation, however, the Challenger believes the Defender is weak enough to issue the bold demand \bar{x}_e . The second equilibrium can result from relatively high costs for either the Challenger or Defender (γ_c and γ_d). Again, per the Defender's type, it acquiesces if weak and resists if strong in the second equilibrium.

The next two equilibria reflect situations where the Challenger prefers military force to economic sanctions. This may be because sanctions are either too costly or unlikely to succeed in collapsing the Defender. As $\gamma_c \rightarrow \theta_c$, the Challenger is more likely to view military force as the utility maximizing strategy given the relative cost and increased likelihood of collapsing the Defender. If $p \leq \hat{p}_m$, indicating the Challenger believes the Defender relatively strong, it makes the weaker demand to which both types acquiesce. If $p > \hat{p}_m$, however, the bold demand is issued that only the weak Defender accepts. The intuition behind the choice of demand parallels the prior discussion on economic sanctions. Relatively high costs for either Challenger or Defender (θ_c and θ_d) reduce the incentive for the latter to resist.

The equilibria discussed above reveal several interesting relationships relevant for evaluating the influence of economic agreements on interstate conflict. First, higher costs of sanctions *or* military force for either a Challenger or Defender decreases the likelihood that either policy comes to fruition. That is, the more costly a coercive action is the less likely the Defender is to resist demands and force the Challenger to impose sanctions or to use military force. Second, the Challenger is less likely to use economic sanctions as

$\gamma_c \rightarrow \theta_c$. Consequently, as the cost of sanctions approaches the cost of war – as might be expected in highly interdependent relationships – Challengers prefer military force.

Third, Challengers are more likely to use economic sanctions as they increase in effectiveness (i.e., as λ increases).

Understanding the empirical implications of the model is therefore directly related to the cost of sanctions, their effectiveness, and the relationship between the two parameters. The cost and effectiveness of sanctions, in turn, is a direct reflection of a state's ability to meaningfully disrupt trade flows with others while limiting self-imposed damage (Hirschman 1981; Wallenstein 1968; Baldwin 1985; Drezner 1999; Drezner 2003; Allen 2008; Jing, Kaempfer & Lowenberg 2003). This suggests important aspects of the relationship between the cost and effectiveness of sanctions – or the relative relationship between λ , γ_d and γ_c . The cost of sanctions is directly related to the economic harm the Challenger can inflict upon the Defender. In order for harm to befall the Defender, however, a meaningful trade relationship must exist between the states such that both will be hurt if action is taken. In turn, it may be possible (or likely) that γ_d and γ_c vary in tandem. However, while γ_d and γ_c may move in the same direction, it does not follow logically that the rate of movement is identical between the two. While the cost of sanctions may increase between Challenger and Defender with the degree of trade, either party may be more vulnerable to disruption. One state may be more vulnerable if it is more reliant on the other for imports or exports as a proportion of their total economy or has relatively few trade alternatives (Hirschman 1981; Crescenzi 2003a; Crescenzi 2003b). Such may be the case when sanctions are imposed by large economies on relatively small one, as the former is better able to reorient production and trade to

account for losses (Hufbauer, Schott and Elliot 2007). Likewise, trade in sensitive products may result in asymmetrical vulnerability. Despite having a larger economy, it can be argued the United States was more vulnerable to disruptions levied by the 1973 oil embargo than other developed countries.

The same logic suggests the effectiveness of economic sanctions is directly related to the Defender's cost of sanctions. That is, while γ_d and γ_c may not move in lockstep, it is likely that the probability of the Defender collapsing from economic sanctions is closely related to the cost of sanctions such that λ increases (decreases) as γ_d increases (decreases). Sanctions that are highly costly to the Defender are also likely to be highly effective in compelling policy change (Hirschman 1981; Baldwin 1985). Indeed, it is often the case that states involved in sanction episodes – both Challenger and Defender – weight the opponent's potential costs and payoffs relatively heavily (Tsebelis 1990).

Given the relationships between the cost of conflict to both parties and the effectiveness of sanctions (γ_d , γ_c , θ_d , θ_c , and λ), the influence of economic interdependence and agreements on the type of conflict witnessed between agreement members is likely conditioned on the relative economic position of states involved in the dispute. To help interpret these effects, Figure 3.4 plots the simulated probability of particular actions by the Challenger given the economic (inter)dependence of Challenger and Defender.⁴ Each panel plots the thresholds associated with particular strategies by

⁴ These graphs were generated using simulated data. Cost parameters θ_d and θ_c are drawn from a uniform distribution between 0 and 0.5 and a mean of 0.25. γ_d and γ_c are derived by multiplying θ_d and θ_c respectively by a parameter drawn from a uniform distribution, thereby creating two variables with exponential distributions between 0 and 0.5 with means of 0.125. This ensures γ_d and γ_c are correlated with but distinct from θ_d and θ_c . λ is derived in a similar fashion by multiplying γ_d by another uniformly distributed variable, again ensuring correlation. Finally,

the Challenger according to the particular parameters of interest in calculating ξ , \hat{p}_e and \hat{p}_m . The y-axis the probability of the Challenger adopting particular strategies, i.e. economic or military coercion and the associated decisions to make bold or weak demands.

Consider first the top panel of Figure 3.4 that plots the use of economic sanctions or military force by the Challenger. In this figure, the area *above* the line reflects the values of p for which the Challenger uses military coercion as given by ξ . The area below the line, in turn, indicates values of p that lead to the use of economic coercion. The two key concepts necessary to understanding this calculation – the effectiveness of sanctions (λ) and the difference between the Challenger’s cost of war (θ_c) and sanctions (γ_c). Note first that the effectiveness of sanctions, λ , has a relatively mild, but nonetheless significant effect on the Challenger’s decision between economic and military coercion. Challengers are more likely to use economic coercion as the effectiveness of economic sanctions increases given positive influence of λ . Differences in the cost of military and economic coercion, however, have a much stronger influence on the Challenger’s choice. As $\theta_c - \gamma_c$ increases, the area underneath the line expands indicating the Challenger is more likely to prefer economic sanctions over military force. Intuitively, this condition could be fulfilled if either the cost of military coercion is sufficiently high or the cost of sanctions sufficiently low. If military coercion is too costly, in other words, the Challenger may attempt “foreign policy on the cheap” by using

\bar{q} and \underline{q} are drawn from uniform distributions with means of 0.25 and 0.75 respectively (standard deviations of 0.05). ξ , \hat{p}_e and \hat{p}_m are then calculated according to their respective formulas.

economic sanctions. Likewise, if economic sanctions are inexpensive, Challengers may utilize them more frequently.

The bottom left panel depicts the Challenger's decision to make the weak or bold demand once it has decided to use economic coercion. Recall that all Defenders acquiesce to the weak demand (\underline{x}_e) while only weak Defenders acquiesce to the bold demand (\bar{x}_e). Consequently, the Challenger's decision to make the bold demand results in the possibility it will impose economic sanctions if a strong Defender resists. The area *above* the lines in this panel reflect the range of p values for which the Challenger issues the bold demand \bar{x}_e . First, increases in the effectiveness of sanctions (λ) and their cost to the Defender (γ_d) increases probability the Challenger issues the bold demand – and therefore risks imposing economic sanctions. Of these two parameters, λ appears to be the stronger influence on the Challenger's decision, although both exhibit noteworthy pressure on the bold/weak demand dynamic. The logic behind both elements is relatively straightforward. If sanctions are either highly costly to the defender or effective relative to military force, the Challenger is more confident the Defender is weak and will acquiesce. Second, as the Challenger's cost of sanctions (γ_c) increases, the probability the Challenger issues the bold demand decreases. Costly economic sanctions encourage weak demands while inexpensive sanctions encourage bold demands. Taking these three elements together, the most likely scenario whereby sanctions are used is between a Challenger insulated from costs and a Defender highly sensitive to the cost of sanctions. Likewise, sanctions are least likely to be observed between an insulated Defender and vulnerable Challenger.

Finally, the bottom right panel plots the Challenger's decision to make the weak or bold demand once it has decided to use military force. Again, all Defenders acquiesce to the weak demand (\underline{x}_m) while only weak Defenders acquiesce to the bold demand (\bar{x}_m). The area *above* the lines in this panel reflect the range of p values for which the Challenger issues the bold demand \bar{x}_m and risks having to use military force. The effect of both the Challenger and Defender's cost (θ_c and θ_d respectively) have nearly identical influences on the decision between bold and weak demands. As the cost of military force increases for either Challenger or Defender, the probability of the Challenger making the bold demand decreases. This is to be expected with respect to the Challenger's costs, as more costly actions are likely to encourage more conservative behavior.

The impact of the Defender's costs, however, is somewhat counterintuitive, as we might expect increases in cost to encourage acquiescence. However, consider the bargaining scenario I lay out. Challengers set bold demands equal to $\bar{x}_m \equiv \underline{q} + \theta_D$ and weak demands equal to $\underline{x}_m \equiv \bar{q} + \theta_D$. The Defender's cost of conflict, therefore, enters equally into both demands. Differentiating the two demands is the probability the Defender will collapse given military force given by \underline{q} if weak and \bar{q} if strong (where $\bar{q} < \underline{q}$). Consequently, when the Defender faces high costs of conflict (and therefore vulnerable to coercion given my setup), the Challenger can gain nearly as much by making the weak as the bold demand without risking loss in conflict. In other words, vulnerable Defenders who stand to suffer in conflict can be effectively leveraged without making bold demands.

To further develop the implications of my model, Figure 3.5 considers the interplay of the model's parameters by displaying how economic relationships and

interdependence influence the Challenger's choice of coercive policies.⁵ The vertical axis represents the Challenger's level of economic dependence (the main driver of γ_C and θ_C) while the horizontal axis represents the Defender's dependence (the main driver of γ_D and θ_C). Four quadrants indicate the economic relationship between the two parties and the coercive strategies that are likely preferable. Note first that interdependence is insufficient to determine whether the Challenger prefers economic or military coercion. Rather, the choice of economic or military coercion is instead primarily a function of the difference in costs ($\theta_C - \gamma_C$) as discussed previously.

Important implications regarding the likelihood of observing military or economic coercion (i.e., the likelihood of the Challenger issuing bold demands) can be gleaned from the model, however. Quadrant I in the top left is characterized by a relatively dependent Challenger and independent Defender. In this scenario, the Challenger lacks the economic leverage to make sanctions effective as it is commercially dependent on the Defender. Consequently, economic sanctions are least likely in this case while military force is possible. Contrast this with quadrant IV in the bottom right. Here the Defender is dependent on the Challenger and possesses a high cost of conflict. The Challenger, however, is relatively autonomous with a low cost of conflict. Given the disparity in cost, sanctions are likely more effective and relatively less costly for the Challenger, overall increasing the likelihood they will be employed. Military force, however, is still possible in this dynamic.

Quadrant II reflects two states that are economically interdependent. As such, both experience high costs from conflict. As Figure 3.5 demonstrates, increases in both the Challenger and Defender's cost of war discourage the use of military force. Hence, if

⁵ The implications in Figure 6 are based off the same calculations that derived Figure 5.

both states are economically vulnerable, military force is least likely between interdependent states. Economic sanctions, while possible, are no more or less likely to be imposed than in other scenarios. Finally, quadrant III compliments quadrant II by considering two states with little economic interdependence. Military force is more likely to be used in this scenario given the relative independence of states. Defenders cannot be economically leveraged given their insulation. Challengers, on the other hand, suffer relatively little from engaging in military coercion. Again, sanctions are no more nor less likely to be imposed per the results of the formal model.

3.3.2 Implications

In applying this to economic agreements, consider first the relationship between two states in the same agreement. Economic agreements tend to promote trade and investment between members, signal long-term commitments to liberal economic policies, and otherwise draw member states together such that economic interdependence increases. It is likely the case, as a result, that both economic sanctions (γ) and military force (θ) prove more costly for Challengers and Defenders. As a result, disputes between agreement members are likely to result in acquiescence by the Defender given the potential cost to both parties. Or putting this in the language of my model, increased interdependence reduces the range of values for \hat{p}_e or \hat{p}_m for which the Challenger is willing to gamble by issuing a bold demand. This lends additional weight to Hypothesis 1 discussed in the previous section.

That said, this suggests a more nuanced approach to conflict by the parties involved rather than a wholesale rejection of conflict between members of economic agreements. The economic interactions fostered by economic agreements may promote

either *interdependence* or simple *dependence* between member states. Dependence and asymmetrical commercial relations can manifest through several possible mechanisms. First, some agreements (notably shallow ones) are often particularistic in the sense they do not fully liberalize trade relations. Partial scope agreements in particular may not be reciprocal in that they often require more opening measures by a subset of states in the agreement. Very often these agreements are designed to improve market access for less developed countries. For example, the African, Caribbean, Pacific – European Community agreement (APC-EC) signed in 1963 and expanded in 1975 provides seventy-nine developing states with market access to European Community states for certain goods. The United States and Australia hold similar agreements within their respective spheres of influence (Whalley 1996, 5-6).

Second, even if agreements are reciprocal in nature, asymmetries may develop as certain states accrue a disproportionate share of benefits. Relatively economically strong states in agreements are often able to leverage their influence to the perceived detriment of the other members (Fernandez 1996). For example, Kenya proved the dominant state in the East African Community (which also contained Uganda and Tanzania) for most of its history. Given its port access and relatively developed infrastructure, Kenya was able to shift community policies to advantage its own firms through foreign direct investment and preferential trade terms (Nye 1963; Stock 2004, 445; Shilling 2005). Consequently, economic agreements can entrench the commercially central state and augment its economic leverage.

If economic agreements promote asymmetrical commercial relations, the implication for the type of conflict initiated by the dominant state is a tendency towards

sanctions. Asymmetrical relations between agreement members push the dominant and peripheral states in opposite directions in Figure 3.5. The dominant state tends towards quadrant IV, where the cost of sanctions is relatively low but the potential effectiveness high. Consequently, economically dominant agreement members are better positioned to use economic sanctions as a first-best coercive policy, leading to a third hypothesis:

H₃: Less economically dependent agreement members are more likely to use economic sanctions against other members as a tool of coercion.

More economically dependent agreement members, however, are pushed towards quadrant I. Sanctions are both costly and ineffective given their weaker commercial position. The cost of sanctions encourages dependent states to pursue other tactics as a first-best option. This is likely for two reasons. First, the more dependent state in the dyad cannot credibly use sanctions to compel the less dependent one due to its vulnerable position. Any economic punishment the dependent state visits on the less dependent state can be trumped by more forceful sanctions from the latter. Sanctions, therefore, are less likely to succeed when used by the more dependent state. This effect is likely compounded by the less dependent state's greater ability to use the trade network fostered by the agreement to divert trade lost through sanctions to other agreement members. As a result, dependent states may pursue military force as a first-best – or only – option to coerce other agreement members.

Second, the relative economic vulnerability of states in agreements may encourage them to frame exchange in terms of relative gains. Any relative gains that the dominant state accrues, furthermore, may be used against the dependent state in the form of military power. The codified nature of agreements compounds this problem by

signaling the persistence of relative losses. More dependent states, therefore, may view trade with less dependent states in a more negative light and attach less significance to it if sacrificed. Vulnerable states, therefore, face both higher costs from imposing sanctions given their relative dependency while simultaneously perceiving reduced costs of military action given relative gains concerns. Likewise, sanctions employed against more dependent members by those less dependent may be less likely to succeed given the negative influence of relative gains. Consequently, the relative difference in cost between military and economic coercion ($\theta_c - \gamma_c$) is likely lower for dependent agreement members vis-à-vis less dependent ones. As a result, dependent agreement members are more likely to use military force as a coercive tool:

H₄: More economically dependent agreement members are more likely to use military force against other members as a tool of coercion.

Agreements that promote symmetric commercial relations between members likely reside in quadrant II in Figure 3.5. Commercial exchange between member states increases interdependence in that both states derive benefits from their relationship. It is, therefore, more likely that any form of coercion is costly for both states. The effect of interdependence between symmetric agreement members on economic sanctions is ambiguous, as the Challenger and Defender's cost of sanctions (γ_c and γ_D) work in opposition. With respect to military force, however, increases in the cost of military force (θ_c and θ_d) both reduce the likelihood of observing military force. Given this, an additional hypothesis is stated as:

H₅: Symmetrically dependent agreement members are less likely to use military force against other members as a tool of coercion than asymmetrically dependent members.

Consider now relations between members and non-members of economic agreements. Recall that economic agreements marginalize the salience of member states with the external world as they tend to rely on intra-agreement trade for higher portions of their trade portfolio and economic activity. This is compounded to the extent trade diversion takes place, as it represents a direct and material shift in trade patterns away from non-members. Membership in an economic agreement is a signal of intent to pursue closer ties with particular states, which in turn may reduce the long-term salience of member/non-member relations. Consequently, states likely grow less interdependent as a result of economic agreements.

The broad implication of marginalization is to push members and non-members towards quadrant III in Figure 3.5. Interdependence is reduced to the extent trade ties are marginalized by the economic agreement. Economic agreements may also give risk to relative gains concerns and strategic vulnerabilities between members and non-members in ways that encourage states to view extant trade ties negatively, thereby reducing the overall cost of conflict further. While sanctions are likely low-cost, a lack of interdependence between Challenger and Defender limits the ability of economic sanctions to compel policy change. Economic agreements, by either materially affecting trade or altering the context within which it occurs, limits interdependence between members and non-members of agreements. Economic sanctions, when used between members and non-members of agreements, may fail to convey either the punishment or costly signal required to be successful. When engaging in conflict, therefore, the more effective option for states on opposing sides of an economic agreement may be the use of military force. Given this dynamic, my final hypothesis is stated as:

H₆: Economic agreements increase the likelihood of militarized conflict between members and non-members.

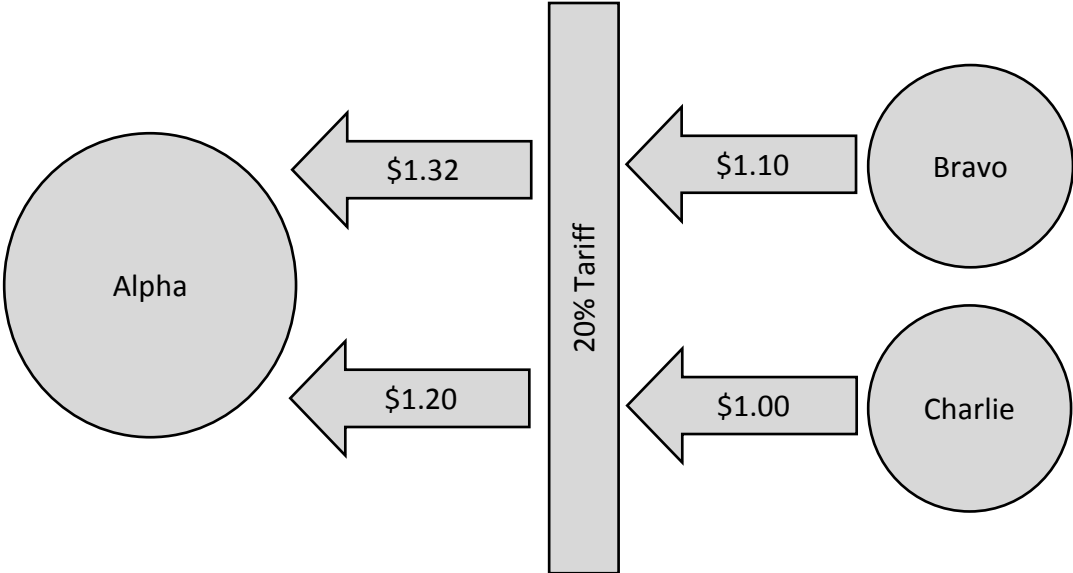
The hypotheses I have discussed in this chapter concern both the initiation of conflict and the method by which states engage in it. While initiation and means of conflict are not codetermined, they are certainly related phenomenon that requires careful treatment. In the remaining chapters, I present and implement a research design that attempts to account for the strategic interaction of initiation and type of conflict, as well as several other empirical necessities.

Table 3.1: Summary of Equilibria

Conditions	Challenger Strategy	Weak Defender Strategy	Strong Defender Strategy
$p \leq \xi$ $p \leq \hat{p}_e$	Economic Sanctions Sets $x = \underline{x}_e$	Acquiesce	Acquiesce
$p \leq \xi$ $p > \hat{p}_e$	Economic Sanctions Sets $x = \bar{x}_e$	Acquiesce	Resist (Sanctions Imposed)
$p > \xi$ $p \leq \hat{p}_m$	Military Force Sets $x = \underline{x}_m$	Acquiesce	Acquiesce
$p > \xi$ $p > \hat{p}_m$	Military Force Sets $x = \bar{x}_m$	Acquiesce	Resist (Military Force Employed)

Note: p is the Challenger's belief the Defender is weak, ξ is the threshold value of p above which the Challenger uses military force, and \hat{p}_e and \hat{p}_m are threshold values above which the Defender prefers to resist the actions of the Challenger. The Defender's strategies are determined by its type and are presented in this table for reference.

Wheat Prices Without Economic Agreements



Wheat Prices With Alpha-Bravo Economic Agreement

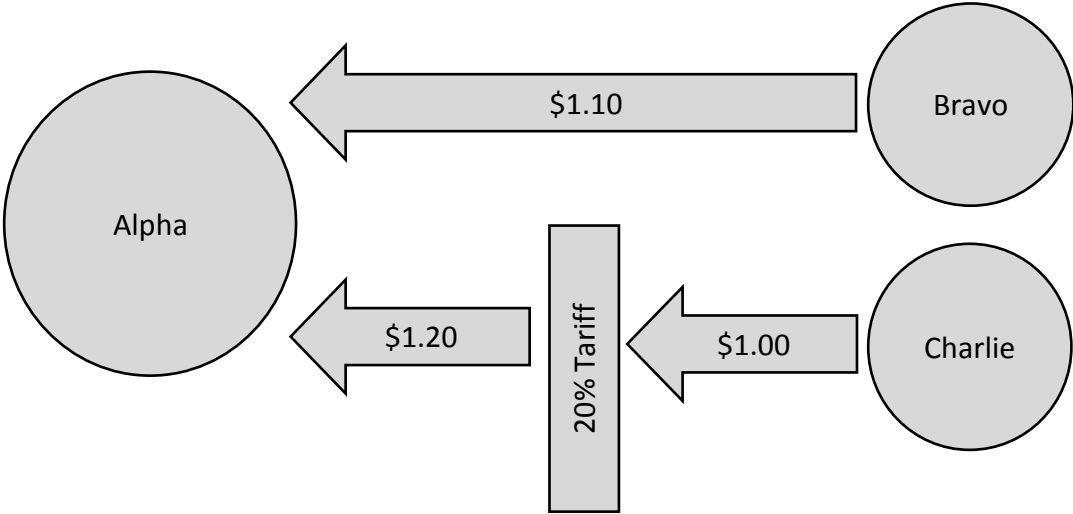


Figure 3.1: An Illustration of Trade Diversion

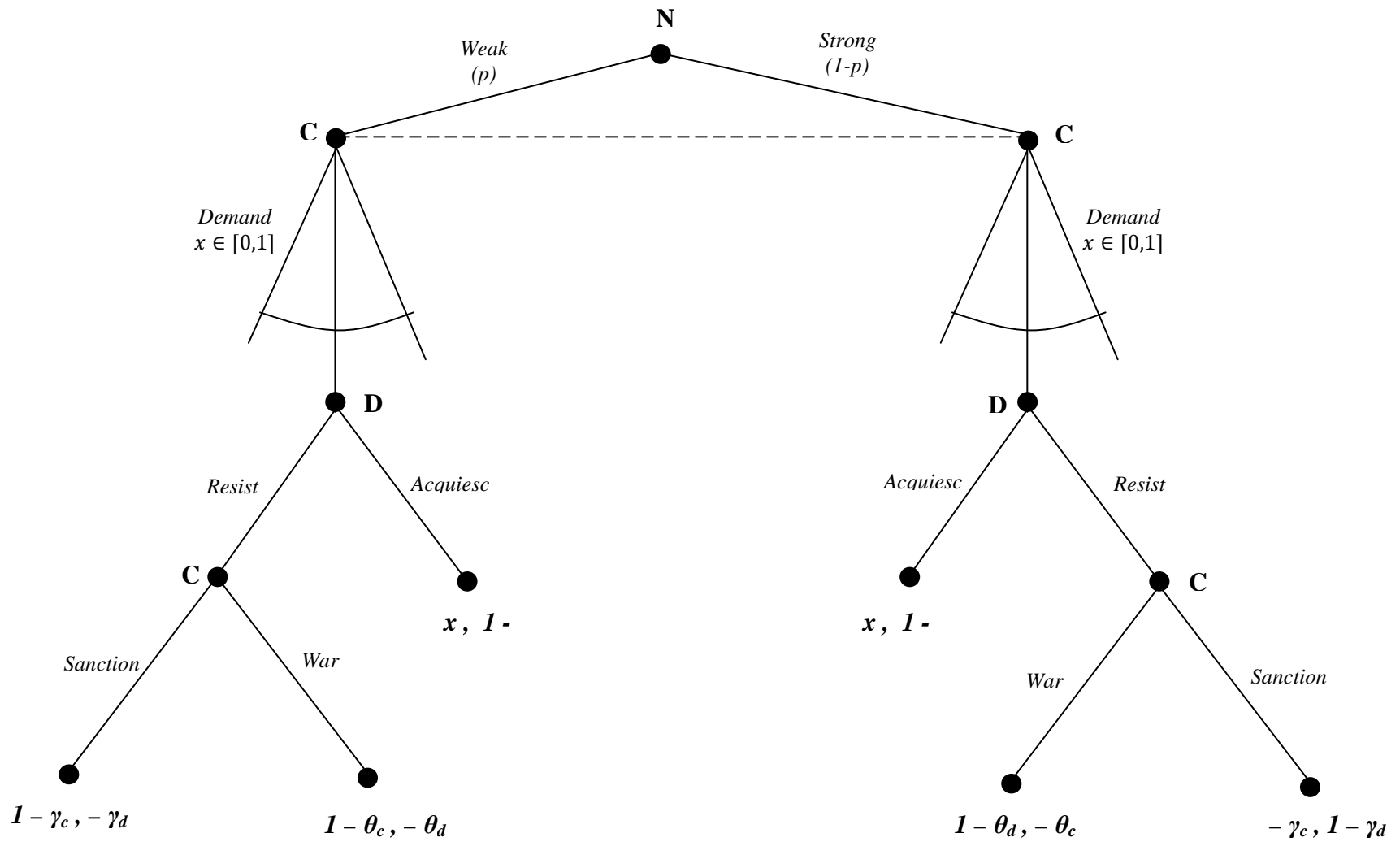


Figure 3.2: Policy Substitution and Coercion

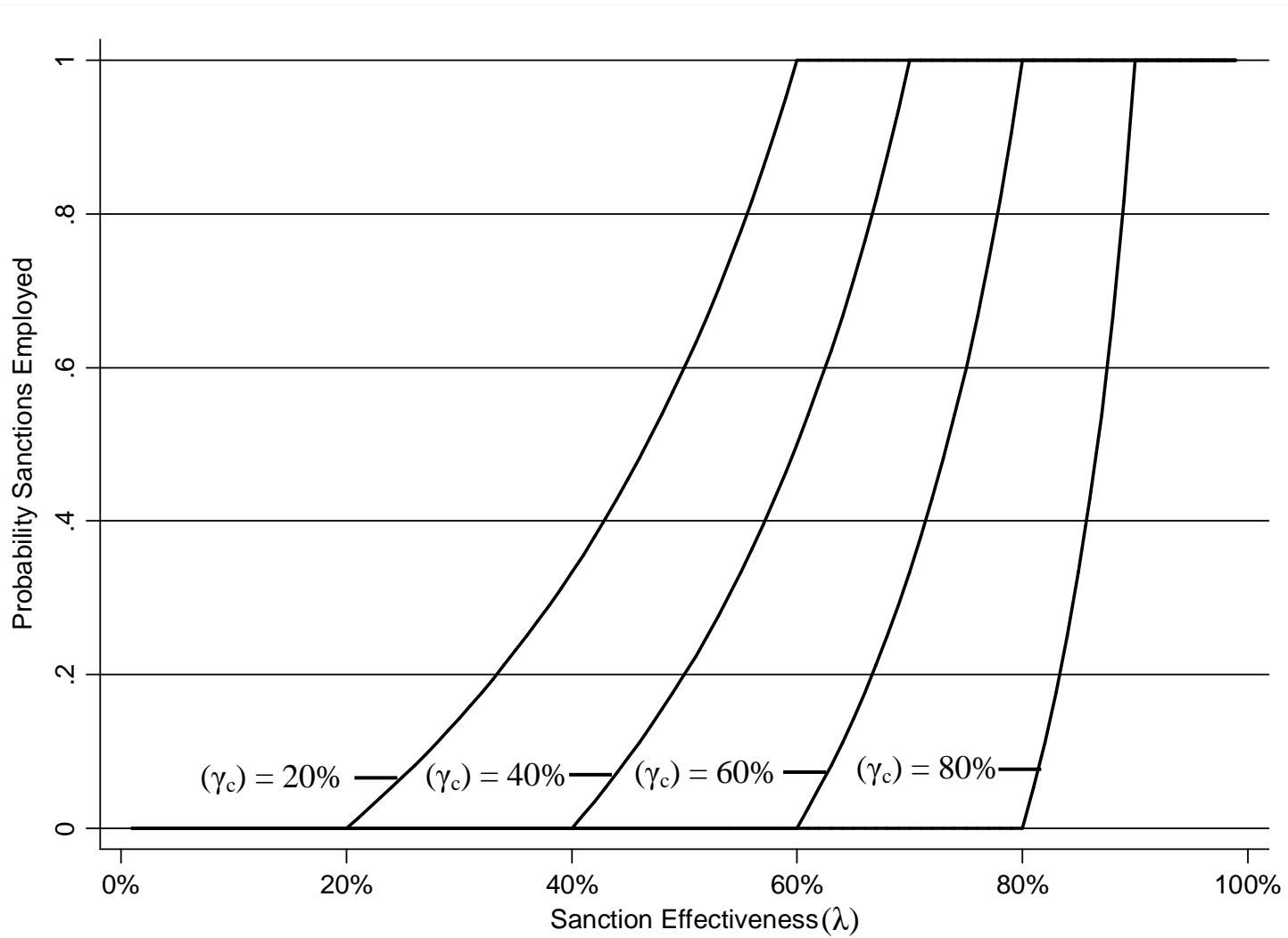


Figure 3.3: Economic Sanctions as a Function of Cost and Effectiveness (% of Military Force)

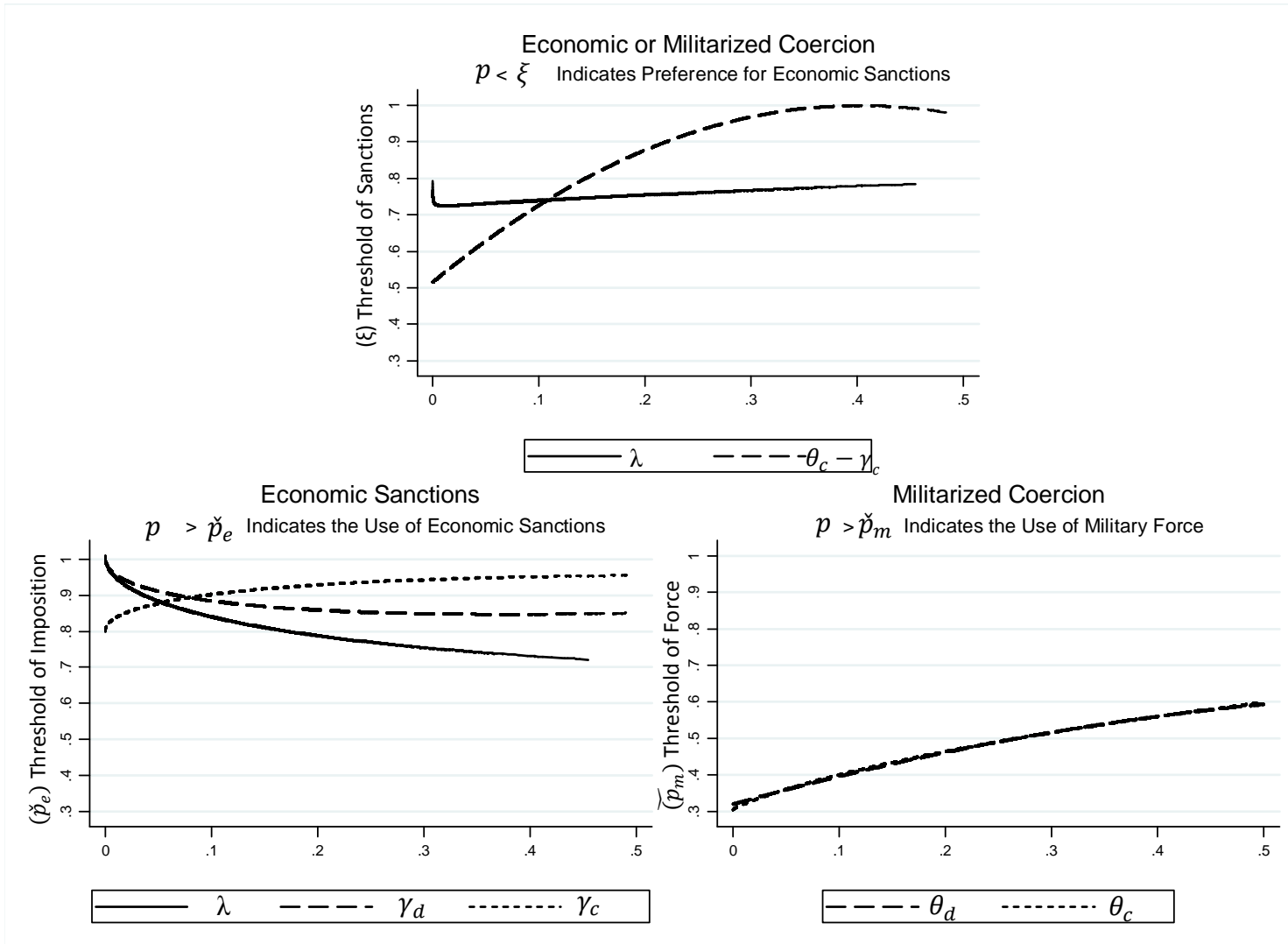


Figure 3.4: Implications of Parameters on Coercion

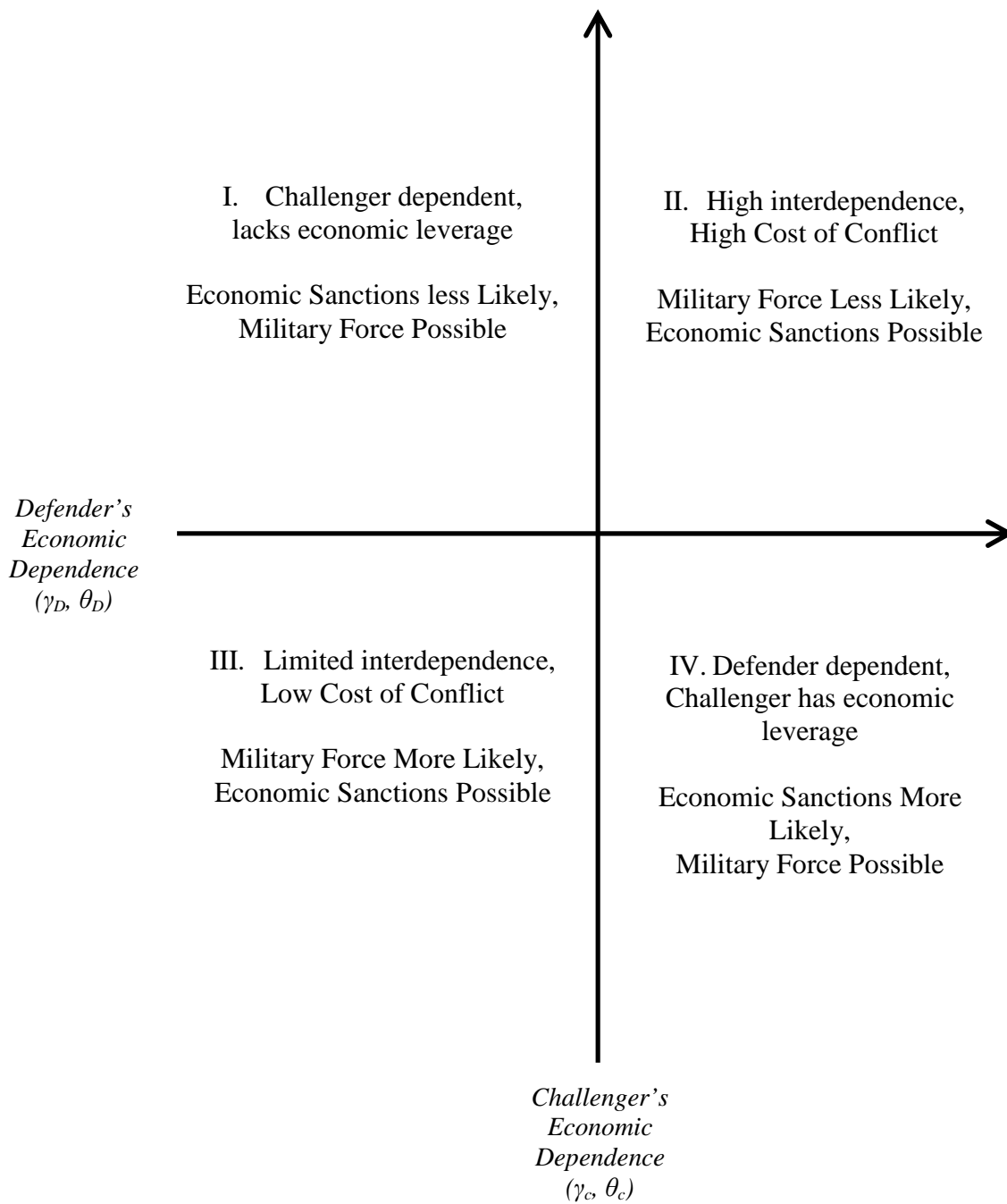


Figure 3.5: Interdependence and Coercive Instruments

CHAPTER 4

RESEARCH DESIGN: MODELING THE INFLUENCE OF AGREEMENTS ON INTERSTATE CONFLICT

My argument as outlined in the previous chapter requires a modeling strategy that addresses not only the onset of conflict, but also the type of strategy used by states in conflict. Furthermore, my formal model makes explicit the strategic interplay between the onset and strategies used in conflict. Hence, my empirical strategy involves a series of large-N statistical tests of all non-directed dyad-years from 1970 to 2001 evaluating the relationship between economic agreements and both the onset and strategies of conflict in a multifaceted approach. In particular, I propose to evaluate my hypotheses using military force and economic sanctions as primary dependent variables. To be sure, other types of conflict are possible between states – e.g., diplomatic disputes, economic inducements, and covert actions. The prevalence and assumed substitutability of military force and sanctions, however, make them ideal candidates for a first-cut study.

In this chapter I first outline the dependent variables I use in my analysis. Following this, I describe in detail my primary explanatory variables, including economic agreements, measures of trade (inter)dependence, and trade diversion. I then briefly discuss additional control variables necessary for sound statistical analysis. After discussing the variables, I outline my estimation strategies and consider how they capture the concept of foreign policy substitutability. In the final section I consider factors that

may potentially confound my empirical analysis, including missing data and spatial dependence, and how I address these issues.

4.1 Dependent Variables: Military Force and Economic Sanctions

In the most general sense, my analysis is concerned with the initiation and method of resolving conflicts between states. While numerous strategies are possible between states, it is often posited that economic sanctions may be substituted from military force as a means of coercing states (Hufbauer 1998; Schott 1998; Schwebach 2000; Garzke, Li and Boemer 2001). Consequently, I focus my empirical analysis on these two concepts as the primary mechanisms of interstate conflict. I hope to address additional forms of conflict and coercion in future work.

There are two key variables necessary for my analysis. First, I am generally concerned with both the occurrence of conflict *and* the strategies use by states when it does take place. As such, I consider a broad conception of military force that include threats as well as the use of force. It is common practice in conflict literature to limit the operationalization of military force to incidents where fatalities occur, as participants in many low-level disputes never intend their escalation to actual violence. My analysis is as much concerned with the *choice* of coercive instrument as the use of said instrument, however. While states may never intend for disputes to escalate beyond the threat of military force stage, I contend that a choice is implicit in the threat of using military force instead of economic sanctions. Alternatively stated, restricting my dependent variable to disputes where force is used eliminates useful information about the decision-making process that led to the threat of military instead of economic force. Consequently, I operationalize military force using participation in a militarized interstate dispute (MID)

within the dyad to include the threat, display, or use of force. I code this variable 1 if dispute occurs between states in the dyad year and 0 otherwise. I obtain data for this variable from the Maoz dyadic MID dataset (Maoz 2005).

Second, I consider economic sanctions in a similar manner by including both threats and imposition. My conceptualization of economic sanctions falls in line with Drezner's (2003, 643), who defines it as "the threat or act by a sender government or governments to disrupt economic exchange with the target state, unless the target acquiesces to an articulated demand." Because I am interested in the substitutability of military force and sanctions, I only include politically motivated sanctions in our analysis. The rationale of this decision is simply that economic issues exclusively are unlikely to escalate to military force. I code a variable 1 if economic sanctions are threatened or imposed for political reasons in a dyad in a given year and 0 otherwise using the Threats and Imposition of Sanctions (TIES) dataset (spanning from 1970 to 2001) (Morgan, Krustev, and Bapat 2009).

Hypotheses 1 and 2, in particular, cite "conflict" generally without reference to a particular instrument of coercion. Evaluating these two hypotheses, therefore, requires an approach to the conflict process general enough to capture incidents beyond militarized disputes. I conceptualize this broader variable – called "conflict initiation" – as the use of *either* sanctions or military force. Consequently, I code conflict initiation 1 if either a sanction or a MID occurs in a given year and 0 otherwise.

4.2 Explanatory Variables: Agreements, Interdependence, and Diversion

My argument makes reference to many economic interactions between states. While economic agreements is my primary variable of interest, my theory also considers

the material relationships between states as an important component of their overall conflict behavior. Indeed, economic agreements influence these material relationships by affecting trade and investment decisions between states. As such, I specify a series of explanatory variables capturing the complex economic relationships between states.

4.2.1 Economic Integration Agreements

The unifying element across all aspects of my analysis is the conceptualization and operationalization of economic agreements. In general, the concept is broadly similar to the conventional use of regional trade agreements. The World Trade Organization defines a regional trade agreement as a territory that maintains separate tariffs or regulations for a “substantial part of the trade of such territory” (WTO 1994, Article XXIV). In short, economic integration agreements are formal arrangements between states designed to lower barriers to trade. In practice, however, the concept is stretched somewhat by the states that employ such agreements. Furthermore, some degree of difference often exists between the stated goal of integration that is formally reported to the WTO and the realized degree of integration experienced by the agreement. This leads to a number of conceptual difficulties with respect to the level of economic integration between states. First, I expand the Mansfield and Pevehouse (2000) dataset by dividing agreements from 1950-2001 into five basic groups according to the specific policy measures associated with each level based largely on Bela Balassa’s (1962) taxonomy. Balassa divides agreements into five levels – free trade areas, customs unions, common markets, economic unions, and total economic integration in order from least to most integration. In creating my taxonomy, I modify two aspects of this scale. First, I add a category capturing “partial scope agreements,” which cut trade barriers between

states but fail to do so on a “substantial part of the trade of such territory.” Second, I collapse the economic union and total economic integration categories, as it is highly debatable whether any agreement achieves the highest degree of integration on Balassa’s scale. The five levels of integration are briefly described below while Table 4.1 provides a simple graphic illustration of the relationship between the types of agreements:

Partial Scope Agreements (PSA): Marginal reductions in tariffs for certain goods.

Free Trade Area (FTA): Elimination of tariff barriers on a majority of goods.

Customs Union (CU): Elimination of tariffs and adoption of common external tariffs.

Common Markets (CM): A customs union and the free movement of labor and capital.

Economic Unions (EU): A common market and harmonization of domestic policies and currency.

I also make informed judgments as to the effective level and timing of integration achieved by agreements vis-à-vis the stated goal of such agreements based on historical analysis of individual institutions. For example, despite the initial goal creating an economic union, the Commonwealth of Independent States remains largely a partial scope agreement (CIS 2013; WTO 2013). Judgments such as this concerning the effective level and timing of implementation were made following extensive research on agreements by the author using national, WTO, and scholarly sources.

It is also important to note that my conceptualization and operationalization of economic agreements does not include the WTO as a valid agreement type. The WTO requires reciprocity in trade policy for all member states. Economic agreements, however, are an exception to this rule. Article XXIV of the General Agreement on Tariffs and Trade permits states to form regional trade agreements (or simply economic

agreements) provided they do not raise barriers to commerce with non-agreement members after creation. Consequently, economic agreements more extensively liberalize trade between members when compared to the WTO. Alternatively a stated, economic agreement in my analysis refers to arrangements that go beyond the WTO in liberalizing trade between states.

Hypotheses 1, 3, 4, and 5 evaluate intra-agreement conflict dynamics. Consequently, I code a series of variables capturing the shared agreement relationship between states. I specify three separate variables capturing economic agreement status. The first variable is an ordinal measure of agreements from 0 (no agreement) to 5 (economic union) according to this taxonomy. The next two variables divide agreements into “shallow” (PSA and FTA) and “deep” (CU, CM, and EU) arrangements.⁶ Differentiation between shallow and deep is based on the degree of cooperation required. While trade PSAs and FTAs simply require the elimination of barriers, custom unions and beyond require states to change trade policy vis-à-vis *all* states, and hence require more political capital. Alternatively stated, shallow agreements require the “negative” cooperation where barriers to commerce are removed. Deep agreements, on the other hand, require “positive” cooperation where states must create common policies vis-à-vis third parties. PSAs and FTAs only remove barriers while customs unions and beyond require coordinated action by definition. Consequently, differentiating shallow and deep by the agreement level is a useful and appropriate course of action.

Hypotheses 2 and 6 evaluate extra-agreement conflict dynamics between agreement members and non-members. Consequently, the primary explanatory variable in these cases is the presence of an economic agreement within the dyad. Because I am

⁶ I also test my hypotheses using a pure five-tier classification system.

interested in how economic agreement members relate to non-members, two dyadic relationships are important. First, only one state in a dyad may be a member of an agreement – which I will refer to as “*one agreement dyads*.” Second, both states may be members of separate economic agreements – which I will call “*opposing agreement dyads*.” I code a dichotomous variable for each of these groups separately. In this way, dyads without agreements serve as a baseline, comparison group.

Two items are important to note in the coding of these variables. First, dyads where both states are in the same agreement (i.e., the United States and Canada in NAFTA) are coded 0 for both one agreement and opposing agreement variables. Consequently, states that share an agreement but also have other agreements they do not share in common are not considered one or opposing agreement dyads. Second, not all agreements are threats to every state. An agreement between Paraguay and Uruguay is more salient to Argentina than Thailand. Consequently, I only consider “economically relevant” agreements where the non-member is either contiguous to or a top 10 trade partner of an agreement member.

Figure 4.1 illustrates the two types of dyadic relationships between members and non-members. Consider first one agreement dyads as depicted in the top half of the figure. Argentina and Brazil are both members of Mercosur. Peru, however, is not a member of any economic agreement. In this instance, both the Argentina-Peru and Brazil-Peru dyads are coded as one agreement dyads, as only one state in each dyad is a member of any agreement. The bottom half of the figure illustrates opposing agreement dyads. Here again Argentina and Brazil are members of Mercosur. Peru, however, has joined the Andean Community with Columbia and several other states. Because they are

in different, non-overlapping agreements, both the Argentina-Peru and Brazil-Peru dyads are coded as opposing agreement dyads.

4.2.2 Trade Interdependence and Asymmetry

My theory hinges not only on agreements proper, but also the economic relationships that exist between states. In other words, economic agreements structure both the material relationships between members (and non-members) and how they are viewed by each. Three additional concepts are important in this regard. First, trade interdependence captures the extent to which states in the dyad interact, which is important for traditional notions of opportunity cost. Interdependence in terms of conceptualization is more than simply interactions between two states. It instead implies a complex association between states where both face “costly effects,” in the words of Keohane and Nye (1977), and consequences are inherent in their relationship. Key to understanding the role of economic interdependence in interstate conflict are capturing these implicit consequences for policymakers and political institutions. The value states place on economic interactions, however, is unobservable, which in turn leads to a multitude of possible operationalizations that vary by research design and individual preference.

Two major approaches exist for measuring interdependence as a concept. The most popular operationalization in the literature comes from Russett and Oneal (1997; 1999; 2001). The authors consider trade interdependence a function of how important a bilateral trade link is to the overall economy of the state, given by:

$$\text{Dependence}_i = \frac{\text{Imports}_{ij} + \text{Exports}_{ij}}{\text{GDP}_i} = \frac{\text{Trade}_{ij}}{\text{GDP}_i}.$$

Trade interdependence in this fashion represents the extent to which states in a dyad rely on each other for overall economic activity. States with higher interdependence scores obtain higher amounts of goods and services from each other, thereby implying the trade relationship is more salient. In subsequent empirical analysis, the authors create a dyadic measure of interdependence by using the “weak-link” assumption, where only the lowest score for the dyad is utilized. The rationale behind this approach is simply that the constraining effect of interdependence is a function of the least interdependent partner.

The second major approach is from Barbieri (1995; 1996; 1998). Barbieri differs from Russett and Oneal by considering trade interdependence a function of how important a bilateral trade link is to the overall trade portfolio of a state. This conceptualization is more in line with Hirschman (1981), who considered vulnerability a function of how reliant a state was on particular external partners for resources. Barbieri’s measures are further differentiated from Russett and Oneal’s by their dyadic construction. She creates three measures to capture the economic relationship between states – salience, symmetry, and interdependence, given as follows:

$$\text{Trade Share}_i = \frac{\text{Imports}_{ij} + \text{Exports}_{ij}}{\text{Imports}_i + \text{Exports}_i} = \frac{\text{Trade}_{ij}}{\text{Trade}_i}$$

$$\text{Salience}_{ij} = \sqrt{\text{Trade Share}_i * \text{Trade Share}_j}$$

$$\text{Symmetry}_{ij} = 1 - |\text{Trade Share}_i - \text{Trade Share}_j|$$

$$\text{Interdependence}_{ij} = \text{Trade Salience}_{ij} * \text{Trade Symmetry}_{ij}$$

In this way, Barbieri’s measures take into account *both* states’ reliance on their trade relationship. Salience captures the relative importance of the relationship (using the geometric mean) in a way that effectively captures opportunity costs. Symmetry acknowledges the relative gains arguments of realism and subsequent perceptions of

vulnerability. Finally, her interdependence measure considers both opportunity and relative costs essential to understanding a complexly interdependent relationship between states.

Debate in the literature over which measures are appropriate in empirical analyses is heated and largely unresolved.⁷ In reality, both approaches have strengths, weaknesses, and appropriate applications. Two key factors distinguish the measures as they relate to my analysis. First, the Russett and Oneal measures excel at capturing sensitivity interdependence, but a more tenuous grasp on vulnerability interdependence (Mansfield and Pollins 2001). That is, bilateral trade as a share of GDP implies the connectedness of states' economies, but says little about the costliness of severing the link. If the goods exchanged are highly substitutable by other trade partners or domestic sources, little vulnerability exists. Trade as a share of GDP, therefore, may not appropriately capture the cost of conflict between states. Second, Russett and Oneal's approach utilizes the weak link assumption that the lowest level of interdependence is sufficient for identifying dyadic costs. This is not a dyadic measure, however, and cannot speak to the more complex relationship between interdependence and conflict (Barbieri and Peters 2003). In particular, the weak link assumption prevents insight into the influence of asymmetry, relative gains, and strategic vulnerabilities.

In my analysis I adopt a hybrid of the Russett and Oneal and Barbieri measures suited for my particular hypotheses and questions. Generally, I measure trade relationships using total dyadic, bilateral trade as a share of GDP (titled "trade dependence" for convenience) in accordance with Russett and Oneal, given by:

⁷ For a thorough discussion of the debate, see Gartzke and Li 2003a and subsequent replies by Barbieri and Peters 2003, Oneal 2003, and their rebuttal in Gartzke and Li 2003b.

$$\text{Dependence}_i = \frac{\text{Imports}_{ij} + \text{Exports}_{ij}}{\text{GDP}_i} = \frac{\text{Trade}_{ij}}{\text{GDP}_i}.$$

This approach has the advantage of capturing the sensitivity aspects of interdependence in a more complete way by considering trade's impact on state economies. To capture *trade interdependence* specifically, I use a dyadic measure in accordance with Barbieri's approach achieved by generating geometric means of trade dependence:

$$\text{Interdependence}_{ij} = \sqrt{\text{Trade Dependence}_i * \text{Trade Dependence}_j}$$

This represents interdependence in the dyad by taking into account both states' opportunity cost of conflict. Higher scores on this variable indicate greater interdependence. To address asymmetry and relative gains, which I argue increases conflict between certain states, I include a measure of *trade asymmetry* that once again combines the two approaches by using the absolute difference in trade dependence scores:

$$\text{Asymmetry}_{ij} = |\text{Trade Dependence}_i - \text{Trade Dependence}_j|$$

Higher scores reflect greater asymmetry. Using both the trade interdependence and trade asymmetry measures allows me to more fully explain the influence of interdependence on conflict. All trade data comes from the Correlates of War (CoW) (Barbieri, Keshk, and Pollins 2008) and GDP data from the World Bank (2012). I interact each of these variables with the aforementioned agreement variables to capture their influence within the context of economic agreements.

4.2.3 Intra-Agreement Trade

As my operationalization of economic agreements indicates, they are a highly heterogeneous group of arrangements. While agreements differ in the scope of coverage and depth of liberalization, they also differ in the extent of membership. That is, some agreements are only bilateral treaties while others are multilateral arrangements. The benefit states derive from bilateral agreements is a function of commerce between the two members and any intangible gains associated with their bilateral relationship (i.e., increased investment from non-member parties). Economic relationships and interdependence between states in a multilateral agreement, however, are more complex. Members of multilateral economic agreements benefit from reduced barriers with multiple states. That is, economic agreements are a series of interconnected relationships. While a member may not trade extensively with one particular partner, it is still connected through the structure of the agreement.

In turn, the institutional structures of economic agreements may be affected by conflict. Disputes between two agreement members – even if they do not trade extensively – may threaten the existence of the entire agreement. The multilateral Central American Common Market, for example, dissolved because of disputes between El Salvador and Honduras. Consequently, trade between agreement members is in part ascribed to the agreement. In other words, an opportunity cost or degree of interdependence exists between members of an economic agreement attributable to trade with third-party members of the agreement. To capture this influence, I specify a variable capturing the total trade a state conducts with all agreement partners less bilateral trade as a share of GDP, given by:

$$\text{Intra-agreement Trade}_{ij} = \frac{(\sum_{k=1}^n \text{imports}_{ik} + \text{exports}_{ik}) - (\text{imports}_{ij} + \text{exports}_{ij})}{GDP_i}$$

Where all k are members of the economic agreement and j is the dyadic partner of i . In this way the variable captures the influence of trade with other agreement members net of the dyadic trade influence. To capture the dyadic influence of intra-agreement trade, I calculate the geometric mean of these scores:

$$\text{Intra-agreement Dependence}_{ij} = \sqrt{\text{Intra-agreement Trade}_i * \text{Intra-agreement Trade}_j}$$

4.2.4 Foreign Direct Investment

Economic agreements are most often associated with reducing trade barriers between members. Lower barriers to trade, however, has an important impact on corporate investment strategies as well. Lower barriers in an economic agreement effectively increases the available market for goods produced in that region. Expanding markets, in turn, creates opportunities for firms to capitalize on economies-of-scale by investing in economic agreement areas (Joumotte 2004; Chen 2009). Foreign direct investment is one alternative business may employ to avoid the *de facto* discrimination of a limited economic integration agreement. Hence, states in an economic agreement might be expected to benefit from increased FDI inflows. It is important to account for FDI in my analysis as it may provide another benefit to agreement members that influences conflict behavior.

Capturing this effect is somewhat difficult given the complexity of the concept I posit. Specifically, I am interested in investment attributable to the lower barriers of the economic agreement. Of course, this is inherently unobservable and beyond the reach of available data or reliable approximation techniques. Furthermore, this investment is non-

directional in that it need not come from another agreement member to influence conflict behavior. Hence, bilateral flows are inappropriate for my analysis. Given these factors, the most appropriate conceptualizations and measures of FDI for my analysis is a net FDI inflow at the country-year level. While not all FDI inflow is attributable to an economic agreement, it is likely accurate to say all FDI inflows benefit from the agreement. Consequently, while not all inflows are agreement-driven, they are all agreement-benefiting, meaning they may influence conflict behavior. I operationalize *FDI dependence* using total new inflows as a share of GDP, given by:

$$FDI\ dependence_i = \frac{Inflows_i - Outflows_i}{GDP_i} = \frac{Net\ FDI_i}{GDP_i}.$$

As with trade interdependence, I generate dyadic measures using the geometric mean of FDI dependence given by:

$$FDI\ Interdependence_{ij} = \sqrt{FDI\ Dependence_i * FDI\ Dependence_j}$$

Because FDI flows can be negative, I rescale the variable by adding 1 to all observations. The FDI interdependence variable is also interacted with the agreement variables. I obtain FDI data from the United Nations Conference on Trade and Development (UNCTAD) (2013).

4.2.5 Trade Diversion

A final primary explanatory variable captures trade diversion. A broad literature in economics explores the effects of agreements on bilateral trade flows using gravity models as a base (see Frankel 1997; Glick and Rose 2001; Rose and Wincoop 2001; Baier and Bergstrand 2007; Carerre 2006 for recent examples). Differences between gravity model estimates, which provide a theoretical level of trade, and observed trade flows are attributed to the presence of an economic agreement (and therefore trade

diversion). I therefore estimated a gravity model of trade that estimates the (logged) bilateral trade between states in a dyad.⁸ To account for zero trade flows, I use a Heckman selection model with the simple presence of trade in a dyad (coded 1 if trade occurs, 0 otherwise) as the selection criteria (Carerre 2006). Trade diversion due to economic agreements is calculated as the difference between the natural log of observed trade and logged predicted values of the gravity model. Higher values therefore indicate greater levels of trade diversion caused by membership in economic agreements.⁹

I use three groups of variables to estimate the gravity model. Table 4.2 briefly outlines each variable and its source. First, I use a traditional set of variables to account for the economic and geographic relationships of the states. These variables include GDP (high and low), population (high and low), distance, contiguity, whether the two states are in the same geographic region (as defined by the World Bank), individual variables for each state's region, and whether the two states share a common language. Second, I expand on the gravity model by including a series of political variables. In this way I better approximate the influence of economic agreements by accounting for other potentially confounding influences on trade. These variables include regime type (high and low), political affinity, alliances, major power status (total number in the dyad), and WTO membership. Finally, a third set of variables accounts for conflict between states. Conflict variables include militarized interstate disputes (cumulative total initiated since 1950), fatal militarized disputes (cumulative total initiated since 1950), a spatial lag of

⁸ I add \$100 to all observations of trade to avoid problems with taking the log of zero.

⁹ While I am interested in trade diversion, I do not limit this variable to *only* diversion (positive values in my variable). In this way, I permit economic agreements to *create* trade for excluded states. This may theoretically occur if economic agreements increase demand for materials with the agreement which are then sourced by neighboring states. Consequently, observed values on this variable run from negative (trade creation) to positive (trade diversion).

disputes using alliances to connect (detail provided in a later section), a spatial lag of disputes using contiguity to connect, and years since the last militarized dispute.

Table 4.3 contains the results of the gravity model estimation. Rather than discuss the results of individual variables, which is not the focus of my analysis, I focus on the trade amounts predicted by the gravity model and subsequent estimation of trade diversion. Figure 4.2 compares the gravity model estimations with actual trade values. Overall, the gravity model tends to predict lower, more uniform trade values than actually occur. The gravity model also underestimates zero trade values noticeably. Accuracy with respect to actual trade values is not the goal of the gravity model, however, as the presence of trade diversion is dependent on the gravity model being unable to explain 100% of trade values.

Turning to the actual measure, the manufactured trade diversion variable is roughly normally distributed with very long tails. To provide a useful depiction of the variable, I rescaled the variable to eliminate negative values by adding the lowest observed value to all observations. This transformation is only to display the variable and will not be used in subsequent analysis. Figure 4.3 plots the distribution of trade diversion between the 5th and 95th percentile (to, once again, aid in displaying the variable by eliminating very long tails). The majority of dyads witness relatively small amounts of trade diversion given the cluster around the vertical line referencing “zero trade diversion.” The area to the right of this line indicates dyads for which trade diversion occurs. The area to the left, in contrast, indicates dyads with trade creation. Overall,

approximately 47.8% of dyads experience trade diversion, 41.1% experience trade creation, and 11.1% experience neither creation nor diversion.¹⁰

To more fully capture the impact of trade diversion, I reference with respect to GDP. The foundation of my trade diversion variable is thus given by,

$$\text{Trade Diversion}_j = \frac{\text{Predicted Trade}_{ij} - \text{Actual Trade}_{ij}}{\text{GDP}_i} = \frac{\text{Diversion}_{ij}}{\text{GDP}_i}.$$

As with my other economic variables, I generate dyadic measures using the geometric mean of trade diversion given by:

$$\text{Dyadic Trade Diversion}_{ij} = \sqrt{\text{Trade Diversion}_i * \text{Trade Diversion}_j}$$

My statistical tests and subsequent diagnostic analysis in Chapter 6 revealed a polynomial relationship between trade diversion and conflict. Consequently, I include a squared dyadic trade diversion term in Chapter 6 to appropriately evaluate the influence of this variable.

4.2.6 Control Variables

I also use a number of control variables to account for competing explanations of conflict between states. Four control variables – congruity, major powers, alliances, and capabilities – control for realist arguments of conflict. Contiguous states and major powers are more likely to fight due to greater opportunities for conflict (Most and Starr 1989). Allies, on the other hand, engage in combat less frequently given shared security goals (Bremer 1992). I code these variables dichotomously if states are contiguous (or

¹⁰ Those experiencing neither trade creation nor diversion are dyads that have zero trade in a given year.

separated by 150 miles of water or less), if either state is a major power, or if allied respectively. My control for capabilities is a relative measure using composite index of national capabilities (CINC) scores from the Correlates of War dataset. The measure is calculated as a (logged) dyadic ratio of the smaller CINC score over the larger. I obtain data for all three of these measures from the Alliances and Direct Contiguity datasets housed at the Correlates of War Project (Singer 1972; Gibler 2009; Stinnett et al 2002).

Four additional controls – democracy, GDP, IGOs, and WTO membership– account for liberal theories of interstate conflict. First, in accordance with the democratic peace literature, I control for regime type using composite scores from the Polity IV dataset scaled -10 to 10 from authoritarian to democratic (Marshall, Jaggers, and Gurr 2007).¹¹ I use the geometric mean of scores in the dyad to measure democracy. Second, the sizes of states’ economies are likely to influence both the degree to which they are involved in international affairs and their ability to use certain policy instruments. To this end, I control for GDP using the aforementioned Gleditsch figures. Because GDP is highly skewed, it is logged for statistical analysis. Additionally, I use the geometric mean of scores in the dyad. Third, since many economic integration agreements are also international organizations proper, it is important to ensure the various integration variables are not simply reflecting the broader pacifying effect of IGO membership (Russett and Oneal 2001). I include a variable controlling for joint organization membership to control for this possibility. Data comes from the International

¹¹ I use the Polity 2 variable from this dataset. The Polity 2 variable differs from the basic Polity variable in the authors’ dataset by adjusting several problematic variables for using statistical analysis. For example, the authors code periods of anarchy -77 on the Polity variable. To facilitate time-series analysis, the authors of the POLITY IV dataset recoded anarchy to a neutral score of 0, which they believe the appropriate classification for these cases. For more information, see the POLITY IV Project coding manual (Marshall, Jaggers, and Gurr 2011).

Governmental Organization dataset housed at the Correlates of War Project (Pevehouse, Nordstrom, and Warnke 2004). Finally, in a similar way it is important to control for membership in the WTO as the most all-encompassing economic institution in the world. I code this variable 1 if both states are members of the WTO and 0 otherwise.

4.2.7 Descriptive Statistics

Tables 4.4, 4.5, and 4.6 include descriptive statistics for all the variables used in my analysis. Recall that my unit of analysis is non-directed country dyad years from 1970 to 2001. In total, approximately 16% of dyads share membership in a shallow or deep economic agreement. Likewise, 20% of all observations are either one agreement or opposing agreement dyads. Consider first statistics for my dependent variables, which I have broken down by economic agreement type. First, note the relative rarity of both dependent variables. Militarized disputes and economic sanctions generally occur in less than 1% of dyads. Second, on the whole, military force is more often observed than economic sanctions. While the relative popularity of economic sanctions is not necessarily within the scope of this paper, their comparative unpopularity may reflect the difficulty of using sanctions, the inability of some states to effectively employ them, or different data collection procedures. Third, note the extreme infrequency of economic sanctions between shallow and deep agreement members. Indeed, no two states in a deep economic agreement (customs union, common market, or economic union) have threatened or imposed sanctions on each other in the temporal scope of my study. I will return to this point in the next chapter when discussing intra-agreement conflict.

Turning to my primary explanatory variables in Table 4.5, I have once again broken the variables down by dyadic agreement type. Note first the relationship between

shallow and deep agreement types in terms of economic relationships. Overall, deep agreements tend to foster more interdependence, intra-agreement trade, FDI dependence, *and* asymmetry between members. Several of these factors might be expected, save for the asymmetry. This may reflect on forces creating economic agreements as much as the impact of agreements, however, as strong states may forge agreements to solidify trade blocs to their advantage.¹² The second item of interest in Table 4.5 is the distribution of the trade diversion variables. Overall, dyads with opposing agreements – i.e., where both states are in different economic agreements – appear to experience more erratic patterns of trade diversion given the mean and maximum observed values. For brevity, I omit discussion of Table 4.6 regarding control variables.

4.3 Estimation Techniques

I specifically argue that the initiation of conflict and the tactics states use are connected. That is, the use of sanctions and military force are both possible outcomes of the same decision-making process. Accounting for this may be important to properly assay the influence of economic agreements on the conflict process broadly. To this end I employ several estimation strategies to address the connected nature of conflict and the tactics utilized by states.¹³ First, I specify two logit models treating sanctions and military force as separate dependent variables with the same set of explanatory variables. This approach treats both events as outcomes of independent processes. Second, I estimate a bivariate probit model that addresses the potential connection between sanctions and military force as joint outcomes of the same process. Again, because I am

¹² I employ several robustness checks accounting for the potentially endogenous nature of economic agreement creation and interstate conflict. Results are reported in subsequent chapters.

¹³ I also conducted several robustness checks omitted here for space. These include rare events logit design to account for dependent variables coded 1 less than 1% of observations, multinomial logit using imputed data, sample sets limited to politically relevant dyads, and simultaneous equations accounting for endogeneity using a variety of instruments.

using a derived predictor for trade diversion, I account for uncertainty in these estimates using Murphy-Topel corrections in my statistical models (Murphy and Topel 1985; Hardin 2000; Hole 2006).

While the logit and bivariate probit models are reliable and easily interpreted estimation techniques, they are not well-suited to evaluating the strategic nature of hypotheses derived from my formal model. It is possible the decision to initiate any form of conflict – sanction or military force – is related to the effectiveness of using either coercive instrument, hence my use of a formal bargaining model. In other words, states are unlikely to initiate conflict if they cannot effectively employ either sanctions or military force. Likewise, a defending state may be more likely to give in to demands if it anticipates the use of one or the other. To address this, I specify a strategic probit model (using STRAT software (Signorino 2001)), that allows the decision to initiate conflict in part to derive from the expectation of either military force or economic sanctions being used. The potential outcomes of interest in the strategic model are 1) *no* conflict initiation (either a sanction or a MID) 2) the use of economic sanctions and 3) the use of military force. Exact specifications for the strategic probit models will be provided in subsequent empirical chapters. Given the challenges in estimating this complex model, I limit my sample to dyads that are contiguous, major powers, or where at least one state is a top ten trade partner of the other (and hence highly economically salient) and eliminate the major powers and WTO membership variables.¹⁴

For comparison and simplicity, I subset my analysis on agreement type in all models. For intra-agreement conflict, I separate shallow and deep agreements into two separate regressions with “no agreement” dyads serving as the comparison category.

¹⁴ Limiting the logit and bivariate probit models to this subset of dyads does not change the results.

This allows me to evaluate the impact of economic agreements as an institution. For extra-agreement conflict between members and non-members, I separate the one agreement and opposing agreement dyads into separate estimations with “no agreement” dyads again serving as the comparison category. I lag all independent variables one year to help control for endogeneity and protect the temporal integrity of the analysis. Given the rarity of conflict and the possibility events are not truly temporally independent, I include a cubic polynomial variable capturing the number of years between either a sanction or MID to account for potential temporal dependence (Beck, Katz, and Tucker 1998; Carter and Signiorino 2010).

4.4 Threats to Internal Validity

No statistical analysis is without complications stemming from the structure of data or other potential problems with causal inference. In my analysis, I am particularly aware of two potentially confounding factors. First, my dataset contains a relatively large proportion of missing data on important variables for my analysis. Second, observations in my dataset may not be temporally or spatially independent, thus potentially biasing my results. I address these two issues statistically using imputations and temporal/spatial lags.

4.4.1 Missing Data and Multiple Imputation

The total number of dyad-years in my analysis is 437,250 running from 1970 to 2001. In total, however, approximately 60% of dyad-years are missing values on at least one independent variable. This reduces the amount of usable observations to 173,618. While more than enough for conventional statistical analysis, missingness of this magnitude is a potential problem in my analysis. The most common means of handling

missing data is simply omitting the observations from statistical analysis. Excluding observations for which a portion of the relevant data is missing, however, poses several potential problems. The least obtrusive problem is simply the loss of potentially useful information. In extreme cases, however, omitting missing data can result in severe selection bias (King et al 2001). Consequently, missingness is a statistical issue to be taken seriously in my analysis.

The source of most missing observations in my dataset is trade. Approximately 27% of my observations do not possess valid trade values. Missing trade data is compounded by the numerous dyadic measures created using observed trade values. In total, approximately 37% of dyads are missing trade data for at least one state, resulting in more missing values for my constructed measures of interdependence and asymmetry. Second to trade in missingness is FDI, for which 34% of observations are missing data. Two additional variables are particularly noteworthy in his regard. Democracy values are missing for approximately 23% of data and GDP is missing for 16% of observations.

Of particular concern for my analysis is trade data given its position in my theoretical argument and the subsequent conceptualization and operationalization of variables using trade. Furthermore, missingness in trade data is problematic given the nature of politics in the global economy. The omission of trade data from national statistics is often not an issue of oversight or resources, but of political conditions and influence (Barbieri, and Keshk 2009; 2011). In other words, rather than a random process, trade data is often missing because of political factors included in my statistical analysis (Barbieri 1995; Barbieri, Keshk, and Pollins 2009; Gleditsch 2010). As trade is

also one of my primary explanatory variables, it is important to address potential bias stemming from missing data.

Several studies have used multiple imputation to address missing trade data. First, Gleditsch (2002) creates a trade dataset using a series of procedures, including using either export or import figures for one country if the other is missing, using a series of lags or leads to cover gaps in data, some interpolation, and coding observations 0 if trade between states is unlikely. These methods allow Gleditsch to eliminate missing values in his dataset. Gelpi and Grieco (2008) use multiple imputation to fill in missing trade values and evaluate the connection between interdependence and conflict. The authors use both the Russett and Oneal and Barbieri datasets in their analysis.

Unfortunately, the authors do not offer a systematic evaluation of their dataset in order to evaluate the potential appropriateness of imputation for trade data. Finally, Boehmer, Jungblut, and Stoll (2011) evaluate the use of constructed data in the analysis of interdependence and conflict. The authors replicate Russett and Oneal (2001) using Gleditsch (2002) and Barbieri, Keshk, and Pollins (2009) data by considering first only observations with actual trade data. They then add in imputed for missing data at 5% intervals to evaluate the effect on the interdependence-conflict dynamic. Ultimately the authors find imputed data tends to inflate the effect of trade in conflict models. Again, the authors do not systematically evaluate the constructed data in reference to observed data.

While these studies use statistical techniques to fill in missing trade data, Barbieri, Keshk, and Pollins (2009), identify potential problems in deriving trade data outside of official government reports. Several assumptions are required to derive data, many of

which are tenuous or unfounded. Assuming zero trade between states based on various dyadic characteristics is generally unsound in this era of globalization. Furthermore, missing data is often missing for political reasons. Data may be misreported to over or understate trade relationships, for example. Likewise, conflict can impact trade between states. Given this inherent difficulty in imputing trade data, I first tested the quality of imputed trade values against available data. A full description of the procedures and analysis of the results is available in Appendix A. In short, I evaluate the quality of trade values imputed using the procedure and software (Amelia II) developed by King et al (2001) by randomly voiding 20% of known, non-missing trade values. I then evaluate the real versus imputed trade statistics for accuracy and potential problems.

Based on this analysis, two factors are important in the determination of accurate trade statistics. The first is whether the observation is missing a GDP score for either state in the dyad. This is relatively innocuous, however, as only 6.1% of dyads are missing both trade and GDP. Inaccuracy on 6.1% of observations, while certainly not optimal, is unlikely to drastically harm my analysis. Furthermore, I can perform two different statistical analyses that include and exclude the imputed values for observations missing GDP to evaluate the influence of the 6.1%. The second, however, is the imputed model's inaccuracy with respect to predicting zero trade relationships. This is slightly more problematic given approximately 30% of recorded bilateral trade relationships are zero. Assuming an identical proportion of dyads missing trade data are in fact zero, approximately 8% of my total dataset will be affected. My strategy here is to perform two statistical analyses – one excluding observations that are missing trade data and one

using the imputed trade values. If results differ, I will explore more carefully the imputed values and their validity in my statistical analysis.

4.4.2 Temporal and Spatial Dependence

My statistical analysis also requires adjustments to account for potential dependencies in the data. First, given the rarity of conflict and the possibility events are not truly temporally independent, I include a cubic polynomial variable capturing the number of years between either a sanction or MID to account for the recurrence of conflict over time (Beck, Katz, and Tucker 1998; Carter and Signorino 2010).

Second, the policies and actions of states on the international stage are in part dependent on the policies and actions of other states with which they share a connection. As I have noted in a previous chapter, the proliferation of economic agreements is in part fueled by states observing agreements between third parties and subsequently forming agreements of their own. Likewise, incidents of conflict may exhibit some degree of spatial dependence if wars are prone to spilling across borders or drawing in third parties. I take into account potential spatial dependency between dyads involved in conflict using two spatial lag variables capturing an aggregated, lagged value of the dependent variable (Neumayer and Plumper 2010). The first variable is weighted by geographic continuity under the assumption a state is more likely to experience conflict when a neighbor is already embroiled in conflict. The second variable is weighted by alliance ties, as a state may be more likely to act when an ally is experiencing a conflict. I construct spatial lags for both militarized interstate disputes and sanctions. Summary statistics for these constructed variables are available in Table 4.6.

Table 4.1: Levels of Economic Integration

	Partial Scope Agreement (PSA)	Free Trade Area (FTA)	Customs Union (CU)	Common Market (CM)	Economic Union (EU)
Reduction in Trade Barriers	X	X	X	X	X
Elimination of Trade Barriers		X	X	X	X
Creation of a Common External Trade Policy			X	X	X
Free Movement of Labor and Capital				X	X
Coordination of Domestic Economic Policies					X

Table 4.2: Gravity Model Variables

Variable	Measure	Source
<i>Dependent Variable</i>		
Total Bilateral Trade	Imports + exports in a dyad in a given year (logged)	Barbieri, Keshk, and Pollins 2008
<i>Traditional Gravity Model</i>		
GDP _{High}	Highest GDP score in the dyad (logged)	Penn World Tables 2012
GDP _{Low}	Lowest GDP score in the dyad (logged)	Penn World Tables 2012
Population _{Low}	Highest population in the dyad (logged)	Penn World Tables 2012
Population _{High}	Lowest population in the dyad (logged)	Penn World Tables 2012
Distance	Distance between capitals in miles	Gleditsch 2012
Contiguity	Coded 1 if states share a border or less than 150 miles of water	Small and Singer (1982)
Region	Dichotomous, coded 1 if states in a dyad are the same region	Author
Common Language	Dichotomous, coded 1 if states share a common language	Mayer and Zignago 2011
<i>Political Variables</i>		
Democracy _{High}	Highest POLITY IV score in the dyad (using Polity 2 variable)	POLITY IV
Democracy _{Low}	Lowest POLITY IV score in the dyad (using Polity 2 variable)	POLITY IV
Affinity	Reflects similarity in policies according to UN voting behavior	Gartzke 2008
Allies	Dichotomous, coded 1 if states in a dyad are allies	Gibler and Sarkees 2004
Major Power _{Sum}	Sum of major powers in the dyad (0, 1, or 2 values)	Small and Singer 1982
WTO Membership	Dichotomous, coded 1 if states are both members of the WTO	Author
Militarized Disputes _{Sum}	Sum of all militarized disputes in a dyad from 1950 to 2001	Maoz 2004
Fatal Militarized Disputes _{Sum}	Sum of all fatal militarized disputes in a dyad from 1950 to 2001	Maoz 2004
Spatial Lag _{Alliances}	Spatial lag for MID initiation using alliances as connector	Author
Spatial Lag _{Contiguity}	Spatial lag for MID initiation using contiguity as connector	Author
Peace Years	Years since a militarized dispute between states in a dyad	Author

Table 4.3: Gravity Model Estimates

	Extant Trade Relationship (Selection)		Total Bilateral Trade (Outcome)	
	Coefficient	Standard Error	Coefficient	Standard Error
<i>Traditional Gravity Model</i>				
GDP _{High}	0.270***	0.003	0.735***	0.004
GDP _{Low}	0.261***	0.004	0.800***	0.004
Population _{High}	-0.029***	0.006	0.068***	0.005
Population _{Low}	-0.057	0.031	0.099*	0.005
Distance	-0.000***	0.000	-0.001***	0.000
Contiguity	0.809***	0.028	1.399***	0.025
Region	0.283***	0.014	0.057***	0.018
Common Language	0.243***	0.012	0.548***	0.016
<i>Political Variables</i>				
Democracy _{High}	0.014***	0.000	0.008***	0.001
Democracy _{Low}	0.005***	0.000	0.007***	0.000
Affinity	-0.065***	0.013	-0.639***	0.015
Allies	0.370***	0.018	0.553***	0.020
Major Power _{Sum}	0.312***	0.023	0.586***	0.017
WTO Membership	0.296***	0.007	0.208***	0.010
<i>Conflict Variables</i>				
Militarized Disputes _{Sum}	-0.132***	0.009	-0.143***	0.007
Fatal Militarized Disputes _{Sum}	-0.044	0.032	0.104	0.034
Spatial Lag _{Alliances}	-0.910	0.760	9.369***	0.848
Spatial Lag _{Contiguity}	7.285***	0.712	14.395***	0.926
Peace Years	-0.005***	0.000	-0.024***	0.000
<i>Constant</i>				
Constant	-12.114***	0.113	-20.248***	0.155
N	261,981			
Censored	71,183			
Uncensored	190,798			
λ^2	206,576.89***			
Log Pseudolikelihood	-491,020.00			
ρ	0.073***			

Table 4.4: Descriptive Statistics - Dependent Variables

<i>All and No Agreement Dyads</i>					
		All Dyads		No Agreement	
		0 (None)	1 (Initiated)	0 (None)	1 (Initiated)
MIDs	Frequency	182,126	631	153,382	431
	Percentage	99.65%	0.35%	99.72%	0.28%

		All Dyads		No Agreement	
		0 (None)	1 (Initiated)	0 (None)	1 (Initiated)
Economic Sanctions	Frequency	182,533	224	153,628	185
	Percentage	99.88%	0.12%	99.88%	0.12%

<i>Intra-Agreement Conflict</i>					
		Shallow Agreements		Deep Agreements	
		0 (None)	1 (Initiated)	0 (None)	1 (Initiated)
MIDs	Frequency	26,112	168	2,632	32
	Percentage	99.36%	0.64%	98.80%	1.20%

		Shallow Agreements		Deep Agreements	
		0 (None)	1 (Initiated)	0 (None)	1 (Initiated)
Economic Sanctions	Frequency	26,241	39	2,664	0
	Percentage	99.85%	0.15%	100.00%	0.00%

<i>Extra-Agreement Conflict</i>					
		One Agreement		Opposing Agreements	
		0 (None)	1 (Initiated)	0 (None)	1 (Initiated)
MIDs	Frequency	15,725	143	20,056	194
	Percentage	99.10%	0.90%	99.04%	0.96%

		One Agreement		Opposing Agreements	
		0 (None)	1 (Initiated)	0 (None)	1 (Initiated)
Economic Sanctions	Frequency	15,807	61	20,163	87
	Percentage	99.62%	0.38%	99.57%	0.43%

Table 4.5: Descriptive Statistics - Primary Explanatory Variables

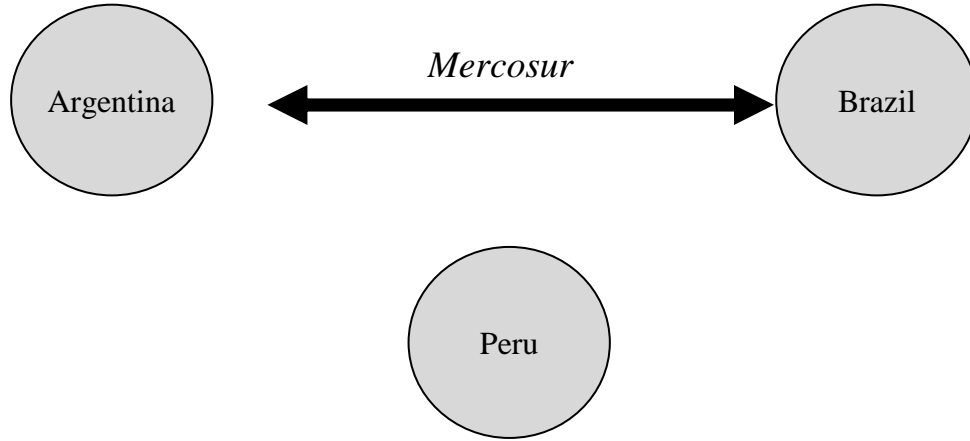
	Mean	Std. Dev.	Minimum	Maximum
<i>All Dyads</i>				
Asymmetry	0.008	0.032	0.000	0.907
Interdependence	0.002	0.006	0.000	0.197
FDI Dependence*	1.017	0.033	0.395	1.616
<i>No Agreement Dyads</i>				
Asymmetry	0.006	0.027	0.0000	0.907
Interdependence	0.001	0.004	0.0000	0.197
FDI Dependence*	1.017	0.033	0.395	1.616
<i>Shallow Agreements</i>				
Asymmetry	0.020	0.048	0.000	0.700
Interdependence	0.003	0.008	0.000	0.163
Intra-Agreement Trade	0.007	0.018	0.000	0.363
FDI Dependence*	1.017	0.038	0.414	1.426
<i>Deep Agreements</i>				
Asymmetry	0.025	0.047	0.000	0.461
Interdependence	0.014	0.017	0.000	0.112
Intra-Agreement Trade	0.056	0.075	0.000	0.408
FDI Dependence*	1.020	0.032	0.837	1.418
<i>One Agreement Dyads</i>				
Asymmetry	0.022	0.048	0.000	0.851
Interdependence	0.004	0.007	0.000	0.151
Trade Diversion _{High}	0.003	0.023	-0.059	0.526
Trade Diversion _{Low}	-0.016	0.040	-0.855	0.037
<i>Opposing Agreement Dyads</i>				
Asymmetry	0.018	0.044	0.000	0.998
Interdependence	0.003	0.006	0.000	0.171
Trade Diversion _{High}	0.003	0.016	-0.077	0.318
Trade Diversion _{Low}	-0.012	0.039	-0.964	0.195

*In order to generate geometric means, I rescaled the FDI dependence variable to eliminate negative values by adding 1 to all observations.

Table 4.6: Descriptive Statistics - Control Variables

	Mean	Std. Dev.	Minimum	Maximum
<i>Continuous Variables</i>				
Capabilities (logged)	-2.022	1.503	-9.654	-0.001
Democracy	8.945	6.144	0	20
GDP (logged)	23.358	1.479	18.453	29.552
IGO	28.735	11.254	0	107
Spatial MID Lag _{Alliances}	0.003	0.004	0	0.127
Spatial MID Lag _{Contiguity}	0.003	0.004	0	0.091
Spatial Sanctions Lag _{Alliances}	0.001	0.003	0	0.109
Spatial Sanctions Lag _{Contiguity}	0.001	0.003	0	0.074
Peace Years	24.212	12.361	0	50
<i>Dichotomous Variables</i>				
	Frequency	Percentage		
Allies	164,869	90.17%		
	17,977	9.83%		
Contiguity	176,281	96.41%		
	6,565	3.59%		
Major Power	165,190	90.34%		
	17,656	9.66%		
WTO Membership	91,338	49.95%		
	91,508	50.05%		

Opposing Agreement Dyads



Opposing Agreement Dyads

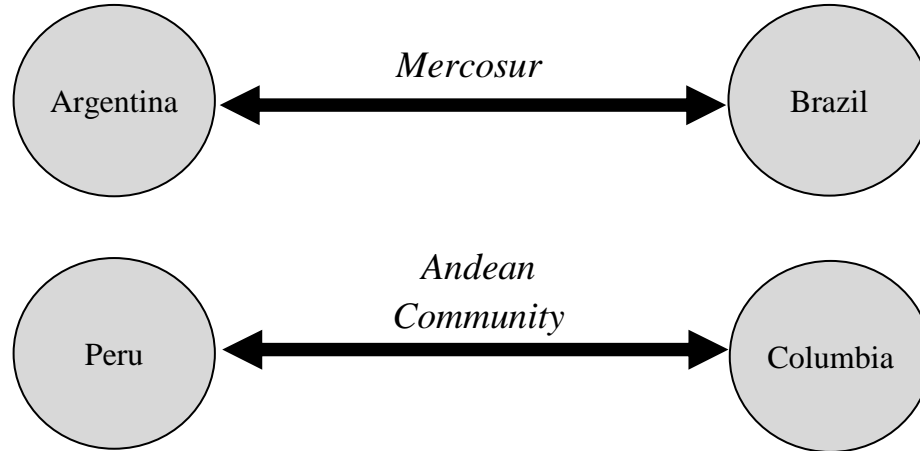


Figure 4.1: Types of Member/Non-Member Dyads

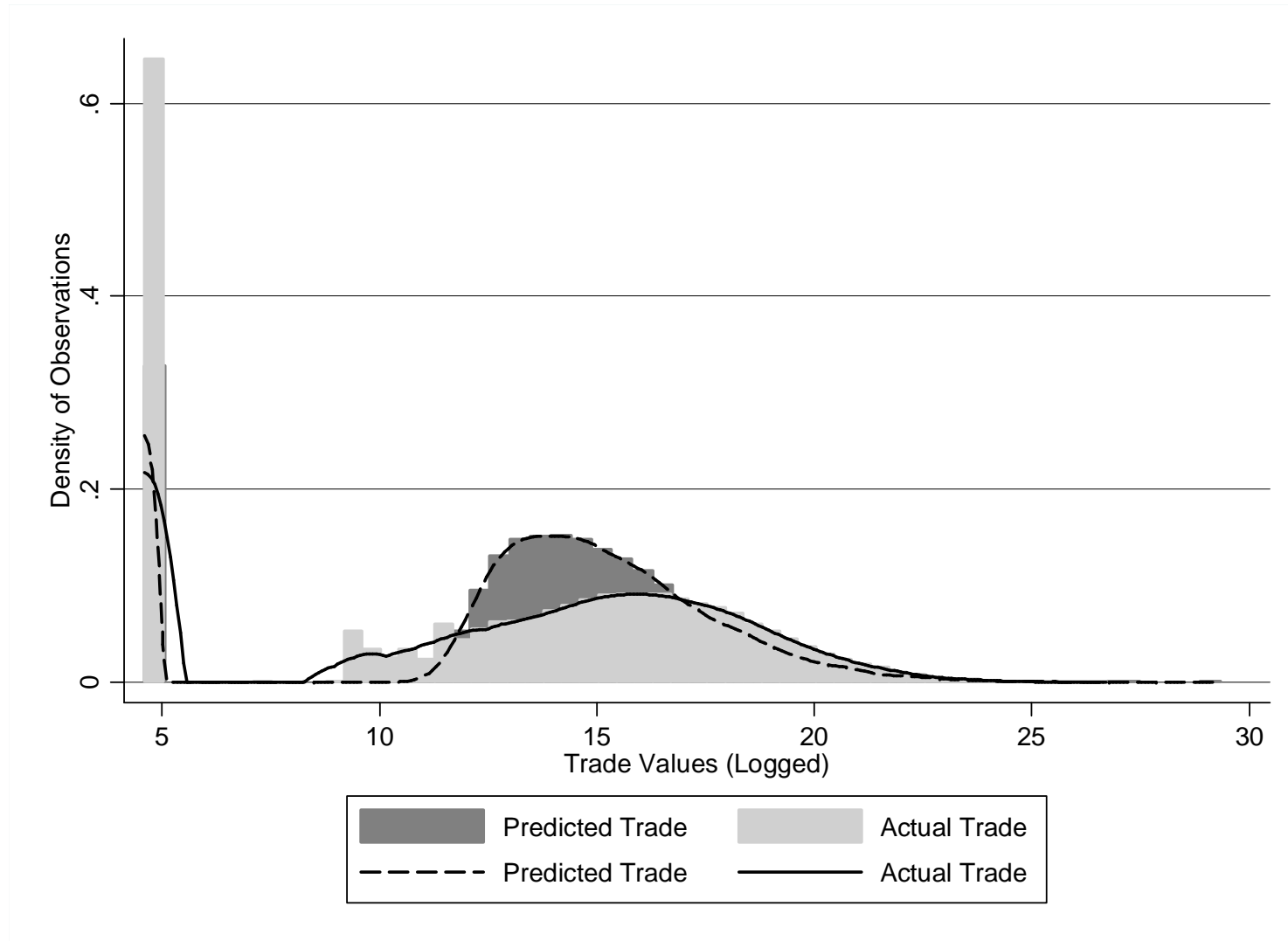


Figure 4.2: Actual versus Predicted Trade

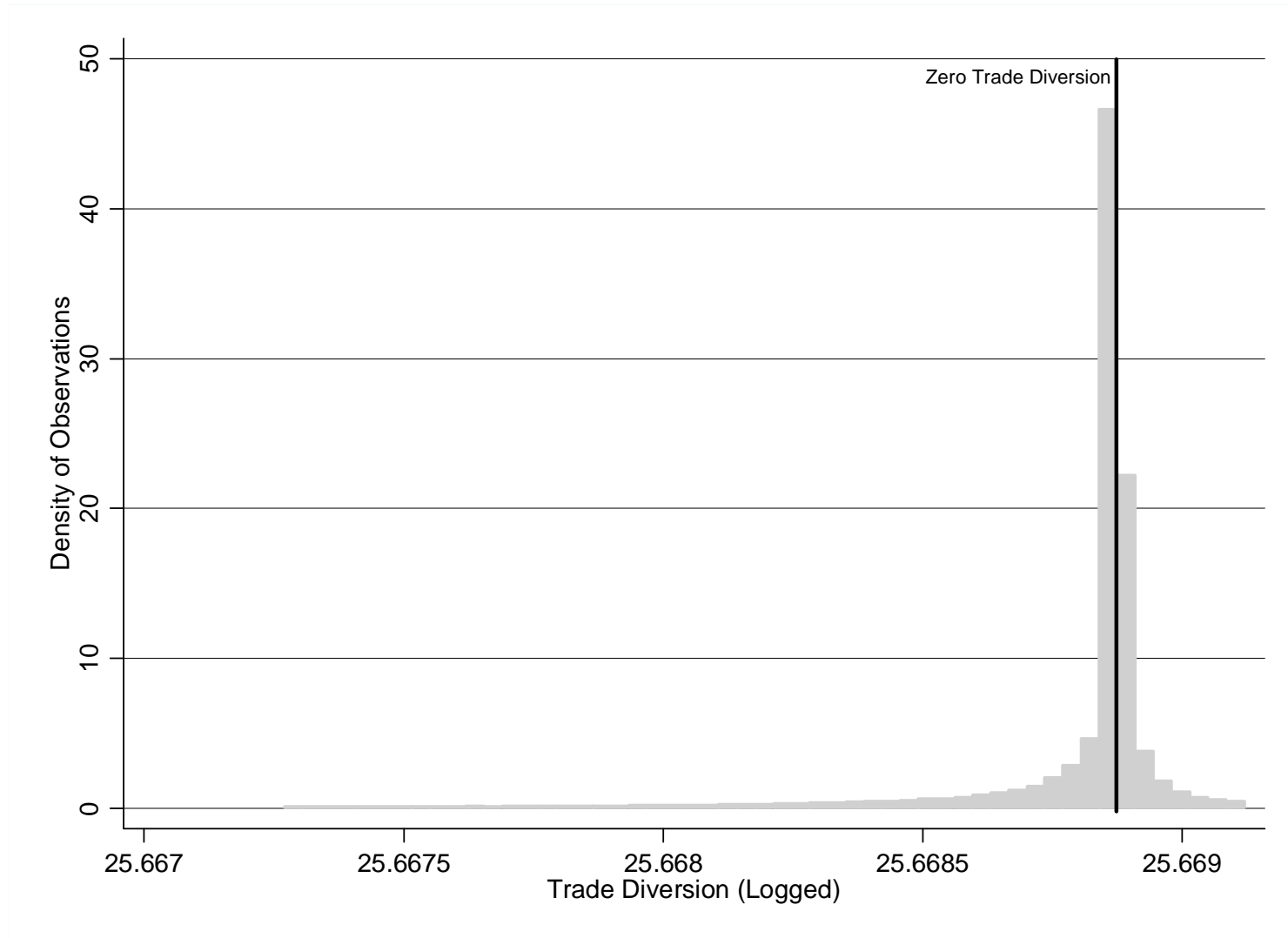


Figure 4.3: Distributions of Trade Diversion

CHAPTER 5

INTRA-AGREEMENT CONFLICT

In Chapter 3, I argued that economic agreements confer tangible benefits on member states by increasing commerce and fostering robust trade networks. The benefits members gain from economic agreement in turn promotes interdependence between states. Increased exchange between members encourages reliance on intra-agreement ties for resources and markets. Overall, members of economic agreements are likely more vulnerable and sensitive to disruptions in trade with other agreements members. Conflict behavior between members of the same economic agreement should also be affected by increased commercial exchange and interdependence. First, the opportunity cost of conflict increases in tandem with economic exchange. Conflict between agreement members likely sacrifices tariff revenue for governments, increases risk for business, and jeopardizes profits for externally oriented actors. Consequently, economic agreements should decrease the likelihood of conflict between member states. Second, the strategies used by agreement members in disputes should also shift as a result of increased interdependence. The less economically dependent state in the dyad, given its relatively more autonomous position, is better poised to use economic sanctions as a tool of coercion. More dependent states, in contrast, cannot effectively use sanctions, and thereby are more likely to use military force in disputes.

This chapter tests this argument with non-directed dyads from 1970 to 2001 using the procedures and data outlined in the previous chapter. In the first section I revisit the

relationship between economic agreements and sanctions in light of my deductive theory. In short, and in spite of my theory, economic agreement members appear less likely to use economic sanctions than those without an agreement. Following this, I statistically evaluate the influence of economic agreements on militarized interstate disputes (MIDs). Ultimately I find that agreements can decrease the probability of militarized conflict if trade relations are asymmetric and intra-agreement trade is high. Shallow agreements, however, can increase conflict if trade interdependence and FDI dependence are high. The next section discusses these results and associated implications for my theory. The fourth section of this chapter presents an alternative statistical test that considers the potentially endogenous relationship between agreements and conflict. Finally, I provide a short illustration of my theory and empirical results by analyzing relations between Uganda and Kenya since achieving independence.

5.1 Revisiting Economic Agreements and Conflict Between Members

One of the key insights from the formal model detailed in Chapter 3 is the substitution of economic sanctions for military force in conflict scenarios. Given the setup of my model, sanctions are possible regardless of interdependence and the cost of conflict. They are particularly likely, however, if the challenger is relatively autonomous and the defender relatively dependent. Sanctions are less likely if the challenger is dependent and the defender autonomous. Asymmetric trade relations are therefore the most likely to result in economic sanctions. Military force is possible in all scenarios, but more likely in dyads with relatively little interdependence. Highly interdependent dyads are less likely to use military force against each other.

The results of my formal model translate to economic agreements in a relatively straightforward fashion. Given economic agreements tend to generate commercial exchange between states and serve as commitments to future interaction, interdependence between members is relatively high. Conflict should be less likely overall, but if it does occur, different strategies should be discernible according to the relative economic position of members. Relatively dependent agreement members are predisposed to military force while relatively autonomous members are prone to using economic sanctions per the implications of my formal model. Likewise, symmetrical economic relations are less likely to encourage military force given the interdependence of members and presumably muted concerns about relative gains.

A preliminary look at the data, however, suggest some interesting patterns between members of the same economic agreement and the strategies they employ when engage in disputes. Figure 5.1 displays the frequency with which states employ any coercive strategy (sanctions or military force), economic sanctions, and military force distributed by agreement type. Consider first the all dyads sample in the left panel of Figure 5.1. Looking at coercion, which is the use of *either* a sanction or a MID, agreement members appear if anything *more* likely to coerce other agreement members than dyads without an economic agreement. Approximately 0.40% of dyad years without an agreement experienced either a MID or economic sanction between 1970 and 2001. In contrast, 0.79% of dyads with a shallow agreement and 1.20% of deep agreement dyads experienced a MID or sanction.

The disparities between dyads with and without an agreement apply to the strategies used in conflict as well. Dyads without an economic agreement tend to use

military force 2.3 times the rate of economic sanctions. Approximately 0.28% of no agreement dyads experienced a MID while 0.12% experienced an economic sanction. The corresponding rate for shallow agreements, however, is approximately 4.3 MIDs for every economic sanction. MIDs have occurred in over 0.64% of shallow agreement dyads while only 0.15% have experienced sanctions. Of the 39 sanctions used by shallow agreement members, 32 are between partial scope agreement members at the lowest levels of integration. Hence, military force is more frequently used by economic agreement members compared to states that do not share membership in the same agreement. Likewise, while agreement members use sanctions at about the same rate as those without an agreement (0.15% versus 0.12% respectively), they use military force at much higher rates (0.64% versus 0.28%).

An analysis of deep economic integration reveals an even more lopsided comparison. Indeed, between 1970 and 2001 – the time period of the TIES dataset – no state in a customs union, common market, or economic union have used economic sanctions against a fellow member. Agreement members, however, are not so constrained vis-à-vis the use of military force. Indeed, if anything, agreement members are *more* likely to use military force against fellow members (0.28% for dyads without agreements and 1.20% for deep agreements). Consequently, deep agreement members appear more prone to both the overall use of conflict and military force as a strategy in conflict.

To be sure, the states most likely to engage in conflict are also the most likely to engage in cooperation as both require international interests and/or geographic proximity. I take this into account by comparing coercion again using only politically relevant

dyads. The right panel of Figure 5.1 shows frequencies for politically relevant dyads (where one state is a major power or the states are contiguous). First, shallow agreement members are still more likely to engage in conflict compared to no agreement dyads (4.18% of dyads and 2.83% of dyads respectively). Second, the ratio of military force to economic sanctions for shallow agreement members is 11.3 uses of military force for every sanction. The corresponding rate for no agreement dyads is 2.3. Third, while the overall incidence of conflict between deep agreement members is more muted in the politically relevant dyads sample (2.35% of dyads experiencing conflict compared to 2.83% for no agreement dyads), it remains wholly militarized in nature.

This analysis brings evidence to bear on several of my hypotheses. First, Hypothesis 1 states economic agreements decrease the likelihood of conflict between member states. This does not appear to be the case given the use of coercion (particularly military force) between shallow and deep agreement members.¹⁵ Moreover, this effect appears to grow stronger as the level of integration deepens. Consequently, I find evidence against my first hypothesis. It is not conclusive, however, as it does not identify the conditions under which militarized conflict occurs. Second, the results are also suggestive for Hypothesis 5 concerning the symmetry of economic relations and use of sanctions or militarized force. The relative infrequency with which agreement members use economic sanctions indicates agreements, if anything, strongly bias members to use military force. Hence, I find evidence against Hypothesis 5 stating that symmetrically dependent agreement members are less likely to use military force against other members

¹⁵ To evaluate this statement more fully, I conducted tests pooling sanctions and MIDs as the dependent variable (coded 1 if either a sanction or a MID occurred, 0 otherwise). As might be expected given the paucity of sanctions, the results are nearly identical to the reported statistical tests using only MIDs. This suggests economic agreements can either decrease or increase conflict under certain economic conditions.

as a tool of coercion than asymmetrically dependent members. Despite these findings, it is still important to evaluate the structure of trade in economic agreement members' decision to use military force, which is the subject of Hypotheses 3 and 4. Given the paucity of sanctions episodes between members, however, I restrict my statistical analysis to evaluating agreement member's tendencies to use military force.

5.2 Statistical Results

Chapter 4 describes in detail the procedure I use for statistically analyzing intra-agreement conflict. To briefly recap, however, this section uses data covering the period 1970 to 2001 for all non-directed dyads. My dependent variable is the onset of a militarized interstate dispute (MID) in a given year. I employ several primary explanatory variables capturing agreement structures and associated economic relationships. The two agreement types I model are shallow and deep agreements. The former comprise partial scope agreements and free trade agreements. The latter include customs unions, common markets, and economic unions. To fully capture bilateral economic relationships between states I interact trade interdependence and trade asymmetry with the agreement variable. I also use national FDI dependence (interacted with the agreement variable) and intra-agreement trade (the sum of all trade a state conducts with other agreement members beside their dyadic partner) to capture economic relationships more fully. I then use logistic regression to analyze both simple and imputed data.¹⁶

¹⁶ I also performed several robustness checks of the results presented here. These include rare-events logit account for the rarity of observed sanctions/MIDs, models with transformations of primary variables, alternative specifications of the primary variables, models pooling sanctions and MIDs into one dependent variable, simultaneous equation models accounting for endogeneity, models with only politically relevant dyads, and the use of only fatal MIDs. The results are identical to those presented here with the exception of fatal MIDs, which are discussed in the appendix.

5.2.1 Basic Logit Results

Table 5.1 contains the results of the logit models estimating the influence of shallow agreements on conflict between member states. Consider first the basic logit model that only uses observed data (i.e., no imputed values). Overall, the results for the shallow agreement model suggest a strong role of agreements in militarized disputes conditioned by the structure of economic relations between member states. The shallow agreement variable, indicating two states share membership in this type of agreement, is negative and statistically significant. Two states that share membership in a partial scope agreement or free trade area are therefore less likely to engage in conflict simply due to the existence of the institution and not necessarily its economic consequences. The pacifying influence of the institution itself may reflect intangible benefits accruing to member states, such as increased international bargaining power in multilateral negotiations, the value of signaling commitments to economic openness, or even the anticipation of future economic gains. This finding is in line with my argument that economic agreement members tend to engage in less conflict than those without joint economic agreement membership.

Beyond the agreement variable, two key additional terms are also negative and statistically significant. First, the intra-agreement trade variable is negative and statistically significant. Consequently, the more states benefit from membership in the agreement by trading with all agreement partners, the less likely they are to engage in military disputes. This result is in line with my overall theory arguing that economic agreements reduce the occurrence of conflict. Second, the interaction between asymmetry and shallow agreements indicates disparate reliance on bilateral trade tends to

reduce the occurrence of militarized conflict. Dyads where one state is relatively more dependent on the other for trade as a share of its overall economy are less likely to engage in militarized conflict. By implication, more symmetric trade relations between agreement members are relatively more conflict prone. This is a somewhat puzzling finding given my theory argues asymmetric trade relations are more likely to result in militarized disputes. The results of the standalone, non-interacted asymmetry variable – which is positive and statistically significant – make these results all the more puzzling. Dyads without an economic agreement and asymmetric trade relations are therefore more likely to engage in military conflict. Hence, while asymmetry increases conflict between states without an agreement, it may reduce it once an agreement is introduced. This brings evidence to bear against Hypothesis 5.

Some aspects of shallow economic agreements also encourage conflict. First, the interaction between shallow agreements and interdependence is positive and statistically significant. States sharing joint membership in a shallow economic agreement are more prone to militarized conflict the more they rely on each other for trade. This is again somewhat of a puzzling finding given the bulk of literature of interdependence and conflict. Indeed, it contradicts my theory arguing that interdependence between agreement members should both decrease the likelihood of overall disputes and shift strategies away from militarized conflict. It is important to note that the standalone, non-interacted interdependence variable is negative and significant, indicating dyads without an economic agreement are indeed less likely to engage in militarized conflict as interdependence increases. Second, the interaction of FDI dependence and shallow agreements is also positive with confidence bounds independent of zero. Shallow

economic agreement members who rely on FDI for increasingly large shares of their economy are more likely to engage in conflict than those with less FDI reliance. Once again, the non-interacted FDI dependence variable is negative and statistically significant. In absence of a shallow economic agreement, FDI pacifies state relations. This suggests some aspect of shallow agreements alters the normal functioning of FDI with respect of conflict. Both findings suggest certain economic relationships encourage conflict, thereby highlighting the conditional nature of Hypothesis 1.

Before discussing the imputed logit results, consider the results of the deep agreement model. Table 5.2 contains the results of the logit models estimating the influence of deep agreements on conflict between member states. Only two primary variables achieve statistical significance in the deep agreement model. First, intra-agreement trade is negative and statistically significant. As with the shallow agreement model, a greater proportion of trade occurring with third-party agreement members tends to pacify bilateral relations. Second, the interaction between asymmetry and deep agreements is negative and statistically significant. This result for deep agreements is in line with those for shallow agreements. Consequently, asymmetric trade relations reduce the probability of conflict between economic agreement members regardless of the depth or scope of integration. Unlike the shallow agreement model, however, the non-interacted asymmetry variable does not achieve statistical significance in the deep agreement model.¹⁷ The interactions between deep agreements and, individually,

¹⁷ To test the baseline impact of interdependence, asymmetry, and FDI without economic agreements, I specified a model using only dyads that do not share membership in the same economic agreement. The results indicate that interdependence and FDI dependence reduce conflict between states (i.e., negative and statistically significant coefficients). Asymmetry increases conflict (a positive and statistically significant coefficient). This is identical to the results of the shallow agreement model, which in subsequent discussions I will refer to when making comparisons between dyads with and without joint membership in an agreement.

interdependence and FDI dependence do not achieve statistical significance, thereby suggesting they do not impact militarized conflict in this context.

The remaining variables in the shallow and deep agreement models exhibit relatively similar patterns. Many variables achieve statistical significance across all model specifications. The two variables capturing opportunities for conflict – contiguity and major power status – are positive and significant across all models (basic and imputed logit, shallow and deep agreements). Two states sharing a border or with at least one major power are more likely to engage in militarized disputes. This is likely due to the increased opportunities for conflict presented to neighbors and highly involved major powers. Likewise, power parity appears to increase the probability of conflict between states given the positive and significant capabilities variable. The intuition behind this finding is straightforward. States only engage in militarized conflict if there is a possibility of prevailing, which in turn is given by relatively similar capabilities.

Larger economies, indicated by the GDP variable, are also more likely to engage in conflict, once again owing to the opportunity large states have to project military power. Interestingly, the more IGOs states share membership in, the more likely they are to engage in conflict. This may suggest the propensity for IGOs to raise issues of disagreement between member states or highlight differences in policy. In line with the robust literature on the democratic peace, democratic states are less likely to experience conflict. Finally, the spatial lag variable for contiguity is positive and significant across all models. States with conflicts on their borders are therefore more likely to be embroiled in conflicts as well. Of the remaining three variables, only alliances achieve statistical significance in any of the models. Allies are more likely to engage in

militarized conflict, but only in the basic logit models without imputed data. Neither joint WTO membership nor the spatial lag based on alliances achieves statistical significance in any of the models.

5.2.2 Imputed Data Statistical Results and Discussion

The results of the logit model using imputed data, contained in the right two columns of Table 5.1 and Table 5.2, present less clear results concerning economic agreements and conflict. Of my primary explanatory variables in the shallow agreement model, only the interaction between shallow agreements and asymmetry achieves statistical significance. It enters into the equation negatively, suggesting once again that asymmetric trade relations reduce conflict while symmetric relations are more conflict prone. In the deep agreement model, only intra-agreement trade is statistically significant. It is also negative such that higher degrees of trade with third-party agreement members reduce dyadic conflict. The remaining variables in both models fail to achieve statistical significance.

Differences in the basic and imputed logit specifications warrant here a more detailed discussion. Overall, the basic and imputed logit models differ in statistical significance on a number of my key explanatory variables. All of my primary explanatory variables achieve statistical significance in the basic logit shallow agreement model. While the corresponding variables for the imputed logit model are of similar signage, only one achieves statistical significance. In the deep agreements model, two primary explanatory variables are statistically significant in the basic logit compared to one in the imputed logit. Perhaps more disconcertingly, however, is that none of the economic variables – interdependence, asymmetry, or FDI dependence – achieve

statistical significance in either model. Indeed, the economic variables do not gain statistical significance in tests where agreements and all interaction variables are removed. Economic relations, therefore, have little to do with conflict according to my imputed dataset.

There are several possible explanations for these findings. First, and perhaps most basically, is that economic relations do not truly have an effect on interstate conflict. In other words, the imputed data may be the more accurate reflection of reality. While this may be the case, several other studies using imputed data find economic relations do indeed influence conflict (Gelpi and Grieco 2008; Boehmer, Jungblut, and Stoll 2011). My analysis incorporates more economic variables than previous studies, but that does not explain *a priori* the lack of statistical significance on all variables. Second, the sheer amount of missingness in my dataset – most of which is a consequence of the economic variables mentioned – may complicate statistical analysis. Using imputed data allows me to increase the number of observations by 90% from approximately 183,000 to 347,000. This amount of constructed data may unduly bias against finding results on my primary explanatory variables. Indeed, Boehmer, Jungblut, and Stoll (2011) use Monte Carlo simulations to find that statistical analysis of trade data is meaningfully impacted as the proportion of missing data increases. Given the nearly 1:1 ratio of observed to missing data, it is not unreasonable to think my results biased by the scale of missingness.

Third, to return to a point Barbieri, Keshk, and Pollins (2009) have made, missing data is often missing for political reasons. Periods of conflict or tense relations may result in missing trade data, for example. Certain types of states are also less likely to supply trade statistics. Boehmer, Jungblut, and Stoll (2011) find that states with missing

trade data are less democratic, less developed, and materially weaker than those that supply statistics. I replicated and expanded their analysis with my dataset to analyze missing data, as well. In addition to the aforementioned factors, geographic distance, lack of participation in international organizations, and conflicts in neighboring countries also increase missingness of both trade and FDI data. While I have taken care to model these factors into generating my imputed data, the results may still be inaccurate. In particular, as Appendix A illustrates, the imputation model does poorly at predicting zero trade values. Several of the factors predicting missingness also predict zero trade flows, including distance, power disparities, and conflicts in neighboring countries. It is reasonable to believe inaccuracies in the imputed trade data stems from the tendency of statistical models (and researchers) to specify trade values where none may exist. Hence, the nature of missingness in trade data may stymie my efforts to develop accurately imputed data.

As for its overall impact on my analysis, the results of the imputed logit model are to be taken seriously. I am less confident in them, however, the validity and usefulness of imputed trade data based on the factors I mention in this section. I believe it important to report this alternative finding, however, in the interest of those who may look upon the basic logic results skeptically because of missing data. I believe it also important to provide more rather than less analysis in the case that my suspicious of imputed trade data are warranted. Consequently, my empirical analyses in Chapters 5 and 6 will favor the basic over the imputed logit for purposes of interpretation and discussion. Furthermore, this can be observed as the more conservative route from the perspective of the literature and policy. I doubt many scholars will dismiss the findings of the trade and

conflict literature based on the imputed dataset I propose. Likewise, the riskier route for policymakers is to dismiss the impact of trade on conflict given I find it can both assuage and exacerbate tensions. Consequently, I believe the results of the basic logit model are worth reporting and interpreting.

5.2.3 Substantive Interpretation

Before discussing the theoretical implications of my results, it is important to consider the substantive impact of my variables of interest. First, recall the shallow agreement variable is negative and statistically significant. Given this is a simple dichotomous variable, I estimate the change in the predicted probability of a MID by shifting the shallow agreement variable from 0 to 1 while holding all other variables at their mean or modal values using Clarify (Tomz, Wittenberg, and King 2003). The baseline probability of a MID given all variables are held at their mean or modal values is 0.071%. Two states sharing membership in a shallow economic agreement have a MID probability of 0.064% for a total decrease of 8.88%. By way of comparison, this is roughly equivalent to an increase of two units on the dyadic democracy score generated using Polity IV. Forming a shallow economic agreement therefore results in a small, but noteworthy, decline in the probability of militarized conflict.

I use a series of graphs to interpret my remaining primary explanatory variables. Figure 5.2 plots the out-of-sample predicted probabilities for the primary explanatory variables in the shallow agreements model. All probabilities were calculated by manipulating the variable of interest while holding all other variables at their mean or modal values. The solid line indicates probabilities for shallow agreements while the dashed line plots dyads without any agreement for comparison. The band and spike plots

around the lines are the 95% confidence intervals for shallow and no agreement dyads respectively. Finally, note also the different scaling between the top and bottom two quadrants. This is done for convenience of presentation given the disparities in predicted probabilities and directionality of the variables.

The two top plots of Figure 5.2 are for trade asymmetry and intra-agreement trade, both of which reduce the probability of militarized conflict. The baseline probability of a MID is approximately 0.07% for states in a shallow agreement. As one shallow agreement member in the dyad develops a more dependent economic relationship, meaning it relies on its dyadic partner for a relatively larger portion of trade and economic activity, the probability of a MID decreases. At relatively asymmetry levels approaching 8% of GDP, the probability of a MID is only approximately 0.03%. This contrasts with dyads that do not share membership in an agreement. The probability of a MID increases from approximately 0.06% to 0.09% as asymmetry rises from 0% to 8% of GDP. It is also important to note that a clear distinction between shallow and no agreement dyads cannot be made until approximately 6% of GDP, where the two confidence intervals diverge. This is a relatively high threshold with values that only approximately 25% of politically relevant dyads reach. Consequently, the majority of shallow agreement dyads exhibit similar behavior to no agreement dyads vis-à-vis trade asymmetry. Intra-agreement trade exhibits a similar pattern. As the states in the dyad rely more on other agreement partners for trade, and therefore experience relatively higher costs of conflict, the probability of conflict declines from 0.07% when no third-party trade occurs (as with bilateral trade agreements) to 0.01% if the geometric mean of intra-agreement trade approaches 20%.

The bottom two panels of Figure 5.2 plot FDI dependence and interdependence, both of which increase the probability of militarized conflict between shallow agreement members. In absence of a shallow agreement, FDI dependence reduces the probability of a MID between states from approximately 0.07% to 0.02% at geometric mean values of 10%. In contrast, shallow agreement members actually experience an increase in conflict due to FDI dependence. This probability increases to approximately 0.2% at 10% FDP dependence. Note two additional points concerning the comparison of shallow and no agreement dyads. First, if FDI dependence is negative, indicating a net outflow of capital, the probability of a MID is lower for shallow agreement members compared to no agreement dyads. Second, the confidence intervals for shallow and no agreement dyads again diverge at approximately 5% of GDP. Consequently, if FDI dependence is between approximately 0% and 5%, its effect for shallow and no agreement members is almost indistinguishable. FDI dependence greater than 5%, however, results in a higher probability of MID initiation for shallow agreement dyads than no agreement dyads. Overall, approximately 10% of shallow agreement dyads experience FDI dependence above this threshold.

Trade interdependence, shown in the bottom right plot of Figure 5.2, also increases the probability of conflict. As shallow agreement members rely more on each other for trade, the probability of experiencing a MID increases from 0.07% with 0% trade to approximately 0.15% probability at geometric mean values of 4%. Dyads without an agreement, in contrast, experience less conflict as trade interdependence increases. Furthermore, the confidence intervals between shallow and no agreement dyads begin to diverge around approximately 2%, after which the effect of shallow agreements is

statistically discernible from states without an agreement. Again, approximately 10% of shallow agreement members breach this threshold.

Turning to the deep agreement model, consider first what might be considered a typical case. When holding all variables constant at mean or modal values, dyads without an agreement have a 0.064% chance of a MID. Keep all variables again at mean or modal values, but shifting the deep agreement variable from 0 to 1, the probability of a MID decreases approximately 70% to 0.019%. Given what might be considered the most typical case, consequently, deep agreements reduce conflict. Figure 5.3 plots predicted probabilities to evaluate the influence of specific variables. Both trade asymmetry and intra-agreement trade reduce conflict between deep agreement members. First, as trade asymmetry increases, the probability of a MID decreases from approximately 0.06% to 0.01% if asymmetry reaches a geometric mean of 4% in the dyad. Unlike asymmetry's effect in shallow agreements, however, deep agreement members are more sensitive to asymmetry. Confidence intervals for deep and no agreement dyads diverge at approximately 1.2%, a value over 50% of deep agreement dyads achieve. Consequently, asymmetry tends to pacify the majority of deep agreement members. The effect of intra-agreement trade is more muted for deep agreement members. While the effect is statistically significant, it is relatively mild. MID probability decreases from 0.03% to approximately 0.01% at geometric mean values of 20%, values approximately 22% of deep agreement members achieve.

5.3 Discussion of Statistical Results

The results of my statistical analysis provide mixed evidence for my hypotheses concerning intra-agreement conflict. Hypothesis 1 states that economic agreements

decrease the likelihood of conflict between member states. The cross-tabulations presented at the outset of this chapter indicate economic agreements may actually be more conflict prone than dyads without agreements. However, statistical analysis indicates that economic agreements can reduce conflict *under certain circumstances*. In particular, dyads with asymmetric trade relations and high levels of trade with third-party agreement members experience less overall conflict.¹⁸ This holds true for both shallow and deep agreements. High levels of dyadic trade interdependence and FDI dependence, however, tend to exacerbate conflict between members of shallow agreements. Overall, holding all other variables constant, shallow agreement members are 8.8% less likely to experience a MID while deep agreement members are 70% less likely. If mean and modal values are taken to be the typical case, it appears economic agreements on the whole reduce conflict, providing partial support for hypothesis 1.

The remaining hypotheses are generally not supported, however. Hypothesis 3 states that less economically dependent agreement members are more likely to use economic sanctions against other members as a tool of coercion. Given the extreme infrequency with which economic agreement members use sanctions, however, no support is available for this hypothesis. Hypothesis 4 states that more economically dependent agreement members are more likely to use military force against other members as a tool of coercion. It is difficult to evaluate this hypothesis without sanctions as a reference. However, asymmetry appears to actually reduce the likelihood of MID initiation according to my statistical models. No support therefore exists for this hypothesis. Likewise, Hypothesis 5, which states that symmetrically dependent

¹⁸ Recall footnote 1, which outlines my tests pooling sanctions and MIDs as the dependent variable (coded 1 if either a sanction or a MID occurred, 0 otherwise), the results of which were identical to those reported in the MIDs table.

agreement members are less likely to use military force against other members as a tool of coercion than asymmetrically dependent members, is unsubstantiated by the results of my tests.

These results raise several questions and puzzles in light of my theory. Perhaps the most pressing of which is that some of the implications from my formal model suggest economic agreement members are the most likely to utilize economic sanctions as an alternative strategy to military force. Agreements tend to foster interdependence between members by increasing trade, investment, and intangible benefits. Furthermore, they possess ready-made institutional mechanisms that allow for the coordinated economic action sanctions require (Martin 1992). However, the findings in this chapter indicate that economic agreement members are actually much less likely to use sanctions. One possibility is that the institutional structure of economic agreements may prevent or severely restrict the use of economic sanctions. First, the legal framework of agreements may prohibit their use. If economic sanctions are indeed foreign policy “on the cheap,” we might expect agreements that do indeed restrict the use of sanctions to all but eliminate them as a low-cost, low-risk coercive strategy. Only serious disputes that warrant militarization are therefore observed as conflicts at the international level.

Second, a state that uses an economic sanction against another member may face a coordinated response from other states in the agreement. In other words, agreements may practice “collective economic security” by responding to sanctioning states with coordinated, “overwhelming” economic force. Hence, sanctions are unlikely to succeed on their own. Military force, however, may actually work by raising the stakes of conflict and demonstrating more clearly the resolve of aggrieved parties. Finally, as

Bearce and Bearce and Omori (2005) argue, economic agreements may provide conflict resolution forums that obviate the need for any type of coercion. Regular meetings of leaders within the framework of economic agreements, for example, provide an opportunity to resolve issues before coercion is needed. Again, the only disputes that therefore reach the coercion stage are those worthy of being militarized.

Third, economic sanctions may not be substitutes for military force. This is not to say sanctions can never be, or never are, used to the same ends as military force. What it suggests instead is that the range of issues for which both economic sanctions and military force can be useful may be limited. Sanctions may be employed for one set of issues while military force is reserved for more serious disagreements. Economic agreements may obviate the need for sanctions to address this set of issues due to conflict resolution mechanisms. Likewise, sanctions and military force may not be substitutes for all states equally. Weak or isolated economies, for example, may not be able to use sanctions and instead use military force as a first-best strategy. Economic agreement members, in turn, may not possess the characteristics that allow for the use of sanctions. Alternatively, sanctions and military force may be used concurrently such that they are compliments rather than substitutes. Sanctions would not necessarily be observed in such cases, as they are often coupled with military force when used as a coercive policy.

A second major puzzle raised by my results is the conflict inducing tendencies of trade interdependence and FDI interdependence between members of shallow economic agreements. This finding goes against many arguments in the broader liberal peace, but can possibly be explained by several forces. Economic agreements may highlight the policy differences or security issues between member states, thereby increasing the

likelihood of conflict. Integration may increase economic tensions between member states by bringing business into direct competition for markets and resources (Viner 1950). Intense competition between members agreement members, which might be expected when the share of trade between states is relatively high, may encourage states to view economic linkages in terms of relative gains and losses. Even complementary trade can promote this view if states are concerned about their terms-of-trade or overreliance on partners for certain resources. Commercial and political competitions are often linked inasmuch as wealth is a means to power and vice versa (Viner 1948; Hirschman 1980; Gilpin 1987). Concerns about the equitable distribution of gains and its impact on power relations, therefore, can arise if commercial competition is sufficiently intense. The codified nature of agreements compounds this problem by institutionalizing trade relationships and competition through formal structures. Furthermore, foreign direct investment may flow from outside the agreement to particular agreement members and not others, thereby advantaging one state over others. FDI disparities may once again encourage relative gains concerns inasmuch as investment increases the industrial and latent military capacity of the receiving state. The substantive results of FDI dependence displayed in Figure 5.2 lend credence to this argument. Shallow economic agreements tend to encourage conflict when FDI dependence is relatively high, which presumably is when competition for investment is also relatively high. Hence, economic agreements may increase competition over finite resources and expose the vulnerabilities of both states and firms.

Indeed, while economic agreements can embolden internationally invested constituencies, it can also foster reactionary elements opposed to openness (Panagariya

and Findlay 1994; Krugman 1999, 384-385; Schiff and Winters 2003, 72). While this is unlikely to actively foster conflict, it may be enough to enable it by short-circuiting the pacifying influence of domestic constituencies. In other words, if conflict is possible between two agreement members, a business elite losing to foreign competition may not be as vocal in stopping the conflict. As an example, Honduran workers witnessing inflows of Salvadorians and the corresponding increase in job competition resulting from the Central American Common Market triggered protests and sporadic violence in the state (Cable 1969). This likely contributed to the 1969 Football War between the two agreement members. Economic agreements further exacerbate or solidify tensions by imposing some degree of binding structure on commercial relations through a codified structure (Whalley 1996; Schiff and Winters 1998). Consequently, rather than fostering interdependence, shallow economic agreements may simply highlight dependence and strategic vulnerability between agreement members.

A third puzzle is the influence of trade asymmetry on conflict. I argue that asymmetry is likely to increase militarized conflict while symmetry reduces it. My statistical results indicate the opposite, however, for both shallow and deep agreements. One possible explanation is that trade asymmetry is also indicative of general power asymmetries. In particular, both power and trade asymmetries likely exist between economically large and small states. The more dependent state in the power/trade asymmetry may be unable to either use or resist threats. Consequently, it complies with demands before coercion is used. Only issues on which both states are greatly resolved reach the coercion stage. Lending credence to this argument is that some agreements tend to reflect asymmetrical relationships between states. For example, the African,

Caribbean, Pacific – European Community agreement (APC-EC) signed in 1963 and expanded in 1975 provides seventy-nine developing states with market access to European Community states for certain goods. The United States and Australia hold similar agreements within their respective spheres of influence (Whalley 1996). Deep agreements may also foster asymmetry, as they might be attempts by economically dominant states to solidify or entrench privileged economic access to smaller markets. Asymmetry may therefore foster capitulation by the dependent state rather than resistance and coercion.

One particularly interesting finding in my analysis is the role of intra-agreement trade on conflict. The pacifying influence of intra-agreement trade suggests an interesting causal process at work. In particular, Martin, Mayer, and Thoenig (2008) argue the influence of dyadic and systemic trade relations work in opposite directions. Robust bilateral trade relations tend to reduce conflict between any given two states. Greater multilateral openness, however, tends to reduce the cost of conflict in ways that may actually promote (or at least fail to restrict) militarized conflict. Relations between economic agreement members, which might be considered regionally focused, are situated between dyadic and systemic dynamics. Opportunity costs of conflict should be lower between agreement members in the logic of Martin, Mayer, and Thoenig (2008), thereby leading to an increase in the probability of conflict if anything. Finding that intra-agreement trade actually reduces conflict suggests an important role for the structure and pseudo-formality of agreements in restraining conflict. That is, the codified framework of trade relations established by economic agreements and the inherent excludability of benefits in the advent of conflict may in fact increase opportunity costs in ways that

reduce conflict. Multilateral openness, in other words, may reduce conflict if appropriately structured and defined.

5.4 An Alternative Statistical Consideration

The results presented in previous sections suggest economic agreements do indeed have an influence on interstate conflict, even if it only offers qualified support for my hypotheses. It is important to consider more carefully, however, the complex relationship between economic agreements and interstate conflict. In particular, it can be argued that an endogenous relationship exists between agreements and conflict. On one hand, states that share relatively robust economic ties may be less likely to engage in conflict given the opportunity cost associated with fighting. By the same token, however, states with a propensity for conflict are unlikely to form relatively complex cooperative arrangements as economic agreements.

Accounting for this endogenous relationship is somewhat difficult given the number of key factors inherent in economic integration. It is possible, however, to incorporate the formation of an economic agreement into the analysis of conflict initiation using a Heckman selection model. Specifying membership in either a shallow or a deep agreement as the selection criteria, with initiation of a MID as the outcome variable, allows me to account for states' selection into cooperative agreements when analyzing conflict. In other words, this specification can aid in controlling for the proclivity of states to only enter into agreements with states they view as peaceful. One drawback of this approach is that selecting on agreement membership precludes inference into how agreement specifically influences conflict. However, I can still identify how my primary economic variables (asymmetry, interdependence, FDI dependence, and intra-

agreement trade) influence conflict between agreement members, as the outcome equation is limited to a sample of only shallow or deep agreement members per the selection criteria.

In specifying the selection equation of this alternative statistical approach, I use membership in a shallow or deep economic agreement separately as the selection criteria. To predict membership in an economic agreement, I use many of the variables used in the prediction of MIDs. Specifically, interdependence, asymmetry, FDI dependence, alliances, contiguity, democracy, GDP, major power status, peace years and WTO membership are all included in both the selection and outcome equations.¹⁹ The Heckman model depends in large part on the availability of exclusion criteria in the selection equation. Consequently, I include inter-capital distance, whether states share a common language, the geometric mean of logged population, political affinity based on UN vote similarity (Gartzke 2008), and the cumulative total of dyadic MIDs since 1950 in the selection equation only. Finally, to the outcome equation, I add capabilities, IGO membership, and spatial lag variables as with my basic logit specifications.

Table 5.3 contains the results of the Heckman selection model. The top half of the table displays the estimates for militarized interstate disputes as the outcome variable divided by shallow (left columns) and deep (right columns) agreements. Because the selection criterion is membership in either agreement, the outcome equation contains only dyads in either a shallow or deep agreement. In other words, the coefficient estimates reflect the variable's impact on states sharing membership in that particular agreement. Consider first the shallow agreement results. As with the basic logit model, asymmetry

¹⁹ Contiguity and major power status are excluded from the deep agreement model outcome equation, as the combination with the selection equation perfectly predicts peace.

and intra-agreement trade reduce the likelihood of conflict between states sharing membership in a shallow economic agreement. FDI dependence, in turn, increases the probability of conflict. One change from the basic logit is that interdependence is statistically insignificant in the Heckman specification. The results of the deep agreement model are also remarkably similar to the basic logit specification. Both trade asymmetry and intra-agreement trade tend to reduce the occurrence of MIDs between deep agreement members. Overall, therefore, the Heckman and basic logit specifications are nearly identical for my primary explanatory variables in both the shallow and deep agreement models.

While it is not the primary reason for estimating the Heckman model, some insights can be gleaned from the selection equation as well. Several variables increase the probability of forming either a shallow or deep economic agreement. Dyads with a major power are more likely to form either agreement. This is presumably due to the far reaching economic interests of major powers. Allies, WTO members, and states with high affinity are more likely to form either agreement, which is most likely a reflection of common political or security goals. Two gravity model variables – distance and common language – influence both agreement types, albeit in different ways. Not surprisingly, distance reduces the likelihood of forming agreements while sharing a common language increases it. Both are likely consequences of the opportunities for cooperation.

The remaining variables are less clear-cut with respect to agreement formation. Contiguity, for example, positively influences deep agreements but negatively influences shallow ones. This may indicate geographically proximate states are more likely to form deep instead of shallow agreements, thereby suggesting a substitution mechanism.

Likewise, large economies tend to form deep agreements over shallow ones given the positive and significant sign on the former and negative on the latter. The opposite effect is witnessed for population, where more populous states tend to form shallow instead of deep agreements. High degrees of trade interdependence tend to result in deep instead of shallow agreements in contrast. This suggests states with robust trade tend to form either deep agreements or no agreements. Intuitively, this might make sense, as shallow agreements may be a tool to jumpstart rather than lock-in trade. Trade asymmetry and FDI dependence reduce the probability of forming deep agreements but have no effect on shallow ones. Likewise, democracies are more likely to form deep agreements. Finally, the sum of dyadic MIDs does not influence agreement formation.

Overall, the results of Heckman selection models largely support the previously discussed logit models. While this does not completely rule out the potential for endogeneity, it does help guard against it by accounting for selection into agreements as part of the conflict dynamic.²⁰ It also strengthens previous results by demonstrating the economic variables influence agreement member conflict behavior even when the sample is limited to only agreement members.

5.5 Uganda-Kenya, an Illustration of Economic Agreements and Conflict

The results of my statistical analysis provide some support for my argument that economic agreements reduce conflict but little support that they encourage the use of sanctions. Some of the more interesting findings to emerge from my analysis, however, concern the role of particular economic forces in the conflict process. In particular, both FDI and interdependence are found to increase conflict between shallow agreement

²⁰ I also specified a series of granger causality tests with various lag structures. All tests indicated both shallow and deep agreement granger cause MIDs.

members while failing to restrain conflict in deep agreements. To help make sense of these findings, I offer a brief example illustrating the potential conflict inducing tendencies of trade interdependence and FDI dependence between agreement members. In this section, I consider the case of Uganda and Kenya since independence. Uganda's relationship with Kenya in context of several commercial agreements and more than three decades of competition illustrates how economic integration can fall prey to security dynamics. Economic circumstances helped condition tensions between the two which, in turn, influenced conflict behavior in four general periods. In total, Uganda initiated four militarized disputes in 1973, 1976, 1987, and 1989, the latter two of which were fatal. All four disputes occurred during periods of integration, while periods without economic agreements did not witness conflict initiation.

My intention in this section is not necessarily to offer a detailed, systematic case study analysis of my theory. I am instead interested in leveraging the advantages of qualitative research in identifying and fleshing-out causal processes as a complement to my statistical analysis (Brady, Collier, and Seawright 2004). Indeed, given the somewhat counterintuitive findings in my statistical models, this example can serve as both an illustration of how causal mechanisms work and a "sanity check" of sort ensuring the processes my models suggest are actually plausible (Granato and Scioli 2004; Bennett and Elman 2006; 2007). In addition, given my theory and portions of results specifically reference non-events (i.e., the absence of conflict), this qualitative assessment can help highlight some the causal processes quantitative techniques may not capture (Maoz 2002).

Consequently, in this section, I use process tracing techniques to help illuminate the underlying mechanisms of conflict and subsequent “story” inherent in the quantitative models. This approach has particular advantages. By connecting pieces of the policy process across time, process tracing can more easily identify the reasons for outcomes *and* non-outcomes critical to my theory (Tarrow 2004, 173-174). Furthermore, by inherently analyzing a broad temporal domain, process tracing is possible and effective in analyzing a single dyadic interaction. In turn, I select the Uganda-Kenya case primarily because it exhibits extensive variation in both the dependent and independent variables of military force and economic agreements respectively. Given my approach and intentions, I believe this illustration a useful component of my analysis and subsequent theoretical implications.

5.4.1 Rivalry Development and the East African Community (1967-1977)

Uganda, Kenya, and Tanzania operated semi-autonomously while under British Colonial rule and achieved independence as separate states in the 1960s. Strong, well-grounded economic and institutional ties, including a customs union, developed during the colonial era that carried over after interdependence. The region’s first attempt at economic integration as independent states was the East African Community (EAC), initially called the East African Common Services Organization (EACSO), and lasted from 1961 to 1977. The EAC sought deeper integration than achieved under colonialism by way of a common market that achieved the relatively free movement of labor and capital (Gladden 1963). In addition, it created a robust administrative network to manage common assets and economic coordination between the states. The heads of government for each state shared membership in the East African Central Assembly, which served as

the highest authority in the organization. Shared services included transportation (notably rail and air), communication, and income taxation (Gladden 1963). Common assets accounted for 21,000 jobs and 8% of the region's GDP (Nye 1963).

Simultaneous with early economic integration was the development of security concerns between Uganda and Kenya. First, tensions developed as Ugandan leadership turned increasingly nationalist and radical after independence. Growth in the military's influence under Milton Obote and his decision to restrict, then ban, Kenyan workers from Uganda peaked concern in the mid-1960s (Mutibwa 1992, 67). Second, ideological differences emerged as Kenya developed a relatively open capitalist system while Uganda tended towards more socialist policies. Finally, instability in Uganda allowed for the continuation of security concerns through subsequent decades. Radicalization of Ugandan policy notably heightened after Idi Amin gained power in the 1970s. Strategic rivalry persisted in the 1980s due in large part to instability in Uganda fueling suspicion of Kenyan influence in the region and numerous incidences of conflict (Byrnes 1990).

In addition to political issues, economic integration contributed to deteriorating relations between Uganda and Kenya under the EAC. Although significant cooperation was achieved, Kenya accrued disproportionate gains due in part to the agreement. Kenya possessed the majority of manufacturing capacity in the region. The agreed upon common external tariffs, erected to spur industrial development region-wide, primarily benefited Kenyan firms (Nye 1963; Stock 2004, 445). One way in which this advantage manifested was intense commercial competition. Figure 5.4 sketches the economic relationship between Uganda and Kenya from 1970 to 2000. The top panel plots trade dependence (bilateral trade as a share of GDP) while the bottom plots FDI dependence

(total inward FDI). Bilateral trade over time constitutes a significant portion of the economies of both states. Furthermore, the relationship is relatively symmetric for most of the time period, save for a period between 1978 and 1984 which I will discuss. Kenya also attracted the majority of foreign investment in the region due to both its more developed industry and port access (Nye 1963; Stock 2004). Until the 1990s, Uganda oscillated between years of very modest inflows and occasional outflows in absolute terms and relative to GDP. Kenya, on the other hand, maintained robust capital inflows, particularly compared to Uganda. Perhaps most importantly, however, is that Uganda and Tanzania perceived their economic relationship with Kenya as highly competitive and zero-sum. Beliefs that Kenya's success came at the cost of Uganda and Tanzania were the norm in both states (Fellows 1966). One Tanzanian official stated "we do not appreciate our people being exploited for the benefit of industries in Kenya" (Quoted in Nye 1963, 486).

At several points in time the Uganda-Kenya rivalry erupted into bouts of deadly militarized conflict, all initiated by Uganda, stemming in part from tenuous economic relations.²¹ Outbreaks of violence during the 1970s were aided by perceptions of economic dependency and the proliferation of contentious issues. Leading to the first set of conflicts in the 1970s, it is clear that Uganda was simultaneously concerned with their economic position vis-à-vis Kenya and constrained by membership in the EAC. Uganda embarked on a series of self-sufficiency programs in the late 1960s designed to wean the economy of Kenya dependence. On January 27, 1967, *The New York Times* documented extensive Ugandan policy changes promoting foreign investment, diversifying exports,

²¹ Between 1970 and 2004, Kenya initiated three militarized conflicts against Uganda (1975, 1995, and 1997). None of the conflicts initiated by Kenya resulted in fatalities.

and stemming the tide of imports without upsetting the tenets of the EAC. Membership in the EAC, however, prevented the government from raising tariff barriers to address strategic concerns. Uganda's trade balance with Kenya deteriorated further during the 1970s as Amin's policies wreaked havoc on industry (Kasozi 1994). Tensions further escalated in 1972-1973 when Amin vetoed a 1972 financing bill for EAC common services, effectively putting them on life-support and challenging legitimacy of EAC administrative bodies (Mohr 1972). The following year, Uganda again challenged several common services, including the common tax regime and the harbor commission and the EAC (Shilling 2005, 378).

Relations reached a low in 1973 partially as a result of economic tensions between the two states. Despite efforts at self-sufficiency, Ugandan competition with Kenya businesses increased. The deterioration of Ugandan industry both opened the door to Kenyan exports and afforded them additional leverage in service negotiations (Jorgensen 1981, 297-298). Imports from Kenya increased 8% and 49% in 1972 and 1973 respectively while exports to Kenya decreased 10% and 38%. Kenya was also able to negotiate advantageous terms for the transport of goods as a result of Ugandan economic weakness (Kasozi 1994, 120). Then, as noted in the *New York Times* of February 4, 1973, Kenya suspended shipments of dairy products to Uganda in retaliation for the latter party's refusal to make payments on previous Kenyan exports. Uganda, in turn, accused Kenya of exploiting common institutions – notably railroads and harbors – for their own gain (Shilling 2005, 378). Uganda's vulnerability combined with long-standing security concerns and fears that Kenya sought to destabilize Uganda to further

increase tension. Ultimately, in context these issues, Uganda threatened Kenya with military force as relations reached new lows.

Relations continued to deteriorate under Amin leading to military action and the dissolution of the EAC. Although Uganda's trade dependency on Kenya lessened in 1975, it grew again in 1976 as imports surged to record highs. Disagreements continued over the distribution of commonly administered assets in the organization. During this period, Uganda refused to remit payments to Kenya for the administration of the common railway and airline and once again accused Kenya of abusing the EAC (Hughes 1977; Shilling 2005). Under the strain of the economic situation, Amin laid claim to portions of Kenya and hinted at claiming it by force in February of 1976 (Hughes 1977; Lewis 1976). The Kenyan government responded with a series of administrative measures that included demanding cash payments for the transit of all Uganda goods and a fuel embargo (Darnton 1976). Uganda retaliated by cutting electricity supplies to Kenya affecting between 10% and 25% of the population (Hughes 1977; Kasozi 1994, 38). Uganda ultimately launched a series of cross-border raids into Kenyan territory both in retaliation and as a signal to domestic constituencies of the threat Kenyan posed (Kasozi 1994, 38-39; US State Department 1976). The EAC effectively ceased functioning in 1977 as a result of the economic and political turmoil (Hughes 1977; Stock 2004).

5.4.2 Ugandan Instability and Interregnum in Integration (1978-1982)

The interregnum between the dissolution of the EAC and establishment of the Preferential Trade Area for Eastern and Southern Africa in 1982 did not witness militarized conflict between Kenya and Uganda. This period of relative calm in the rivalry is likely attributable to several factors. First, Tanzania surpassed Kenya as

Uganda's primary security concern in the late 1970s as the two states waged war. An unintended consequence of the conflict was a lull in Uganda's otherwise tense relationship with Kenya. Second, the removal of Amin from power in 1979 ushered in a period of instability as government forces battled the National Resistance Movement (NRM) for power from 1981 until the latter party prevailed in 1985 (Byrnes 1990). Domestic security concerns preoccupied the interest of Ugandan government during this period.

Two economic factors likely played into the lull in relations as well. First, the dissolution of the EAC removed some contentious issues from the table, including charges that Kenya manipulated institutions for its own benefit. Second, the Ugandan economy essentially collapsed from years of mismanagement and political instability (Kasozi 1994). As a consequence, the nature of the Uganda-Kenya trade tie changed as well. Ugandan trade dependence on Kenya spiked sharply during this period. This effectively created an asymmetric relationship where Uganda clearly dependent more on Kenya than Kenya on Uganda. In the first three years after the collapse of the EAC (1978 – 1980), exports to Kenya, overwhelmingly comprised of coffee, tea, and tobacco, experienced a surge to an average of \$3.6 million from a low of \$1.0 million in 1977 (Morrissey and Rudaheeranwa 1998). Likewise, economic reform in Uganda, part of which included commitments to a new economic agreement, revived imports that particularly benefited Kenyan comparative advantages in manufactured goods and transportation (Musila 2004).

5.4.3 Renewed Tensions and the New Wave of Integration (1983-1989)

Economic cooperation revived six years after the collapse of the EAC in form of the Preferential Trade Area for Eastern and Southern Africa (PTA-ESA). Created in 1982, the agreement brought Uganda, Kenya, and over a dozen other African states together in a loose-fitting trade agreement. Despite its modest goals of reducing, not eliminating, trade barriers, the agreement created a relatively elaborate administrative structure. Shared institutions created by the agreement include a payments clearing house (1984), a development bank (1985), an association of commercial banks (1987), and provisions for meetings of political elites (Asante 1997, 51-55). In 1994, the PTA-ESA was recast as the Common Market for Eastern and Southern Africa (COMESA) in accordance with goals of deeper integration.

Disparate patterns of trade emerge in the new organization as Uganda and Kenya relied on intra-agreement trade to differing degrees. Figure 5.5 plots the total intra-agreement trade (i.e., total trade with other agreement members) for the two states. Not surprisingly given its advantageous economic and geographic position, Kenya relied on economic agreements much more heavily than Uganda for trade and economic activity. During the period of the PTA-ESA, Kenya averaged 3.11% of its GDP in trade with other agreement members compared to 0.27% for Uganda. Intra-agreement trade, therefore, appear to be a much stronger force in Kenya than Uganda.

Conflict between Uganda and Kenya flared again in the late-1980s in part from economic tensions. Particularly important during this period were concerns about relative gains and the influence of domestic constituencies. Although the PTA-ESA involved more players and called for less integration than the EAC, Kenya clearly emerged as one of the central states in the agreement (Asante 1997, 49). Distribution of

gains from the preferential trade area arose once again as an important issue between Uganda and Kenya and one of the defining elements of agreement (Asante 1997, 71; Rule 1984). Uganda responded with attempts to develop alternative trading partners, including deals with Libya exchanging goods for oil, but remained highly competitive with Kenya for the majority of trade goods (Harden 1987b).

Tensions boiled over in 1987 sparked in part by conflict over coffee transport. In the 1980s, coffee was the largest foreign exchange earner for Uganda and comprised the majority of its exports (Buckoke 1988; Morrissey and Rudaheranwa 1998). Shipments of coffee, furthermore, flowed almost exclusively through the port of Mombasa in Kenya. Consequently, it was both of supreme strategic importance for Uganda and vulnerable to disruptions. The strategic importance of coffee also afforded those connected with the industry strong influence in the Ugandan government (Forrest 1988, 426). In 1987, the key entity responsible for purchasing wholesale coffee in Uganda, the Coffee Marketing Board (CMB), encouraged the government to reconsider current shipping arrangements. The CMB and government agreed, first, that transit by road to Mombasa was costlier than rail and, second, diverting some cargo to Dar el Salaam in Tanzania might defray costs (Byrnes 1990; Kasozi 1994). Uganda thus moved away from road transport through Kenya for coffee shipments by imposing duties of Kenya trucks (Buckoke 1988).

Uganda's move clearly countered Kenyan interests. Trucking lobbies in Kenya, being well connected with the government, lobbied for retaliation over the lost business (Buckoke 1988; Kasozi 1994). In an effort to coerce Uganda into using road transport, the government severed communication lines, halted all shipments out of Uganda, and cut fuel supplies (Harden 1987b; Kasozi 1994). Uganda, once again suspended power

supplies to Kenya (Buckoke 1988). Broader security issues enveloped the trade issue with both states accusing the other of attempting to destabilize the government and harboring rebel groups (Harden 1987a). With little ability to coerce the stronger Kenya economically, Uganda resorted to militarized conflict. Initially, troops harassed Kenyan truck drivers which resulted in at least eight killings on Ugandan soil (Harden 1987b). Uganda troops then launched raids into Kenya for three days in December, 1987, resulting in numerous fatalities, as both states prepared for war (Harden 1987a; Rule 1987). The states reached a tenuous agreement in general favor of Uganda just short of war that allowed Uganda to ship coffee via rail to Mombasa (Byrnes 1990; Kasozi 1994). Despite the agreement, acrimonious relations between the rivals continued through 1989 as economic and security issues clashed repeatedly. Sporadic fighting occurred that year on the border in response to a Ugandan attack on Kenyan fishing vessels in Lake Victoria and harassment of Ugandan vehicles shipping goods through Kenya (Byrnes 1990; Kasozi 1994).

5.4.4 Easing Tensions and Economic Convergence (1990-1997)

Relations improved notably during the 1990s leading to the effective end of heightened tensions. Uganda, Kenya, and Tanzania also agreed to pursue deeper economic integration and revitalized the East African Community in 1994. Several factors led to this turn of events. First, despite Ugandan attempts to the contrary, its dependence on Kenya grew in the 1990s. Indeed, trade asymmetry between Uganda and Kenya averaged 2.3% in the decade of the 1990s. This is more than double any other period save for the early 1980s. In other words, Uganda grew increasingly dependent on Kenya without the corresponding dependence of the latter. Second, relative levels of FDI

shifted from Kenyan to Ugandan favor. FDI inflows into Uganda and Kenya totaled \$720 million and \$210 million respectively during the 1990s, a mirror image of the previous two decades. More important than absolute flows of FDI, however, is the nature of FDI composition shifted. Uganda shifted strategies away from attempts to lure export-oriented manufacturing and instead courted manufactures for the local market, export agriculture, and food processing (UIA 2013; Riddervold 2011). Kenyan FDI was comprised of export-oriented manufactures (such as textiles and apparel), services (call centers), and tourism (MIGA 2007). Hence, FDI competition diminished during this period despite increases in total inward FDI. Indeed, FDI flows may have increased precisely because competition gave way to Uganda seeking comparative advantages. Finally, acutely aware of the possibility of economic domination and vulnerability, the revitalized East African Community treaty stresses the equitable distribution of gains as one of the core objectives and principles of the community. Per the new treaty, articles 6e, 6f, and 7f clearly state the objective of the EAC as the “equitable distribution of benefits” and “co-operation for mutual benefit.”

5.4.5 Summary of Trends in the Uganda-Kenya Relationship

Uganda and Kenya have experienced a tumultuous relationship since achieving independence in the 1960s. Some of these tensions are the result of economic relations between the two. By way of summary, consider the influence of economic factors on conflict between the two states. First, as Figure 5.4 aptly displays, periods of conflict were associated with relatively symmetric trade relationships and high degrees of competition between the two. The average asymmetry score for the year prior to and including MIDs between Uganda and Kenya is 0.94%. Periods of asymmetry, however,

are associated with the absence of conflict. Indeed, the average asymmetry score excluding years prior to and including MIDs is 2.44%. Consequently, it is during periods when trade dependence is relatively high and asymmetry relatively low that conflict manifested. It is difficult to pinpoint situations where Uganda or Kenya altered their behavior because of asymmetry or symmetry specifically. To be sure, however, Uganda viewed integration with Kenya as a zero- or even negative-sum game (Hazlewood 1985, 184). Statements by Ugandan leaders highlighted through this illustration suggest they were more concerned with their absolute dependence (a factor captured by my trade interdependence variable) than their relative dependence (a factor captured by the asymmetry variable) on Kenya. The distinction is subtle but important. Uganda leaders were concerned about their vulnerabilities more than the possibility Kenya was mobilizing gains from trade into military advantages. Furthermore, domestic constituencies with seemingly complementary aims – notably coffee in Uganda and trucking in Kenya – aided in the securitization of economic issues and enabled violent responses during the 1980s. This suggests dependence and not asymmetry drove Ugandan aggression.

Second, FDI dependence appears to be an important component of conflict between Uganda and Kenya. Kenya attracted the majority of high-quality FDI for the first three decades after interdependence. This statistic belies the fact that Uganda actively and aggressively courted manufacturing and export-oriented FDI after independence as a means to counter Kenyan advantages in the EAC. Consequently, competition between the two for investment was relatively intensive if lopsided. Only when Uganda shifted strategies to attract industries for which it possessed comparative

advantages did tensions ease. FDI was also a factor for Ugandans in what they perceived as a dependent economic relationship. FDI into Kenya was indicative of their manufacturing and services prowess. In other words, FDI into Kenya in no small part generated exports to Uganda, thereby perpetuating the dependent relationship.

Third, intra-agreement trade may also have played a role in the conflict dynamic of Uganda and Kenya. Overall, as Figure 5.5 indicates, Kenya relied to a much greater extent on the economic agreement for trade than did Uganda. To the extent intra-agreement trade constrains state behavior, as my statistical models indicate, Kenya is the party more likely to be influenced. It is therefore interesting to note that Uganda initiated nearly all conflicts between the two states. This is of course correlation and not causation, and it is difficult to point to instances of non-action with attribution to particular factors, but it is suggestive of underlying economic and political processes.

Finally, this illustration provides some insight into the comparative use of economic and military coercion. It is debatable whether the economic measures employed by either Kenya or Uganda in disputes – such as cutting power or stopping payments – truly meet the definition of “economic sanctions.” After all, it is not clear what either party intended to achieve in terms of policy outcomes. Indeed, several of the measures appear purely commercial in scope. However, both states’ attempts at using economic tools failed to prevent escalating the conflict. The ineffectiveness of economic tools in some ways forced Uganda to escalate conflicts to violence or the threat thereof to achieve palatable outcomes. While this does not provide satisfactory evidence concerning the avoidance of sanctions by agreement members, it is suggestive of broader processes at work that might provide avenues for future study.

Overall, this example is presented not necessarily as evidence supporting my statistical results so much as an illustration for the plausibility of several interesting findings in my analysis. It is difficult to believe, on the surface, that FDI and trade flows may exacerbate conflict given the bulk of literature finding the just the opposite. What I hope this case has demonstrated is simply the possibility that economic relationships can both pacify and enflame tensions between states, particularly those sharing membership in economic agreements.

5.5 Conclusion: Economic Agreements and Interstate Conflict

My theoretical argument in Chapter 3 draws hypotheses concerning the influence of economic agreements on intra-agreement conflict. The first, reproduced below, addresses broad conflict dynamics between states that share membership in an economic agreement:

H₁: Economic agreements decrease the likelihood of conflict between member states.

I evaluate this hypothesis using a large-N statistical analysis of dyad years from 1970 to 2001. Ultimately, I find conditional support for this hypothesis. Shallow and deep economic agreements tend to reduce conflict – overall and particularly militarized – between states with asymmetric trade relations and high shares of trade with third-party agreement members. In contrast, relatively interdependent and FDI dependent dyads tend to experience more conflict, but only if they share membership in a shallow economic agreement. These results are seemingly counterintuitive given the broader literature on interdependence and conflict. To illustrate the plausibility of FDI and interdependence leading to conflict, however, I provide an example using relations

between Uganda and Kenya. The illustration shows that the economic relations I model did indeed influence conflict behavior in this particular case. While this example may fall short of a systematic case study, it does demonstrate the plausibility of my findings.

The remaining three hypotheses that are the topic of this chapter concern the substitution of economic sanctions for military force:

H₃: Less economically dependent agreement members are more likely to use economic sanctions against other members as a tool of coercion.

H₄: More economically dependent agreement members are more likely to use military force against other members as a tool of coercion.

H₅: Symmetrically dependent agreement members are less likely to use military force against other members as a tool of coercion than asymmetrically dependent members.

Ultimately I find little to no support for these hypotheses. I first analyzed the frequency with which shallow and deep agreement members use both economic sanctions and military force. Shallow agreement members use sanctions at much lower rates than no agreement dyads. Furthermore, an economic sanction has yet to occur between two states in a deep economic agreement. Consequently, substitution does not appear to be taking place between agreement members. Likewise, symmetrical relationships between agreement members appear to be the most prone to militarized conflict. These findings may be a consequence of the structure of economic agreements, power asymmetries, or alternative conflict resolution mechanisms. Additional theoretical and empirical work is needed to fully understand these findings.

Table 5.1: Shallow Agreements and Intra-Agreement Conflict

Shallow Agreements	Basic Logit		Imputed Logit	
	Coefficient	Standard Error	Coefficient	Standard Error
Shallow Agreement	-14.935***	2.710	-2.450	2.142
Shallow*Asymmetry	-13.14***	3.359	-9.599***	2.966
Shallow *Interdependence	25.676*	10.194	4.936	9.356
Shallow *FDI	14.902***	2.667	2.734	2.096
Intra-Agreement Trade	-8.842***	1.882	-2.190	1.963
Asymmetry	2.627**	0.986	2.466	1.315
Interdependence	-17.307**	6.251	-7.997	8.174
FDI	-5.126***	0.921	0.135	0.513
Alliance	0.243*	0.115	0.193	0.107
Contiguity	3.111***	0.130	3.018***	0.109
Capabilities	0.125***	0.038	0.205***	0.029
Democracy	-0.053***	0.010	-0.076***	0.008
GDP	0.183***	0.040	0.280***	0.035
IGOs	0.018***	0.005	0.013**	0.004
Major Power	1.366***	0.156	1.276**	0.123
WTO	-0.126	0.109	0.164	0.099
Spatial Lag (Alliances)	-9.41	15.676	7.107	5.416
Spatial Lag (Contiguity)	34.655***	8.185	20.719***	6.342
Constant	-3.715***	1.132	-11.001***	0.977
N	182,708		347,734	
λ^2	3,811.54***		-----	
Pseudo-R ²	0.3457		-----	
Log Pseudolikelihood	-2752.54		-----	

*The dependent variable is the initiation of a Militarized Interstate Dispute (MID). Shallow agreements include Partial scope agreements (PSAs) and free trade areas (FTAs) Temporal control variables (peace years³) omitted for space. *p < .05 ** p < .01 *** p < .001*

Table 5.2: Deep Agreements and Intra-Agreement Conflict

Deep Agreements	Basic Logit		Imputed Logit	
	Coefficient	Standard Error	Coefficient	Standard Error
Agreement	-3.827	3.870	0.640	2.874
Agreement*Asymmetry	-56.429**	21.632	-13.309	14.792
Agreement*Interdependence	6.802	16.515	-22.455	19.271
Agreement*FDI	4.020	3.783	0.270	2.820
Intra-Agreement Trade	-4.384*	2.061	-12.211***	5.038
Asymmetry	1.494	1.368	2.642	1.401
Interdependence	-17.557**	6.187	-9.345	8.972
FDI	0.208	2.626	0.169	0.522
Alliance	0.249*	0.115	0.166	0.131
Contiguity	3.121***	0.130	3.042***	0.122
Capabilities	0.126***	0.038	0.206***	0.032
Democracy	-0.052***	0.010	-0.072***	0.009
GDP	0.175***	0.042	0.306***	0.038
IGOs	0.019***	0.005	0.014**	0.005
Major Power	1.329***	0.159	1.152***	0.134
WTO	-0.117	0.109	0.141	0.113
Spatial Lag (Alliances)	-9.773	15.727	7.924	5.450
Spatial Lag (Contiguity)	35.200***	8.036	23.121***	6.530
Constant	-8.934***	2.739	-11.712***	1.065
N	182,708		332,376	
λ^2	3,884.23***		-----	
Pseudo-R ²	0.342		-----	
Log Pseudolikelihood	-2768.06		-----	

*The dependent variable is the initiation of a Militarized Interstate Dispute (MID). Deep agreements include customs unions (CUs), common markets (CMs), and economic unions (EUs). Temporal control variables (peace years³) omitted for space. *p < .05 ** p < .01 *** p < .001*

Table 5.3: Selection Model Results of Intra-Agreement Conflict

	Shallow Agreements		Deep Agreements	
Militarized Interstate Disputes				
	Coefficient	Standard Error	Coefficient	Standard Error
Intra-Agreement Trade	-2.126*	0.892	-4.851*	2.270
Asymmetry	-4.019**	1.546	-27.293**	10.661
Interdependence	6.908	4.270	10.651	9.269
FDI	3.144***	0.955	-0.913	2.317
Alliance	0.013	0.121	-0.444*	0.212
Contiguity	1.010***	0.173	----	----
Capabilities	-0.046	0.042	0.249	0.158
Democracy	-0.002	0.008	0.043*	0.021
GDP	0.029	0.035	-0.031	0.073
IGOs	0.002	0.005	-0.005	0.010
Major Power	0.363*	0.188	----	----
WTO	-0.209*	0.093	-0.506*	0.240
Spatial Lag (Alliances)	-12.205	17.802	-5.769	17.912
Spatial Lag (Contiguity)	13.438*	6.980	7.991	22.866
Constant	-5.210***	1.407	2.964	2.719
Formation of an Economic Agreement				
	Coefficient	Standard Error	Coefficient	Standard Error
Asymmetry	-0.011	0.181	-0.735**	0.251
Interdependence	-2.340**	0.911	3.652***	0.786
FDI	-0.064	0.158	-0.930*	0.401
Affinity	0.346***	0.027	0.840***	0.073
Alliance	0.407***	0.015	0.562***	0.025
Contiguity	-0.333***	0.024	0.325***	0.041
Democracy	0.001	0.001	0.016***	0.002
Distance	-0.001***	0.000	-0.001***	0.000
GDP	-0.014*	0.006	0.040***	0.010
Language	0.302***	0.015	0.143***	0.027
Major Power	0.122***	0.026	0.970***	0.048
Population	0.091***	0.007	-0.388***	0.016
Total Dyadic MIDs	-0.004	0.005	0.017	0.009
WTO	0.342***	0.012	1.163***	0.040
Constant	-1.877***	0.217	2.152***	0.491

Table 5.3: Continued

N	196,017	197,424
Censored	182,782	194,991
Uncensored	13,235	2,433
λ^2	266.56***	193.28***
Log-Pseudolikelihood	-30986.2	-6646.41
ρ	-0.350	-0.542**

*The dependent variable is Militarized Interstate Disputes (MIDs) initiation. The selection criterion is joint membership in either a shallow or deep economic agreement. * $p < .05$ ** $p < .01$ *** $p < .001$*

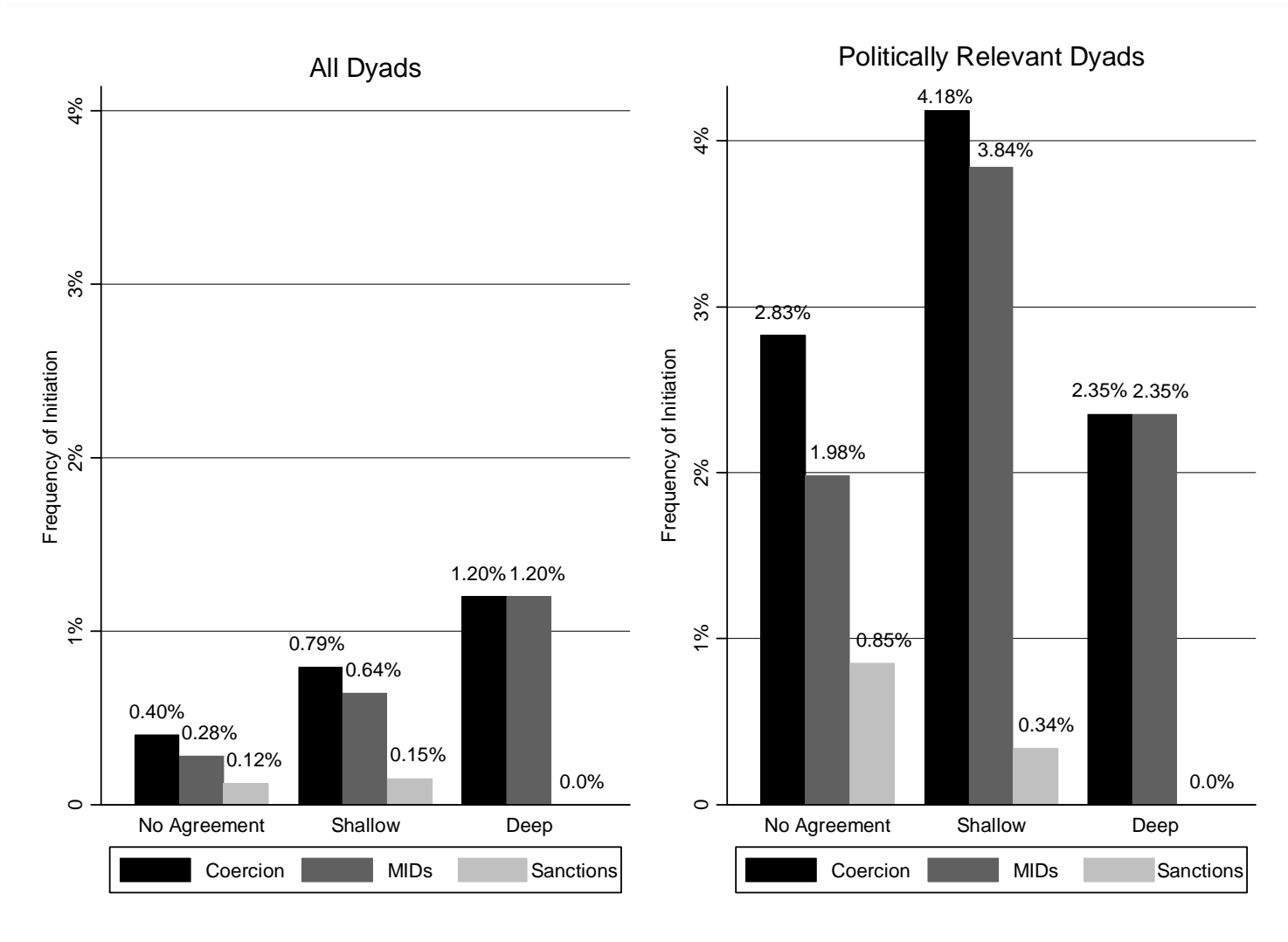


Figure 5.1: Intra-Agreement Conflict

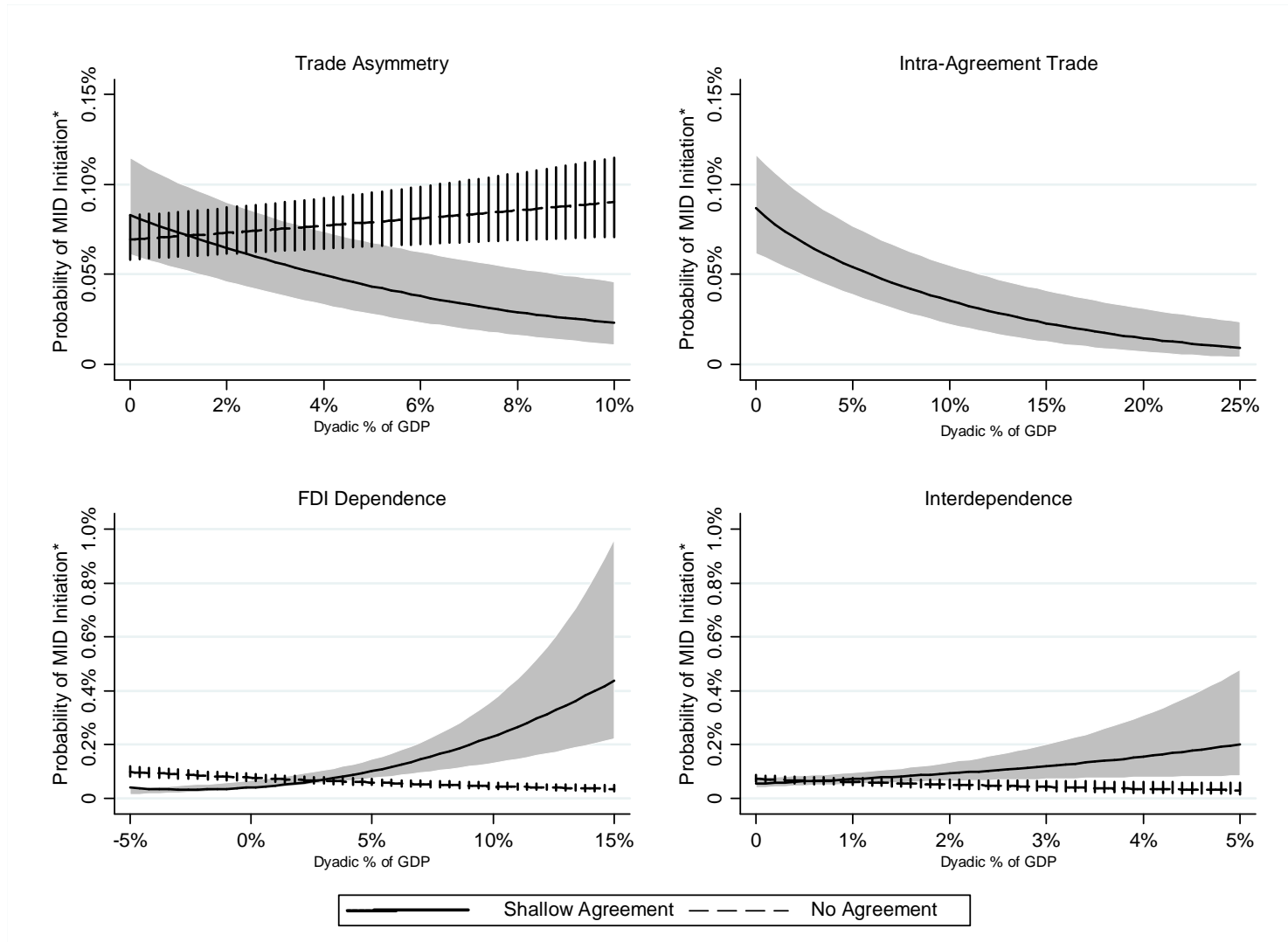


Figure 5.2: Predicted Probabilities of Shallow Agreement MIDs

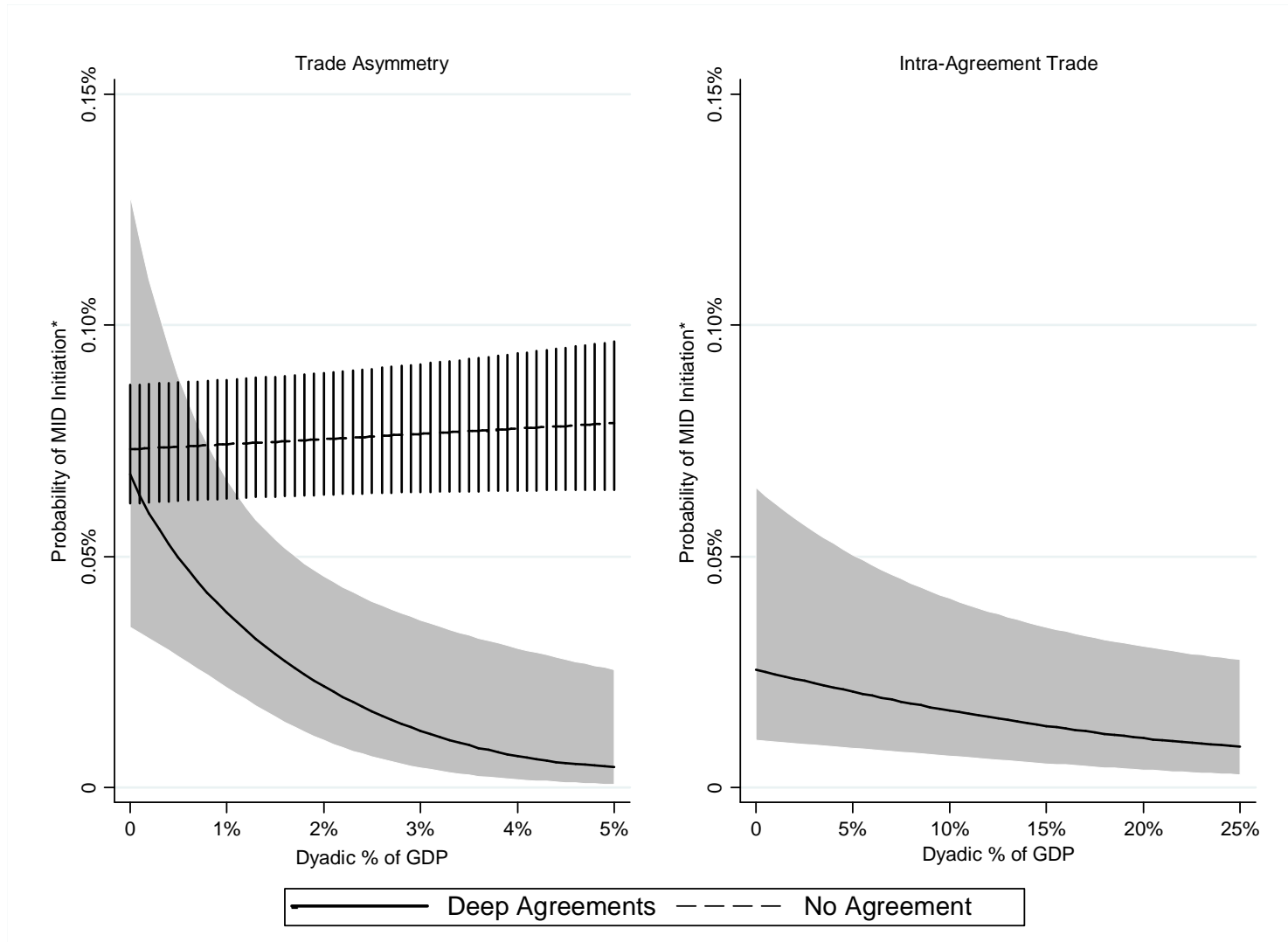


Figure 5.3: Predicted Probabilities of Deep Agreement MID

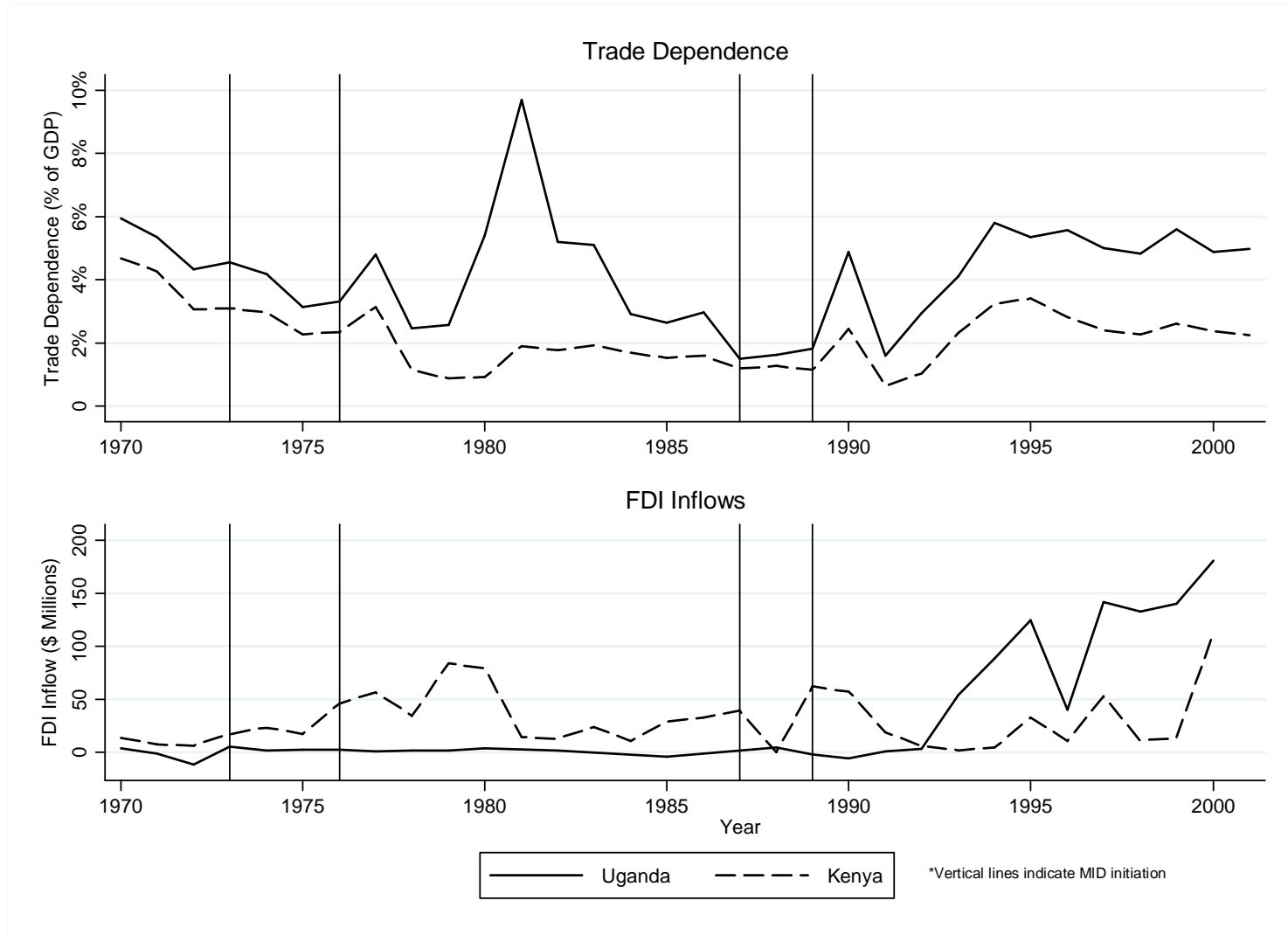


Figure 5.4: Ugandan-Kenyan Economic Relationship

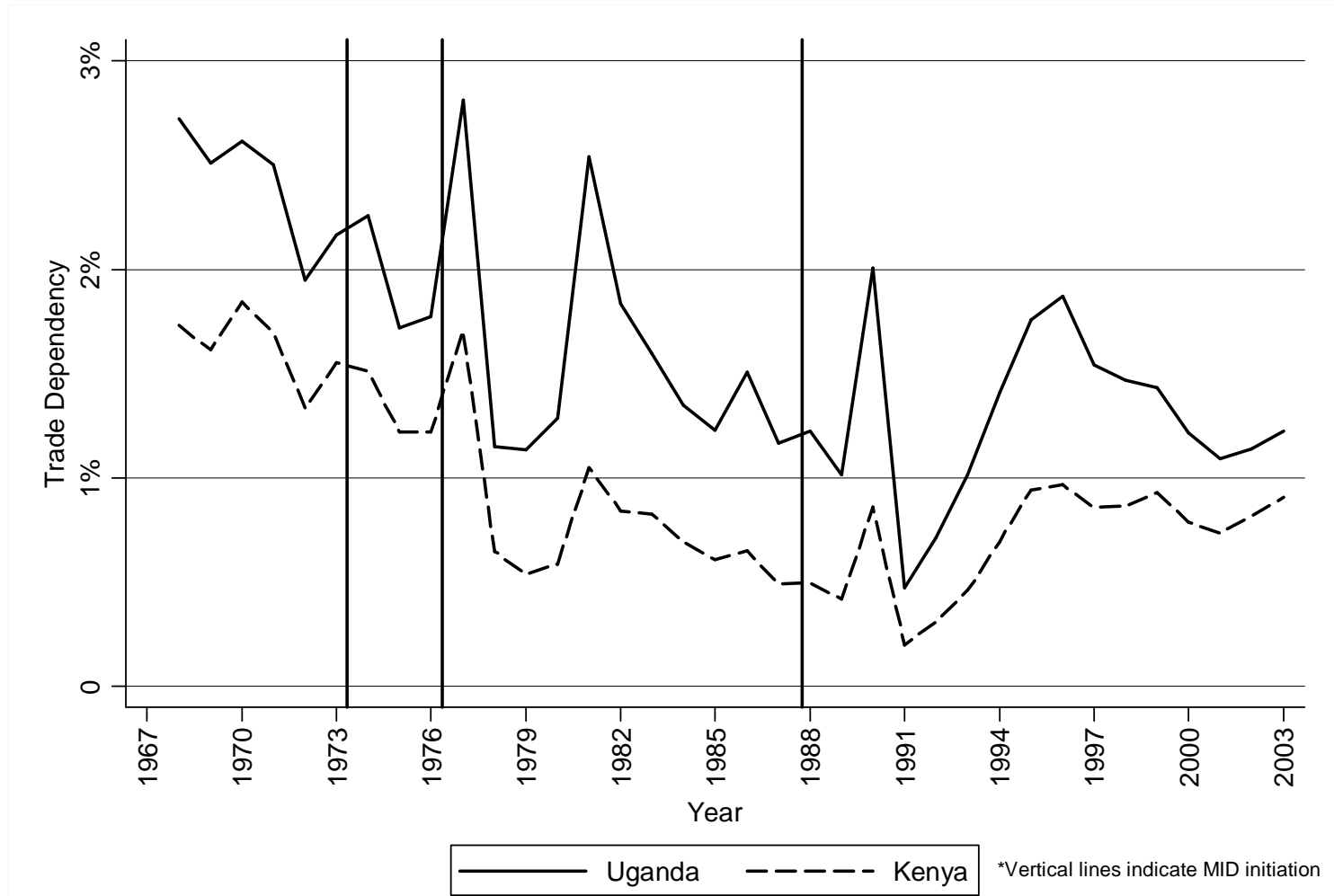


Figure 5.5: Ugandan Dependency and Conflict Initiation

CHAPTER 6

EXTRA-AGREEMENT CONFLICT

The previous chapter evaluates the influence of economic agreements on conflict when two states share membership in the same agreement. In this chapter, I consider the influence of agreements on member state relations with the external world. Economic agreements do not exist in a vacuum. Rather, they can affect trade relationships between members and non-members of agreements as profoundly as intra-agreement, member-to-member relationships. First, lowering trade barriers may reduce the salience of a member state's trade ties with the external world by simply increasing overall trade between agreement members. By relying more heavily on other agreement partners for markets and resources, agreement members are less connected to states outside the agreement. Second, economic agreements may actually generate trade diversion, a process where increased intra-agreement trade comes at the expense of trade with the external world. This not only reduces the members' salience of external trade ties, but also can generate relative gains for members and losses for non-members.

The overall impact of these forces on conflict, I argue, is to increase tensions and encourage disputes. Reducing the salience of trade ties lowers the cost of conflict between members and non-members of agreements. The process of trade diversion, furthermore, encourages states to view trade relations in terms of relative gains and losses. As diversion represents a direct relative gain to members and loss to non-members, it likely increases perceptions of dependence and strategic vulnerability.

Consequently, Hypothesis 2 holds that economic agreements increase conflict between members and non-members of agreements. In addition to the overall use of conflict, I also argue the dynamics of agreements encourage a shift in coercive strategies away from economic to military measures. Reduced interdependence renders sanctions less effective between members and non-members of agreements, thereby discouraging their use as tools to resolve disputes. Given this, Hypothesis 6 states that economic agreements increase the likelihood of militarized conflict between members and non-members.

This chapter thus builds on my previous empirical tests using non-directed dyads from 1970 to 2001 with the procedures and data outlined in the previous chapter. Section 1 of this chapter presents the results of my logit, bivariate probit, and imputed logit models and substantive interpretations. Following this, in the second section, I outline and conduct a statistical test using a strategic probit estimation that more directly tests my formal model. Ultimately, the results of these statistical tests suggest dyads where two states are in different economic agreements (opposing agreement dyads) are more sensitive to economic conditions than dyads without any agreements. In particular, extreme values of trade diversion and trade creation tend to reduce conflict. Dyads that have a relatively neutral impact with respect to diversion, however, appear the most conflict prone with respect to military force. The final section of this chapter discusses the results with respect to the theory I develop in Chapter 3.

6.1 Statistical Results

Recall that Chapter 4 describes in detail the procedure I use for statistically analyzing conflict between members and non-members of agreements. To briefly recap,

however, this section uses data covering the period 1970 to 2001 for all non-directed dyads. My dependent variables are the onset of a militarized interstate dispute (MID) or threat or imposition of an economic sanction in a given year. I employ several primary explanatory variables capturing agreement structures and associated economic relationships. The two agreement types I model are *one agreement dyads*, where only one state in the dyad is a member of an agreement, and *opposing agreement dyads*, where both states in the dyad are in different economic agreements. Dyads without any economic agreements serve as a baseline for comparison. States that share membership in an economic agreement are excluded from this analysis.

I also use a series of economic variables to more fully capture commercial relationships between members and non-members. In addition to trade interdependence and trade asymmetry variables, which were utilized in the previous chapter, I add a measure of trade diversion. To calculate trade diversion, I specified a gravity model of trade to estimate a baseline value of trade between states. Trade diversion due to economic agreements is calculated as the difference between the predicted values of the gravity model and observed trade such that higher values indicate trade diversion. All economic variables are interacted with the aforementioned one agreement and opposing agreement variables. I use several different statistical tests to evaluate my hypothesis, including basic logit (with Murphy-Topel corrections to account for uncertainty in the trade diversion estimates), imputed logit, and bivariate probit.²²

²² I also performed several robustness checks of the results presented here. These include rare-events logit accounting for the rarity of observed sanctions/MIDs, models with transformations of primary variables, alternative specifications of the primary variables, simultaneous equation models accounting for endogeneity, models with only politically relevant dyads, heckman selection models to account for selection into different economic agreements, and the use of only fatal MIDs. The results are very similar to those presented here with the exception of fatal MIDs, which are discussed in the appendix.

6.1.1 Statistical Results – Basic Logit and Bivariate Probit

Table 6.1 contains the results of the logit models estimating the influence of one agreement dyads on MID initiation between member and non-members. In this section, I focus my attention to the results of the basic logit and bivariate probit models. I will return to the imputed logit results, appropriateness of the bivariate probit, and a comparison of the three models in the next section. In Table 6.1, note first that the results of the basic logit and bivariate probit are nearly identical in sign and significance. Overall, the results indicate the presence of only one economic agreement in a dyad has little influence on the initiation of a MID. None of the terms interacting one agreement dyads with various economic variables achieve statistical significance at conventional levels. In contrast, the standalone, non-interacted interdependence variable is negative and statistically significant, indicating that dyads without any economic agreements experience less militarized conflict as trade between them increases. Hence, while dyads with one agreement may not increase conflict between members and non-members, they do appear to arrest the pacifying influence of interdependence on militarized conflict. The results of the trade diversion variables indicate a polynomial relationship in dyads without an economic agreement. As trade diversion increases, the likelihood of MID initiation also increases. At some point, however, the influence of trade diversion reverses and decreases the likelihood of MID initiation. The least conflict prone dyads with respect to diversion, consequently, experience either high trade creation or high trade diversion. Again, the lack of significance in the interacted variables indicates one agreement dyads short-circuit the influence of trade diversion.

Table 6.2 estimates the influence of one agreement dyads on economic sanctions. Again note the basic logit and bivariate probit models, with the exception of interdependence, are generally similar in sign and significance. Unlike the MID's model, however, one agreement dyads appear to influence the threat or imposition of economic sanctions. First, the agreement variable, which captures dyads where only one state is in an agreement, is negative and statistically significant. The fact that only one state is in a dyad reduces the likelihood of an economic sanction occurring, suggesting intangible aspects of this institutional arrangement influence sanctions behavior. Of my primary explanatory variables, the only interaction terms to achieve statistical significance in both models are the trade diversion variables. The simple trade diversion variable is positive while the polynomial term is negative, again indicating a curvilinear relationship. The one agreement dyads least likely to experience sanctions, therefore, are again at high levels of trade creation or high levels of trade diversion. It is important to note the interaction between one agreement dyads and interdependence is positive and significant in the bivariate probit model. Dyads with one agreement are more likely to experience an economic sanction as interdependence between states increases.

Of the non-interacted economic variables, only asymmetry is statistically significant. Furthermore, it is positive, indicating dyads without an economic agreement are more likely to experience an economic sanction. Economic agreements do therefore appear to be influencing economic sanctions. On one hand, it is only when one state is in an agreement does trade diversion affect economic sanctions. On the other, one agreement dyads disrupt the influence of trade asymmetry. Hence, one agreement dyads appear to influence interstate conflict by interrupting some pacifying mechanisms with

respect to MID initiation and directly impacting the use of economic sanctions. The combined results of the MIDs and sanctions models suggest some limited support for Hypothesis 6, as dyads with one agreement are neutral on the former and may decrease the use of the latter.

Turning to opposing agreement dyads, where both states in the dyad are in different economic agreements, Table 6.3 includes the results of MID initiation. The results of the basic logit and bivariate probit models, with the expectation of the interaction between opposing agreements and interdependence, are very similar. First, the opposing agreement variable which indicates simply that both states are in different agreements is negative and significant. With all other factors held constant, opposing agreement dyads are less likely to engage in militarized conflict. Second, the trade diversion variables achieve statistical significance. As with prior models, the simple trade diversion variable is positive while the polynomial term is negative, again indicating a curvilinear relationship. The opposing agreement dyads least likely to experience MIDs, therefore, are again at high levels of trade creation or high levels of trade diversion. Finally, the interaction between opposing agreements and interdependence is negative and significant, indicating opposing agreement dyads experience fewer MIDs as trade interdependence increases.

The results of the non-interacted economic variables provide some interesting insight into the dynamics of economic agreements as well. Unlike the one agreement model, where the interacted and non-interacted variables differed in significance, the non-interacted interdependence and trade diversion variables are of similar sign and significance as their interactions with opposing agreements. The non-interacted

interdependence variable is negative and significant such that dyads without an agreement experience less conflict as trade interdependence grows. Trade diversion is positive and significant on the simple variable and negative and significant on the polynomial term. Hence, while one agreement dyads appear to arrest the influence of economic factors between states, opposing agreement dyads appear to heighten the influence of these variables with respect to MID initiation.

Consider finally Table 6.4 showing the influence of opposing agreements on economic sanctions. Here again the results of the basic logit and bivariate probit models are nearly identical. Interestingly, none of my primary explanatory variables achieve statistical significance. Indeed, the only economic variable that influences economic sanctions in the opposing agreement model is the standalone asymmetry variable. The likelihood of experiencing an economic sanction increases in tandem with trade asymmetry. Consequently, while asymmetry increases the use of sanctions in dyads without an agreement, no such influence takes place in opposing agreement dyads. These results provide some limited support for Hypothesis 6, given opposing agreements have a neutral effect on sanctions and may increase MID initiation.

Before turning to an evaluation of the logit, bivariate probit, and imputed models, consider the control variables across the logit and bivariate probit specifications. Overall, there is general agreement between the four models estimating MID initiation. Contiguity and major power status, which capture opportunities for conflict, are positive and significant all models (basic and imputed logit, one and opposing agreements). This is unsurprising given the immediate and far-reaching political interests of contiguous states and major powers respectively. Power parity also appears to increase the

probability of conflict, as only states with valid opportunities to prevail in conflict are likely to risk it. GDP and IGO membership are also positive and significant such that militarized conflict increases when these variables also increase. GDP is relatively intuitive, as larger economies are likely better able to project power. IGO membership is somewhat of a puzzle, however. One possibility is that IGOs may simply create or highlight issues over which states have disagreement. As might be expected, democracies are less likely to engage in militarized conflict given the negative and significant coefficient. The spatial lag using contiguity as a connector is positive and significant in all but the opposing agreement basic logit model. The plurality of evidence therefore indicates that conflicts are prone to spilling over. Finally, allies may be more likely to engage in militarized conflict, but only according to the basic logit models. WTO membership and the spatial lag with alliances fail to achieve statistical significance.

With respect to economic sanctions, general agreement is once again observed, albeit with less consistency. Four variables consistently and positively predict the occurrence of economic sanctions – GDP, major power status, WTO membership, and the spatial lag of sanctions based on contiguity. The first two variables, GDP and major powers, again make intuitive sense. Large economies and major powers have both the opportunity and ability to use economic sanctions as tools of coercive policy. That is, they can both afford the cost of sanctions and can reasonably disrupt others' trade when employed. WTO members are more likely to sanction each other, which is somewhat interesting. The institutional structure of the WTO, it might be argued, discourages the use of economic instruments for political aims. It may also, however, provide a ready-

made sanction by simply suspending preferential trade status conferred by the WTO. The spatial lag of sanctions is positive and significant, indicating that states are more likely to experience sanctions if they are geographically close to other sanctions.

The remaining variables are less consistent in the sanctions models. First, IGO membership is negative and significant in all but the opposing agreement basic logit model. Combined with the positive coefficients in the MIDs model, this suggests states sharing more memberships in IGOs substitute military force for economic sanctions. This is somewhat puzzling given the literature on organizations. One possible explanation is the IGOs carried in the IGO variable are more security focused, while my agreement variables have siphoned off the influence of economic organizations. The effect of organizations on sanctions might therefore wash out. Allies are more likely to use sanctions, but only in the one agreement model. In contrast, democracies are less likely to use sanctions, but only in the opposing agreement model. The stakes of disputes for allies, even low-level ones that advantage sanctions, might be high enough such that low-level conflicts are more likely. Democracies, on the other hand, may be less likely to use sanctions for normative or institutional reasons akin to the democratic peace.

6.1.2 Imputed Data, Statistical Results, and Model Evaluation

In the previous chapter I noted differences between logit estimations using observed and imputed data with respect to intra-agreement conflict. The results of this chapter dealing with extra-agreement conflict exhibit a similar outcome. The results of the logit model using imputed data, contained in the right two columns of Tables 6.1 through 6.4, in many ways conflict with the basic logit and bivariate probit models. In total across all models (one/opposing agreements, MIDs/sanctions), there are 36 primary

variables of interest, defined as the agreement variable, its interaction terms, and non-interacted economic variables. The basic and imputed logit disagree in significance for 18 (50%) of these variables. More disconcertingly, perhaps, is that the basic and imputed logit also disagree on the sign of 19 (53%) of those variables. For comparison, there are a total of 40 control variable coefficients. The basic and imputed logit disagree in significance for only 10 (25%) of these coefficients, however. There are only 7 (18%) disagreements in terms of sign for the control variables. Consequently, the majority of variation in coefficients between the imputed and observed data is the result of economic variables.

As with the intra-agreement trade model, differences are to be taken seriously between the observed and imputed data. It is interesting that the imputed data reports generally similar results for all but the economic variables. This may reflect two general possibilities. First, imputed data is a more accurate reflection of actual trade patterns than only observed data. If this is indeed the case, the degree of difference between my basic and imputed logit models suggests missingness drastically biases results when trade and/or FDI measures are included in international relations analyses. Second, my imputed data is highly inaccurate due to my estimation procedures or inherent difficulties in estimating trade/FDI data.

The previous chapter discusses in some detail potential pitfalls with my imputed data. To those comments, all of which apply to the results here, I might add a few points. First, the analysis in this chapter may be more sensitive to imputed data given my use of the trade diversion variables. Trade diversion is effectively a constructed measure using gravity model estimates of trade. Imputed trade values are effectively constructed

measures using an expanded gravity model. When creating the imputed dataset for statistical analysis, I reconstructed the trade diversion variable using a gravity model estimate of imputed trade scores. Hence, I constructed a measure of trade diversion based on a constructed measure of trade.²³ The inherent uncertainty in imputation estimates combined with the uncertainty of trade diversion may seriously bias this measure and subsequent data. Consequently, my analysis of extra-agreement conflict may be more prone to errors in imputed data than the intra-agreement conflict models.

In considering the overall impact of imputed data in this chapter, the differences in results are again to be taken seriously. My skeptical view of imputed trade data nurtured in the previous chapter again applies here. I still believe it important to provide more rather than less analysis in the case that my suspicious of imputed trade data are warranted. Consequently, my empirical analyses will favor the basic over the imputed logit for purposes of interpretation and discussion.

Beyond the differences in analysis using observed and imputed data, the results of the basic logit and bivariate probit are very similar. It is worth noting the ρ statistic for the bivariate probit models is statistically significant. This indicates that residuals from the economic sanctions and military force models are correlated. That is, economic sanctions and military force are affected by the same factors and in some fashion jointly determined. In practical terms, however, the results for my primary variables of interest are similar enough to suggest the simpler logit specification is preferable.

6.1.3 Substantive Interpretations

²³ I also created a dataset that excluded trade diversion when creating an imputed dataset. The results were identical to those reported here. Also, excluding trade diversion from the logit estimates using imputed data does not change the results.

The substantive impact of economic agreements on conflict between members and non-members is based on the basic logit results in Tables 6.1 through 6.4. In a basic sense, the one and opposing agreement results are mirror images, as one agreement dyads tend to influence economic sanctions while opposing agreements impact MID initiation. Consider first the impact of one agreement dyads on economic sanctions. Given this is a dichotomous variable, I estimate the change in the predicted probability of a sanction by shifting the one agreement variable from 0 to 1 while holding all other variables at their mean or modal values. The baseline probability of a sanction is 0.013% for dyads without an economic agreement. For dyads with only one agreement and holding all other variables at their mean and modal value, the probability of a sanction decreases a modest 8% to a total probability of 0.012%. For comparison, this is equivalent to increasing the number of shared IGO with which states share membership by 3 from approximately 29 to 32 in total.

Figure 6.1 plots the predicted probabilities of an economic sanction based on the trade diversion variable, as it is the only statistically significant primary explanatory variable in my one agreement models. These out-of-sample probabilities were calculated by manipulating the variable of interest while holding all other variables at their mean or modal values. The solid line indicates probabilities for one agreement dyads while the dashed line plots dyads without any agreements for comparison. The band and spike plots around the lines are the 95% confidence intervals for one and no agreement dyads respectively.

When considering Figure 6.1, note first the curvilinear relationship between trade diversion and the probability of sanctions. The probability of a one agreement dyad

experiencing sanctions increases as the variable moves from trade creation (values less than 1) to approximately neutral values indicating neither creation nor diversion. Once trade diversion occurs, however, the probability of sanctions decreases, although remains higher than most trade creation values for the relevant range of observed diversion scores. Consequently, as the economic agreement in the dyad moves from promoting trade between members and non-members to actually diverting (or siphoning) it away from non-members, the probability of sanctions grows. Interestingly, however, once the trade diversion begins in earnest, the probability of sanctions declines. Equally as important, however, the one agreement is only truly independent of the no agreement curve between diversion values of approximately 0.975 and 1.25. Consequently, it is only in this range that the effect of economic agreements is statistically discernible. This range contains the peak of the diversion curve, however, indicating that one agreement dyads do appear to encourage the use of economic sanctions compared to no agreement dyads.

Moving to the substantive results of the opposing agreement model, consider first the influence of the institutions themselves. The baseline probability of a MID occurring between two states without an economic agreement is 0.068%. When each state forms an economic agreement independent of the other, holding all other variables constant, the probability decreases 56.1% to 0.043% total. This decrease, however, belies the true influence of opposing economic agreements. Specifically, states in different economic agreements exhibit different economic patterns than those without agreements. To gain a more accurate picture, instead of keeping the economic variables at their global means, I adjusted them to the average for opposing agreement dyads. That is, I set the means of interdependence, asymmetry, and trade diversion equal to the average for two states in

different economic agreements. In this way we can more accurately judge the most typically observed case of a no agreement dyad and opposing agreement dyad. In this case the probability of a MID between two states without an agreement is again 0.043%, but the corresponding probability for opposing agreement dyads is 0.067%, or an increase of 54.7%. The typical opposing agreement member is thus actually more likely to experience a MID than no agreement members, providing conditional support for Hypotheses 2 and 6.

Figure 6.2 plots the influence of trade diversion and interdependence on MID initiation between opposing agreement members. First, concerning trade diversion in the left panel, note a curvilinear relationship that is similar to the one agreement sanctions model. As trade creation declines, the probability of a MID increases to approximately 0.1% at the inflection point of 0.975. After this, the probability of a MID decreases to almost 0 at very high levels of trade diversion. Interestingly, the only portion of the opposing agreement curve that achieves statistical independence from the no agreement curve exists between approximately 0.975 and 1.01. Hence it is mild values of trade *creation* that tends to spur conflict between members and non-members of opposing agreements. This is somewhat counterintuitive given my argument about diversion and relative gains. I return to this point in the discussion section.

The right panel of Figure 6.2 shows predicted probabilities assessing the influence of trade interdependence on MID initiation. Overall, most of the interdependence range is statistically indistinguishable between the opposing and no agreement dyads. Near the intercept at 0, however, interdependence between states with opposing agreements is distinct. Small increases near zero, consequently, decrease the probability of two states

in different agreements engaging in militarized conflict. While trade interdependence does reduce conflict between states, increasing trade beyond a relatively low threshold garners opposing agreement members an almost identical result as no agreement members.

6.2 Strategic Probit Estimation and Interpretation

As I discuss in Chapter 4 outlining my research design, logit and bivariate probit models may not be optimal in evaluating the strategic nature of hypotheses derived from my formal model. My use of the formal model specifically stems from my argument that initiating a dispute – be it sanction or military force – is related to the effectiveness of using either coercive instrument. To capture the strategic elements of my formal model, I specify a strategic probit model (using STRAT software (Signorino 2001)), that allows the decision to initiate conflict in part to derive from the expectation of either military force or economic sanctions being used.

Before detailing my specification of the strategic probit, an important clarification is necessary. My formal model places agency on the Challenger to choose the instrument and potential escalation of conflict. The Defender in the model does not “choose” to acquiesce or resist, as this decision is given by its type (strong versus weak). In other words, the Defender does not possess agency and the observation of conflict is an inherent assumption of my formal model. I am limited in testing my formal model, however, by the availability software and programs to estimate complex strategic interactions. Specifically, the most appropriate empirical setup for my formal model is a two-stage game testing the decision to issue a weak or bold demand and choice of sanctions or military force as stages respectively. Unfortunately, the two-step game setup

in STRAT requires placing agency on the Defender in the first stage as a built-in requirement of the software. This setup is akin to giving the Defender the choice to acquiesce or resist the Challenger's demands. In the strictest sense this is inaccurate, as the Defender does not possess agency. However, it can also be viewed as an observable implication of the Challenger's decision to issue weak or bold demands. Resistance will only be observable if the bold demand is issued. Consequently, sanctions or military force (i.e., resistance) will only be viewed if the Challenger chooses the bold demand. Again, while not strictly correct, this approach is defensible on these grounds. Furthermore, as my regressors are dyadic in nature, the values of variables are identical for Defender and Challenger. If an alternative setup were available, the estimation procedure is unlikely to change as a result.

Strategic probit estimation, due to the relatively heavy computational burden, requires a more parsimonious and careful specification. Recall the potential outcomes of interest; 1) no conflict initiation (either a sanction or a MID) 2) threat or use of economic sanctions 3) the threat or use of military force. With this in mind, Figure 6.3 depicts the relevant portion of the game tree presented in Chapter 3 with associated regressors. Note that it begins with the Defender resisting or acquiescing to the Challenger's demand, which as noted is an implication of the weak or bold demand, as this is the first earnest and empirically observable decision in the game. The immediately observable outcome of this first-stage decision is *no conflict initiation*. To model this effect, I place the following regressors capturing whether the dispute ends without conflict or escalates to the use of a coercive strategy: One agreement and opposing agreement dyads (in separate models), asymmetry, interdependence, trade diversion, trade diversion², contiguity,

capabilities ratio, democracy, and interactions between the agreement variable and asymmetry/interdependence/trade diversion/trade diversion². Hence, in comparison to the logit and bivariate probit models, I exclude alliances, GDP, IGOs, major powers, WTO membership, spatial lags, and temporal controls.²⁴

The next decision point is the Challenger's choice between economic sanctions and military force. The decision as I have modeled it requires input from the Challenger exclusively. Consequently, I only place a constant term on the sanctions outcome for the Defender. For the Challenger, however, I take into account predictors of both sanctions and military force, or perhaps more importantly, differences in utility functions between them. To be sure, the majority of variables in my research design and subsequent results from the logit/bivariate probit estimations suggest a stronger influence on military force than economic sanctions. I do, however, place the *democracy* regressor on the Challenger's utility for economic sanctions. The logic underlying this decision is that, given the structure of the game, the choice at this node is between military force and sanctions. Democracies are less likely to use military force against each other, but do not appear as inhibited with economic sanctions. Consequently, regime type is likely as much or more associated with sanctions than military force in this setup.

To round out the strategic probit model, I place the following regressors on the *war* or *military force* outcome in Figure 6.3: One agreement and opposing agreement dyads (in separate models), asymmetry, interdependence, trade diversion, contiguity,

²⁴ I conducted several tests using multiple combinations of variables used in the basic logit and bivariate probit estimations. In addition, I placed the regressors on several different decision points as robustness checks. Overall, the results of alternative specifications are very close to those presented here. Two caveats are important to mention, however. First, some variables when included (notably the spatial lags) prevented the model from converging, thereby forcing their exclusion in the interest of obtaining actual results. Second, adding additional variables to the relatively parsimonious model presented here reduced the stability of results. While statistical significance did not change with the inclusion of most additional controls, the coefficient estimates and subsequent predicted probabilities exhibited erratic behavior.

capabilities ratio, democracy, and interactions between agreement variables and asymmetry/interdependence/trade diversion. Note that the polynomial trade diversion term is eliminated in the Challenger's utility structure, as my analysis indicates a curvilinear relationship is only present in conflict initiation and not the selection of sanctions or military force. Also, to reiterate a portion of the research design from Chapter 4, I limit my sample to politically relevant dyads where states are contiguous or contain at least one major power. This is necessary for computational efficiency and to achieve stable convergence of the strategic probit model.

6.2.1 Strategic Probit Results

The results of the strategic probit model are contained in Table 6.5. Consider first the top portion of the table that models if the Defender resists or acquiesces to the Challenger's demands. In effect this models the initiation of conflict (defined as use of either a sanction or a MID). STRAT requires this variable be coded 1 if *no conflict initiation* takes place and 0 if either a sanction or MID occurs. Consequently, positive and coefficients indicate a reduced likelihood of conflict initiation. Negative coefficients indicate a greater probability of conflict initiation. Looking at the one agreement model, only the interaction between one agreement dyads and asymmetry achieves statistical significance. Furthermore, it is positive, indicating dyads with one economic agreement experience less overall conflict as trade relations become more asymmetric. Interestingly, the non-interacted interdependence term is positive and significant such that dyads without an agreement experience less conflict as trade interdependence increases. By implication, dyads with one agreement do not share the pacifying influence

of asymmetry. Dyads with one agreement, however, do not generally appear more conflict prone given the strategic probit estimates, lending evidence against Hypothesis 2.

In the opposing agreements model, however, several key variables achieve statistical significance. The agreement variable is positive, suggesting dyads where both states are in different agreements are overall less likely to have disputes. This is mitigated, however, by the influence of trade asymmetry. The negative and significant coefficient on the interaction term indicates dyads with separate economic agreements are more likely to experience conflict as trade relations become more asymmetric. The non-interacted asymmetry term is also negative and significant, signifying that dyads without agreements also experience less conflict with trade asymmetry. The effect of opposing agreements, therefore, is to heighten the effect of asymmetry. The trade diversion variables are both significant, but the differing signs suggest a curvilinear relationship with conflict. Specifically, the negative simple term and positive polynomial term indicate the opposing agreement dyads least likely to experience conflict are those with extremes of trade creation and diversion. The standalone trade diversion terms show identical sign and significance, once again suggesting opposing agreements heighten the influence of these variables. Finally, while the interaction between opposing agreements and interdependence does not achieve statistical significance, the non-interacted term does. This suggests opposing agreements short-circuit the pacifying influence of interdependence. Overall, the results of this model suggest opposing agreement dyads can encourage conflict in certain circumstances.

Consider now the bottom half of Table 6.5 showing the results of Challenger's choice between economic sanctions and military force. For my primary explanatory

variables, positive coefficients indicate a tendency for military force while negative indicates increased likelihood of economic sanctions. In the one agreement model, only the interaction between agreements and asymmetry achieves statistical significance. Hence, dyads with one agreement are more likely to use military force instead of economic sanctions as trade asymmetry increases. The remaining economic variables, interacted and otherwise, fail to achieve statistical significance. Overall, members and non-members of one agreement dyads appear more likely to use military force if trade asymmetry grows, lending support to Hypothesis 6.

The opposing agreements model presents some interesting results. First, the agreement variable itself is positive and significant. Dyads in opposing agreements are therefore more likely to use military force (and less likely to use economic sanctions) by simply being in different agreements. This effect is reduced by the effects of asymmetry and trade diversion, however. Both interaction terms are negative and significant such that opposing agreement dyads with high levels of asymmetry and/or trade diversion prefer economic sanctions to military force. Consequently, the results of the agreement variable and interaction terms present conflicting evidence with respect to Hypothesis 6.

Looking briefly at the three control variables, the one and opposing agreement models disagree slightly.²⁵ Geographic contiguity paradoxically decreases the likelihood of conflict, but only the one agreement model. Both indicate contiguity advantages the use of military force over economic sanctions, however. Power parity as measured by capabilities ratio is more important in the initiation of conflict given the negative and significant coefficients in the Defender's utility structure. According to the opposing

²⁵ I also tested a separate analysis that used only control variables. The results of this model, while not reported, are more in line with the opposing agreement model.

agreement model, furthermore, power parity encourages military force and discourages economic sanctions. Finally, more democratic dyads are paradoxically more likely to engage in conflict according to the one agreement model. When in conflict, however, they prefer economic sanctions to military force per the opposing agreement model.

6.2.2 Interpretation

The computational limitation of the strategic probit model renders interpretation somewhat more difficult than with basic logits. This is particularly true given the number and nature of interaction terms in my model. The most useful means of interpretation is calculating the change in predicted probabilities by shifting the variable of interest from minimum to mean values (holding all others constant). While this is suboptimal given my interaction and polynomial terms, it is still useful and suggestive of how impactful economic relationships are between economic agreement members. Hence, Table 6.6 contains predicted probabilities based on the strategic probit model.

In the one agreement model, only the interaction between one agreements and asymmetry achieves statistical significance. Overall, the baseline probability of a conflict in this model is 5.27%. As asymmetry moves from its minimum to mean value, however, this probability decreases 20.4% to a 4.2% probability of conflict. Preferences regarding the strategies used in disputes also shifts with asymmetry between states in one agreement dyads. The probability of observing a MID increases 40.3% while the probability of a sanction decreases 21.4%. This suggests a substitution effect is in place for one agreement dyads between military force and economic sanctions given certain levels of asymmetry.

The opposing agreements model presents some interesting results. First, when compared to no agreement dyads, dyads with two states in different agreements are 99% less likely to experience any type of conflict. Certain economic relationships between opposing agreement members, however, limit this pacifying effect. Asymmetry in opposing agreement dyads, for example, increases the probability of conflict 13% as it moves from minimum to mean values. Likewise, trade diversion increases the likelihood of conflict by 137.5%. Hence, as trade creation (negative values of the trade diversion variable) diminishes and approaches trade diversion (positive values on the variable), conflict becomes more probable. At a point, however, trade diversion reduces conflict, specifically by 99% as the polynomial term shifts from minimum to mean values. While the available interpretation techniques limit my ability to pinpoint the inflection point of trade diversion, these results indicate once again that the most peaceful opposing agreement dyads have high levels of trade creation or trade diversion. Overall, the results of the opposing agreement model suggest that two states in different economic agreements *that also do not interact economically* have almost no chance of a conflict. As asymmetric trade and certain diversion patterns occur, however, conflict becomes more probable.

The tradeoff between economic sanctions and military force is evident in the predicted probabilities of the opposing agreement model. First, while simply having two states in different agreements reduces conflict, it drastically changes preferences for coercive strategy. Specifically, when compared to no agreement dyads, opposing agreement dyads are over 613% more likely to use military force and 48.9% less likely to use economic sanctions. This is reduced, however, by asymmetry and diversion.

Moving from the minimum to mean of asymmetry in opposing agreement dyads reduces the use of military force by 15% and increases the use of sanctions by a modest 9.8%. Likewise, moving from the minimum of trade diversion (which is effectively high levels of trade creation) to the mean (effectively neither creation nor diversion) decrease military force by 57.6% and increases sanctions by 80.6%. A substitution effect appears to be in place with respect to opposing agreements in light of these results. The exact nature of the substitution, however, is ambiguous. By themselves, opposing agreement dyads are more likely to use military force than economic sanctions. Once trade asymmetry and diversion develop, though, this preference wanes such that economic sanctions become proportionally more likely.

6.3 Discussion of Results

The combined results of the logit and strategic probit estimations provide mixed and at times confusing results for my broader theory on extra-agreement conflict. First, there is qualified support for the argument that members and non-members of agreements are more likely to engage in conflict based on the results of the strategic probit model. The strategic probit shows that dyads with one agreement are more likely to engage in conflict (initiation of either a MID or sanction), but only inasmuch as trade asymmetry manifests in the dyad. Likewise, the model indicates that dyads with opposing agreements are more likely to experience conflict if asymmetry manifests and trade diversion is at moderate levels. It is also worth noting that while trade interdependence reduces conflict in dyads without an agreement, no such influence takes place between members and non-members of agreements given the lack of statistical significance on the interaction term with agreement structure. Consequently, it does appear that conflict is

more likely between members and non-members of agreements provided certain economic conditions are met. This provides qualified support for Hypothesis 2.

Second, qualified and limited support is also found for the argument that the preferred strategy in disputes between members and non-members is military force. The logit specification indicates that states with membership in different economic agreements are more likely to experience a MID at relatively modest levels of trade creation. This is mitigated, however, to the extent trade interdependence is high. Given the characteristics of the typical opposing agreement, however, MIDs are generally more likely when compared to no agreement dyads. The picture is muddied somewhat by the results of the strategic probit. These results show opposing agreement dyads are generally more likely to experience militarized disputes, but trade diversion and interdependence discourage militarization in favor of economic responses.

As for one agreement dyads, the results of the logit and strategic probit provide somewhat contradictory results. Dyads with only one state in an agreement are neither more nor less likely to experience MID according to the logit results. Indeed, if anything, they are more apt to use economic sanctions provided trade diversion is modest. The strategic probit, however, indicates one agreement dyads substitute militarized for economic coercion as asymmetry between the states increases. I believe the more accurate assessment of conflict dynamics is given by the strategic probit, as it more directly models the connection between conflict initiation and strategies. Consequently, I find limited support for Hypothesis 6.

The combined results and less than overwhelming support for my argument raise a number of issues to address. First, the strategic probit and logit models provide slightly

different perspectives on the conflict process. Overall, opposing agreement dyads influence militarized conflict, but not economic sanctions, according to the logit specification. The strategic probit suggests opposing agreements affect conflict initiation and both coercive strategies. As for one agreement dyads, the logit points to little influence on militarized conflict and negative influences on sanctions. The strategic probit shows one agreement dyads are less likely to engage in conflict and have discernible influences on sanctions and military force. Differences between the two models are not necessarily inconsistent, as the two methods model the conflict process differently. My use of logit and bivariate probit to test the use of military force and economic sanctions essentially permits the two instruments to be compliments. That is, rather than substitutes, the basic logit models permit both economic sanctions and military force to be used more or less frequently. This is possibly the case given the inability of the logits to rule out either coercive instrument in favor of the other. Hence, the logits model a decision-making process that permits complementary process in coercive strategies.

Strategic probits, in contrast, model more closely a substitution effect by pitting sanctions against military force directly. The two-stage approach allows the sanctions/military force decision to follow the initiation of conflict broadly. In other words, the decision-making process modeled by the strategic probit captures an either-or, true substitution effect. It is as if decision-makers first decide to initiate conflict and subsequently determine, given the decision to initiate, the means by which they will coerce. The validity of the strategic choice model appears to hinge on the appropriateness of modeling the conflict process as a two-stage, conflict-then-coercive-

tactic game. Such an assumption may impose too strict logic on the conflict process, however, leading to the different results. What is likely more valid is that economic sanctions and military force are both complements and substitutes in different circumstances and times. The assumption of complements or substitution is a critical in my model, and will be addressed in future research.

Second, while some evidence suggests conflict may increase between members and non-members of agreements, several of my causal mechanisms fail to perform as expected. In particular, I anticipate trade diversion, which I argue is a more or less direct assessment of relative gains and losses, to increase both overall and militarized conflict. My results indicate that if diversion has any relationships with conflict, it is to encourage it with states experiencing the least amount of diversion or even trade creation. The economic agreement dyads most prone to conflict are those that may actually slightly benefit from the creation of economic agreements of which they are not a part. In other words, mild gains experienced from neighbors in trade agreements may encourage conflict.

This puzzling finding can possibly be explained by a number of factors. Dyads where high levels of trade creation occur may not engage in conflict, particularly militarized, because it risks the substantial gains they receive from the agreement. For example, it is possible that that Russia benefits from the European Union without being a member. They likely benefit from unified supranational trade laws that replaced myriad national systems, eased transportation regulations, and possibly efficiency gains from exporting to a proportionally larger trade area. Likewise, the EU might benefit from the Commonwealth of Independent States in a similar manner. To the extent militarized

conflict introduces uncertainty or otherwise disrupts trade, the gains from these agreements may be lost. Consequently, it makes intuitive sense that trade creation reduces interstate conflict between members and non-members.

The connection between high levels of trade diversion and a reduced likelihood of conflict is more complicated and tenuous, however. One possibility is simply that should enough relative gains accrue to a state in the dyad, as would be the case with high degrees of diversion, the balance of power may shift such that the state experiencing relative losses acquiesces to demands without militarized coercion. Inasmuch as the gains from trade can be translated into coercive economic or military power (Baldwin 1985; Hirschman 1981; McKeown 1984; Root 1984; Gowa and Mansfield 1993), states that substantially benefit from their discriminatory membership in an economic agreement possess distinct advantages. While I argue that such strategic imbalances result in conflict, they may also simply result in such imbalances that conflict is not a viable strategy for the weaker state. This explanation is particularly valid for one agreement dyads where one state clearly gains and the other clearly loses. It might also explain the curvilinear relationship between diversion and sanctions between states in one agreement dyads. As for opposing agreement with states in different economic agreements, while the previous argument might still hold, losses from trade diversion are theoretically replace by trade in each states' respective agreement. Conflict may simply decline here because the states drift away economically. That is, with less commerce taking place, there are fewer issues about which to fight. The issues that do require coercion are of sufficiently low salience given the marginalized economic relationship to warrant low-level coercive responses. This might explain the simultaneous findings of the logit and

strategic probit model, where the former indicates reduce likelihood of MID's with diversion and the latter a higher likelihood of sanctions.

A second possible explanation extends one made in the previous chapter. States with relatively mild levels of trade creation may be the most competitive commercial relationships. This is particularly true to states that form different economic agreements. One of the primary reasons states form economic agreements is the desire to lock-in access to markets and resources (Whalley 1996). Insofar as agreements harm the profits of non-member exporters, additional agreement formation is spurred by excluded states that desire corresponding preferential access with other states (Baldwin 1993). The end result can be competing trade blocs and high degrees of inter-regional competition. Rather than cordoning off exclusive economic zones, however, the agreements may provide certain exporters with sanctuary profits collected from the trade bloc. Possessing a relatively safe home market might permit these exporters to more aggressively pursue business overseas. Intense competition with other trade bloc exporters may result. The American car manufacturing industry, for example, likely gains sanctuary profits from NAFTA given their comparative advantage in North America. This in turn permits them to compete fiercely with Japanese and European manufacturers and vice versa. In these cases, we might expect mild levels of trade creation given efficiency gains from agreements and the promotion of intra-industry trade between blocs. Competition as reflected by trade creation may spur concerns about relative gains and losses if resources and markets are threatened. These forces may translate to conflict if strategic vulnerabilities are fostered.

Alternatively, the most convincing explanation may be that dyads with mild levels of trade creation are simply the dyads with the least realized or potential economic interdependence. States with high levels of trade creation or diversion are first and foremost states geography, nature, and basic political systems suggest should be highly interdependent. States with trade creation may fight less due to the gains from trade. High diversion dyads, however, have distanced themselves economically. The potential for commerce and interdependence, however, might discourage conflict if businesses believe relations will thaw. Likewise, trade diversion may simply reflect high degrees of unrecorded or illicit trade. That is, while the gravity model predicts relatively little commerce between states in the dyad, trade actually occurs outside official channels or through third-party states. Illicit trade, in turn, may discourage conflict in the traditional opportunity cost and lobbying mechanisms discussed in Chapter 3. States with mild levels of either creation or diversion are, first, dyads for which my expanded gravity model predicts trade well. They may also be states that we might expect will trade relatively little given geography, political systems, and natural endowments of resources. Economic agreements for either state, consequently, might spur some trade simply by increasing overall economic activity and openness. Alternatively, low levels of trade creation between unlikely trade partners might simply be measurement error by my gravity model. Either way, if mild trade creation reflects economic odd couples with little interdependence, my formal models predicts a higher likelihood of militarized conflict.

One final explanation of my trade diversion finding is measurement error. The gravity model I specify, while carefully constructed, is a blunt instrument given the

nuances of international trade. Myriad factors influence trade flows, including several that are likely unobservable. My estimates may be off as a result. Furthermore, I have attributed all trade creation/diversion between agreement members and non-members to the agreement, which may not be accurate. Measurement error in this capacity is particularly problematic if it is non-random. For example, if I estimate high trade diversion for dyads with certain characteristics (e.g., allies or autocracies, for example), the relationship between diversion and conflict will likely be biased. From my analysis and diagnostics presented in Chapter 4, my gravity model poorly predicts zero-trade flows. This might overstate diversion, and to the extent dyads with zero-trade flows share common characteristics, bias my analysis. Unfortunately, I have incorporated many of the factors predicting non-zero trade flows in my gravity model, suggesting unobservable factors may be driving zero-trade estimates.

Third, the differences between one and opposing agreements on conflict is interesting. My argument about marginalized trade ties and relative gains concerns between members and non-members intuitively suggests one agreement dyads are more conflict prone. While opposing agreement members derive benefits from their corresponding trade blocs, the excluded state in the one agreement model is isolated without an agreement. Yet it appears opposing agreements are more conflict prone, and particularly so with militarized force. This may reflect the aforementioned heightened competition between opposing agreement members. In contrast, it may also be that opposing agreement members drift away economically such that interdependence is particularly low. Conflict and militarization might be more common as a result. One

agreement dyads, in contrast, may still possess economic relationships risked by conflict. Relative gains concerns may be muted or overcome by potential gains as a result.

Fourth, according to the strategic probit models, certain economic relationships make economic sanctions more likely for opposing agreement members. This is in direct contrast to my theory of substitution. This may reflect a few processes at work. Reduced interdependence may lower the cost of sanctions such that they are more frequently employed in low-level conflicts. The low cost of sanctions between members and non-members may increase the range of political issues decision-makers deem worthy of coercive action. Alternatively stated, policy makers may be more willing to use sanctions to coerce – materially or symbolically – given it is unlikely to hurt the sender.

Alternatively, in a similar vein, sanctions and military force may not be substitutable policies. Sanctions may be employed for one set of issues while military force is reserved for more serious disagreements. This harkens back to the need for more work on the assumption of substitutability regarding sanctions and military force.

Fifth, my analysis indicates some important caveats for the broader liberal peace. In particular, the structure of trade relationships – and not simply the amount of trade – appears to influence conflict behavior. Overall, economic agreements do appear to influence interstate conflict. Furthermore, trade diversion (and to some extent trade asymmetry) stemming from membership in economic agreements influences conflict between members and non-members according to my analysis. In turn, interdependence in the traditional sense is limited in its ability to constrain states from conflict when economic agreements are introduced per most of my models. That is not to say, of course, that interdependence is not relevant to conflict between members and non-

members. Rather, interdependence is only one aspect of economic relationships that influence conflict behavior. In other words, it is not sufficient to only identify the extent of commercial exchange between states to accurately understand their propensity to coerce. It is important also to understand how states value their commercial relationship and in what context it exists.

6.4 Conclusion: Economic Agreements and External Conflict

My theoretical argument in Chapter 3 draws hypotheses concerning the influence of economic agreements on extra-agreement conflict. The first, reproduced below, addresses broad conflict dynamics between members and non-members of an economic agreement:

H₂: Economic agreements increase the likelihood of conflict between members and non-members of the agreement.

I evaluate this hypothesis using a large-N statistical analysis of dyad years from 1970 to 2001 using basic logit and strategic probit models. Ultimately, I find conditional support for this hypothesis. Certain economic conditions spur conflict between members and non-members of agreements. Dyads with one agreement are more likely to experience conflict if trade asymmetry is present (per the strategic probit). Likewise, dyads with opposing agreements are more likely to experience conflict if asymmetry manifests and trade diversion is at moderate levels. Consequently, it does appear that conflict is more likely between members and non-members provided certain economic conditions exist.

The second hypothesis in this chapter addresses the substitution of economic sanctions for military force:

H₆: Economic agreements increase the likelihood of militarized conflict between members and non-members.

Again, qualified and limited support is found for this argument. While opposing agreement members are overall more likely to use MIDs per the logit and strategic probit models, it is only at modest levels of trade diversion. Furthermore, trade asymmetry may favor sanctions over military force per the strategic probit model. Dyads with only one state in an agreement are neither more nor less likely to experience MID according to the logit results and are slightly more likely to use economic sanctions provided trade diversion is modest. The strategic probit models indicate a direct substitution effect, however, as trade asymmetry increases. Hence, some preliminary support is found for this hypothesis. The validity of these results, however, is contingent on the appropriateness of modeling the conflict process as a two-stage, substitution between sanctions and military force. More work is required to fully understand this dynamic.

Table 6.1: One Agreement Dyads and Extra-Agreement Conflict, Militarized Interstate Disputes

	Basic Logit		Bivariate Probit		Imputed Logit	
	Coefficient	Standard Error	Coefficient	Standard Error	Coefficient	Standard Error
Militarized Interstate Disputes						
Agreement	8.970	17.486	-0.137	8.123	-11.026	6.697
Agreement*Asymmetry	-4.905	4.265	-0.319	1.646	10.315***	3.221
Agreement*Interdependence	6.919	13.608	6.538	5.387	-3.410	16.970
Agreement*Diversion	-5.410	36.990	1.214	16.721	8.069	15.109
Agreement*Diversion ²	-3.309	20.132	-1.066	8.750	3.175	9.515
Asymmetry	3.071	1.965	1.040	0.800	-5.651*	2.437
Interdependence	-23.625***	6.694	-12.638***	2.731	-13.872*	5.533
Trade Diversion	33.992**	14.094	9.837*	4.533	-1.353	10.856
Trade Diversion ²	-20.014**	7.449	-6.603**	2.426	-6.239	7.954
Alliance	0.363**	0.138	0.102	0.053	0.277*	0.123
Contiguity	3.252***	0.158	1.408***	0.053	3.344***	0.129
Capabilities	0.163***	0.043	0.063***	0.017	0.254***	0.034
Democracy	-0.041***	0.010	-0.018***	0.004	-0.059***	0.009
GDP	0.216***	0.044	0.112***	0.017	0.320***	0.035
IGOs	0.015**	0.005	0.010***	0.002	0.007	0.005
Major Power	1.326***	0.175	0.482***	0.067	0.989***	0.156
WTO	0.055	0.125	-0.056	0.047	0.505***	0.112
Spatial Lag (Alliances)	-0.369	9.892	3.245	3.531	10.245*	5.173
Spatial Lag (Contiguity)	27.788**	9.610	14.163***	3.154	24.165***	6.197
Constant	-23.859***	6.867	-8.417***	2.243	-4.516	4.229

Table 6.1: Continued

N	191,887	191,887	368,562
λ^2	3,225.82***	2,876.57***	-----
Pseudo-R ²	0.3535	-----	-----
Log-Pseudolikelihood	-2,273.15	-3,183.382	-----
ρ	-----	0.460***	-----

*The dependent variables are Militarized Interstate Disputes (MIDs). The "agreement" variable indicates dyads where only one state is in an economic agreement. Temporal control variables (peace years³) omitted for space. Model statistics for bivariate probit repeated on Table 6.2, as they are produced by the same regression and divided only for viewing convenience.. *p < .05 ** p < .01 *** p < .001*

Table 6.2: One Agreement Dyads and Extra-Agreement Conflict, Economic Sanctions

Economic Sanctions	Basic Logit		Bivariate Probit		Imputed Logit	
	Coefficient	Standard Error	Coefficient	Standard Error	Coefficient	Standard Error
Agreement	-258.470*	121.717	-97.596*	46.901	36.186	54.609
Agreement*Asymmetry	-0.226	5.008	-0.679	1.906	11.884*	5.874
Agreement*Interdependence	23.150	18.328	14.730*	6.564	-2.951	18.926
Agreement*Diversion	521.820*	245.567	196.357*	93.743	-114.302	124.399
Agreement*Diversion ²	-263.403***	124.126	-98.785*	46.918	78.625	70.555
Asymmetry	4.714***	1.602	1.869**	0.647	-7.292	5.798
Interdependence	-14.401	10.271	-3.650	3.720	-14.250	12.739
Trade Diversion	28.078	33.113	26.106	18.028	130.140	121.199
Trade Diversion ²	-15.442	18.047	-13.921	9.523	-85.712	69.085
Alliance	0.605*	0.284	0.274**	0.098	0.393	0.233
Contiguity	0.359	0.491	0.112	0.163	1.130***	0.353
Capabilities	-0.096	0.078	-0.032	0.025	0.013	0.053
Democracy	-0.020	0.017	-0.005	0.005	-0.011	0.016
GDP	0.921***	0.112	0.292***	0.037	0.883***	0.099
IGOs	-0.030**	0.010	-0.011***	0.003	-0.016	0.009
Major Power	1.392***	0.325	0.432***	0.099	1.221***	0.334
WTO	0.630**	0.226	0.238***	0.072	0.938***	0.220
Spatial Lag (Alliances)	6.296	11.705	0.499	4.384	-5.490	13.403
Spatial Lag (Contiguity)	32.237*	15.813	12.841**	4.693	38.103***	10.288
Constant	-41.308**	15.096	-22.156**	8.520	-72.682	52.949

Table 6.2: Continued

N	191,887	191,887	385,729
λ^2	824.55***	2,876.57***	-----
Pseudo-R ²	0.223	-----	-----
Log Pseudolikelihood	-928.327	-3,183.382	-----
ρ	-----	0.460***	-----

*The dependent variable is the threat or imposition of an economic sanction. The "agreement" variable indicates dyads where only one state is in an economic agreement. Temporal control variables (peace years³) omitted for space. Model statistics for bivariate probit repeated on Table 6.1, as they are produced by the same regression and divided only for viewing convenience.. *p < .05 ** p < .01 *** p < .001*

Table 6.3: Opposing Agreement Dyads and Extra-Agreement Conflict, Militarized Interstate Disputes

Militarized Interstate Disputes	Basic Logit		Bivariate Probit		Imputed Logit	
	Coefficient	Standard Error	Coefficient	Standard Error	Coefficient	Standard Error
Agreement	-517.941**	180.875	-188.135***	57.221	-5.684	7.138
Agreement*Asymmetry	1.266	4.889	0.809	2.023	5.495	3.326
Agreement*Interdependence	-38.919*	18.300	-13.722	7.457	3.132	11.659
Agreement* Diversion	1064.753**	363.892	386.185***	114.681	3.436	15.740
Agreement* Diversion ²	-546.033**	183.186	-197.771***	57.530	2.705	9.872
Asymmetry	2.905	2.122	0.673	0.836	-8.068**	2.641
Interdependence	-27.923***	7.021	-12.647***	2.755	-15.640**	5.880
Trade Diversion	37.738*	16.997	9.546*	4.899	-6.099	10.092
Trade Diversion ²	-22.755*	8.922	-6.668**	2.584	-5.104	7.733
Alliance	0.396**	0.127	0.085	0.051	0.090	0.112
Contiguity	3.221***	0.146	1.409***	0.052	3.354***	0.114
Capabilities	0.242***	0.049	0.063***	0.019	0.261***	0.034
Democracy	-0.056***	0.010	-0.024***	0.004	-0.067***	0.008
GDP	0.261***	0.043	0.119***	0.017	0.252***	0.035
IGOs	0.017**	0.005	0.011***	0.002	0.019***	0.005
Major Power	1.860***	0.165	0.613***	0.062	1.727***	0.142
WTO	0.047	0.122	-0.090	0.047	0.138	0.104
Spatial Lag (Alliances)	-6.480	11.985	-1.643	4.904	9.071	7.162
Spatial Lag (Contiguity)	18.163	10.246	13.001***	3.534	20.524***	6.485
Constant	-25.775***	8.311	-8.187***	2.450	0.570	4.031

Table 6.3: Continued

N	194,857	194,857	360,783
λ^2	3,282.32***	3,021.92***	-----
Pseudo-R ²	0.364	-----	-----
Log Pseudolikelihood	-2,396.75	0.554***	-----

*The dependent variable is the initiation of a Militarized Interstate Disputes (MIDs). The "agreement" variable indicates dyads where both states are in different economic agreements. Temporal control variables (peace years³) omitted for space. Model statistics for bivariate probit repeated on Table 6.4, as they are produced by the same regression and divided only for viewing convenience.. *p < .05 ** p < .01 *** p < .001*

Table 6.4: Opposing Agreement Dyads and Extra-Agreement Conflict, Economic Sanctions

Economic Sanctions	Basic Logit		Bivariate Probit		Imputed Logit	
	Coefficient	Standard Error	Coefficient	Standard Error	Coefficient	Standard Error
Agreement	-10.490	22.255	-2.657	11.664	13.832	59.699
Agreement*Asymmetry	3.007	2.563	1.974	1.196	10.836	5.974
Agreement*Interdependence	-35.301	28.876	-11.161	10.428	-15.937	30.450
Agreement* Diversion	8.615	46.663	-1.009	23.804	-67.447	133.032
Agreement* Diversion2	2.319	24.716	3.813	12.248	54.214	74.096
Asymmetry	6.040***	1.527	2.388***	0.663	-5.148	5.787
Interdependence	-11.503	9.947	-3.070	3.743	-9.369	11.806
Trade Diversion	32.479	33.545	29.058	18.433	136.317	120.354
Trade Diversion2	-17.126	18.419	-15.195	9.731	-86.838	68.167
Alliance	0.113	0.291	0.076	0.104	-0.313	0.254
Contiguity	0.082	0.537	0.002	0.168	0.849*	0.364
Capabilities	-0.058	0.062	-0.022	0.021	0.085	0.052
Democracy	-0.045**	0.015	-0.013**	0.005	-0.055***	0.013
GDP	0.778***	0.098	0.254***	0.035	0.758***	0.086
IGOs	-0.016	0.009	-0.006*	0.003	-0.003	0.009
Major Power	1.733***	0.282	0.511***	0.089	1.834***	0.284
WTO	0.488*	0.198	0.216***	0.064	0.365	0.177
Spatial Lag (Alliances)	5.338	12.007	1.156	4.557	-4.829	12.373
Spatial Lag (Contiguity)	56.817***	8.051	20.347***	3.170	45.042***	7.179
Constant	-40.741**	15.146	-22.949**	8.730	-74.404	52.707

Chapter 6.4: Continued

N	194,857	194,857	377,459
Chi2	864.08***	3,021.92***	-----
Pseudo-R2	0.244	-----	-----
Log Pseudolikelihood	-1,028.976	-3,396.443	-----
Rho	-----	0.554***	-----

*The dependent variable is the threat or imposition of an economic sanction. The "agreement" variable indicates dyads where both states are in different economic agreements. Temporal control variables (peace years³) omitted for space. Model statistics for bivariate probit repeated on Table 6.3, as they are produced by the same regression and divided only for viewing convenience.. *p < .05 ** p < .01 *** p < .001*

Table 6.5: Strategic Probit Estimation of Extra-Agreement Conflict

	One Agreement		Opposing Agreements	
Defending State (Initiation of Either a Sanction or a MID)				
	Coefficient	Standard Error	Coefficient	Standard Error
Agreement	0.334	5.369	52.916**	20.03
Agreement*Asymmetry	12.470***	3.579	-6.234***	1.709
Agreement*Interdependence	-16.576	10.29	-1.724	9.194
Agreement*Trade Diversion	-2.150	10.45	-97.23*	39.07
Agreement*Trade Diversion ²	1.375	5.906	44.195*	19.14
Asymmetry	-1.619	1.337	-2.086**	0.725
Interdependence	9.736*	4.727	10.412***	3.15
Trade Diversion	0.492	1.254	-2.072**	0.708
Trade Diversion ²	-0.842	2.316	4.130***	0.735
Contiguity	2.452*	1.132	0.005	0.121
Capabilities	-0.092*	0.042	-0.079**	0.028
Democracy	-0.016*	0.007	0.001	0.006
Challenging State (Choice of Sanction or MID)				
	Coefficient	Standard Error	Coefficient	Standard Error
Agreement	-3.623	4.505	33.199***	9.158
Agreement*Asymmetry	10.110*	4.012	-17.446**	6.070
Agreement*Interdependence	6.167	10.63	15.102	42.25
Agreement*Trade Diversion	3.260	4.406	-32.633***	9.039
Asymmetry	1.346	1.050	0.956	3.362
Interdependence	-7.262	5.313	-9.262	11.56
Trade Diversion	0.452	0.260	1.425***	0.340
Contiguity	2.868***	0.287	3.062***	0.359
Capabilities	0.083	0.046	0.243**	0.078
Democracy	0.017	0.010	0.065***	0.018
Constants				
β_C Economic Sanctions	-5.952**	2.322	-0.947**	0.323
N	18,589		17,188	
Mean Log-likelihood	-0.123		-0.142	

*The potential outcomes in the strategic probit are 1) no conflict initiation 2) threat or use of economic sanctions 3) threat or use of military force. Estimates produced using STRAT software. The "agreement" variable indicates dyads with either one state possessing membership in an economic agreement (left columns) or where both states are members of different agreements (right two columns). *p < .05 ** p < .01 *** p < .001*

Table 6.6: Predicted Probabilities for Strategic Probit Estimation

% Change in Probability	One Agreement			Opposing Agreement		
	Conflict Initiation	Economic Sanctions	Military Force	Conflict Initiation	Economic Sanctions	Military Force
Agreement	----	----	----	-99.0%	-48.9%	613.3%
Agreement*Asymmetry	-20.4%	-21.4%	40.3%	13.3%	9.8%	-15.0%
Agreement*Interdependence	----	----	----	----	----	----
Agreement*Trade Diversion	----	----	----	137.5%	80.6%	-57.6%
Agreement*Trade Diversion ²	----	----	----	-99.0%	----	----
Asymmetry	----	----	----	14.9%	----	----
Interdependence	-10.2%	----	----	-12.2%	----	----
Trade Diversion	----	----	----	-95.0%	-9.5%	172.3%
Trade Diversion2	----	----	----	142.9%	----	----
Contiguity	-99.0%	-1,260.0%	3,800.0%	----	-89.0%	232.5%
Capabilities	189.6%	----	----	164.8%	-11.8%	456.5%
Democracy	28.5%	----	----	----	55.8%	-37.9%
<i>Baseline Probability</i>	<i>5.27%</i>	<i>1.36%</i>	<i>3.90%</i>	<i>3.23%</i>	<i>0.67%</i>	<i>2.56%</i>

Changes in the probability of conflict are calculated by shifting the value of the variable from minimum to mean value (or 0 to 1 for dichotomous variables) while holding all others at their mean value. The "agreement" variable indicates dyads with either one state possessing membership in an economic agreement (left columns) or where both states are members of different agreements (right columns).

p < .05 ** p < .01 * p < .001*

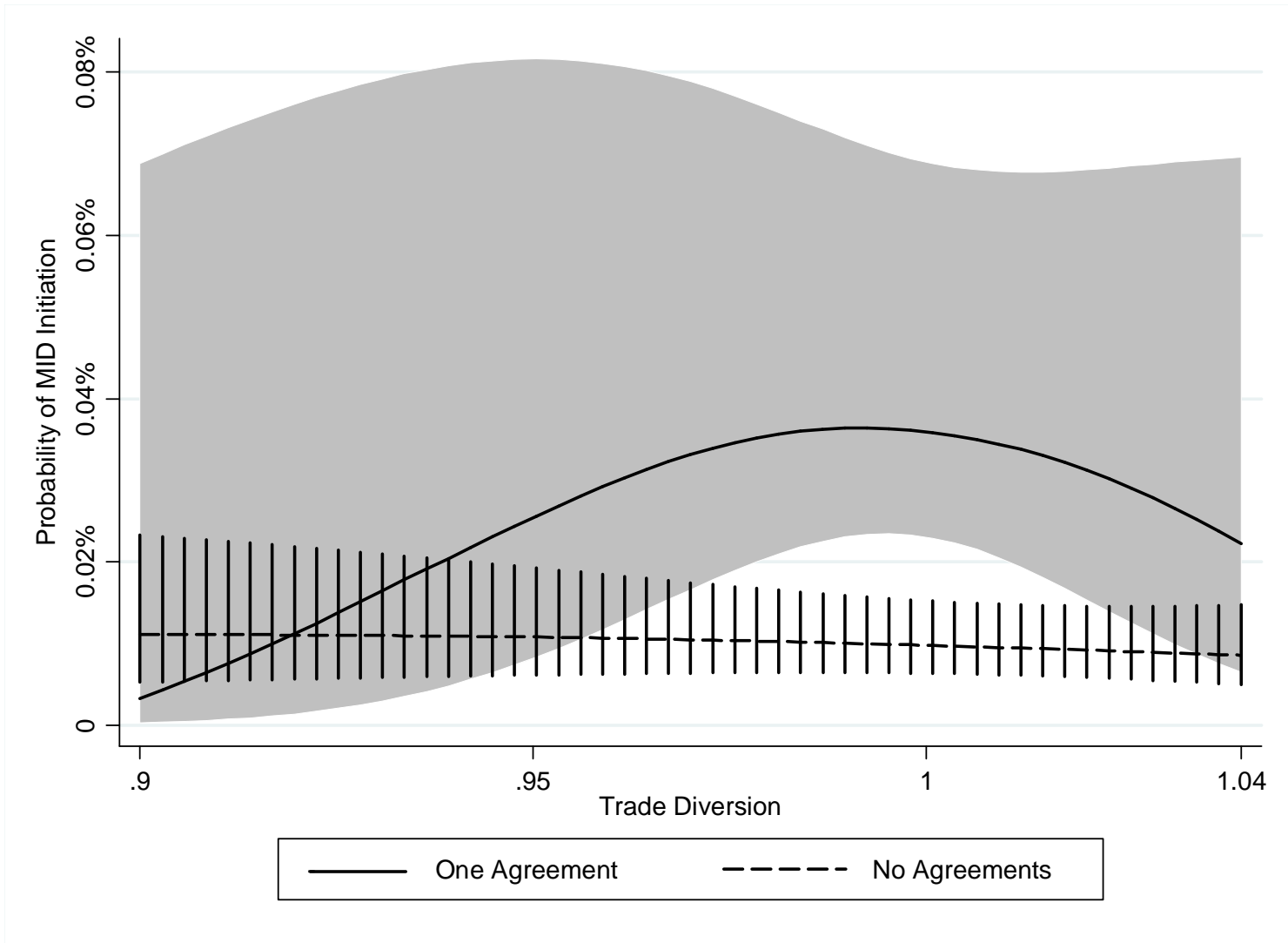


Figure 6.1: Predicted Probabilities of One Agreement Sanctions

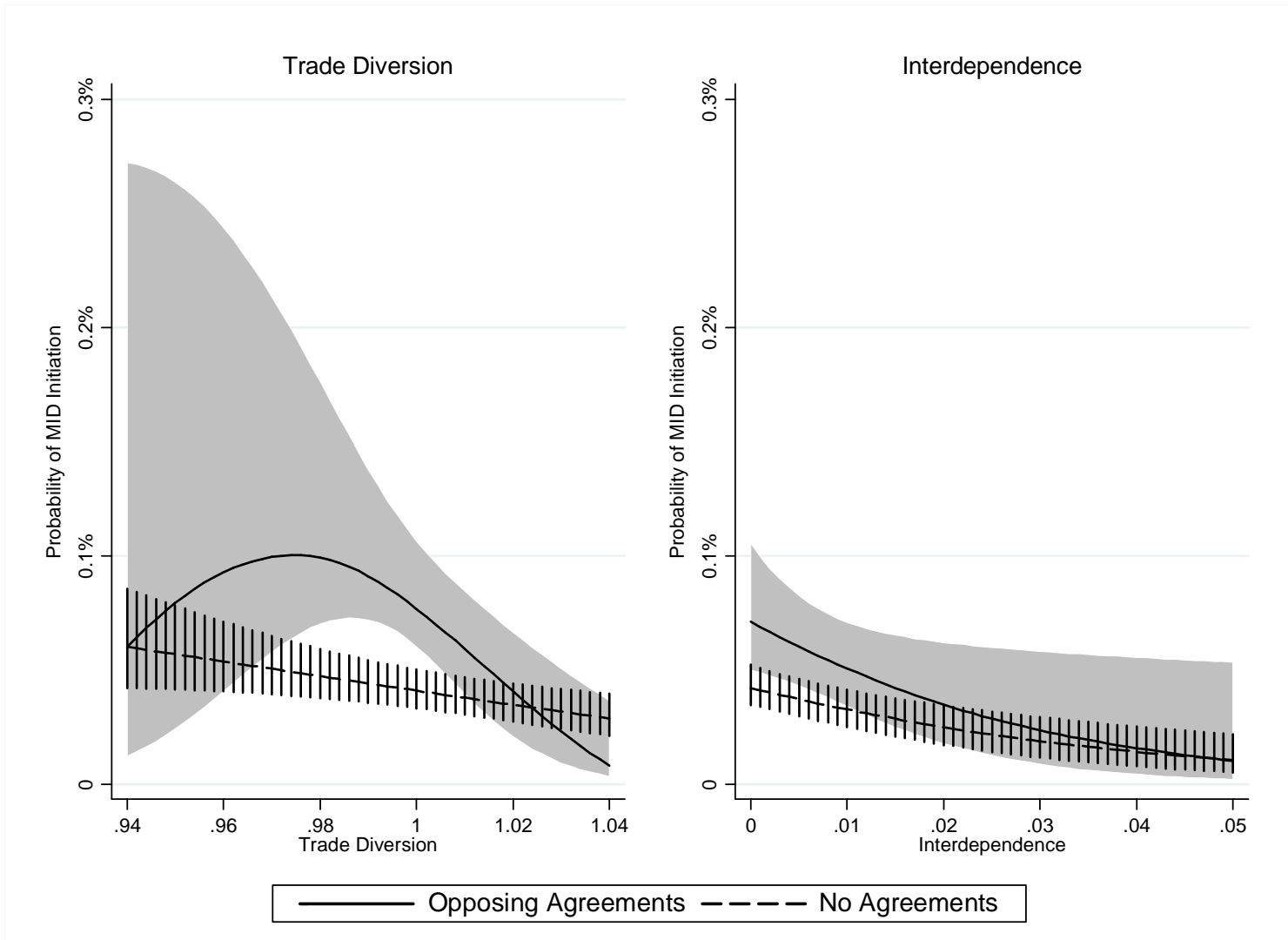


Figure 6.2: Predicted Probabilities of Opposing Agreement MIDs

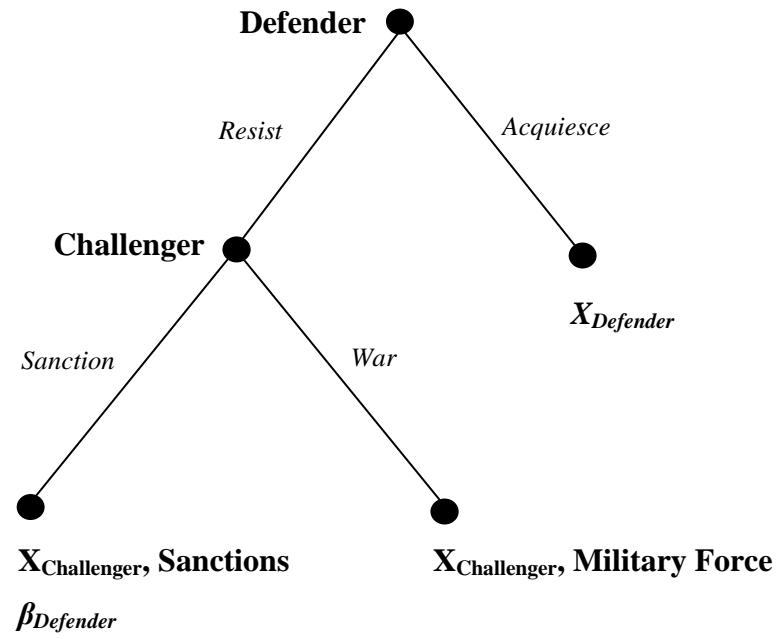


Figure 6.3: Strategic Probit Regressors

CHAPTER 7

CONCLUDING REMARKS ON ECONOMIC AGREEMENTS, INTERSTATE CONFLICT, AND POLICY SUBSTITUTABILITY

At the outset of this project, I asked whether formal economic integration agreements influence interstate conflict. I addressed this question by developing a deductive theory that builds on assumptions and findings in the extant trade and conflict literature. My theory and formal model indicated economic agreements should impact conflict relations between states in several ways. Members of the same economic agreement should engage in less overall conflict as interdependence and linkages increase. Furthermore, my argument predicted asymmetric trade relations between agreement members leads to the use of military force by the dependent state and sanctions by the autonomous state. Because economic agreements do not exist in a vacuum, I also derived predictions about conflict relations between members and non-members of agreements. Specifically, members and non-members are more likely to engage in conflict given reduced interdependence. They also likely prefer militarized force as a strategy in disputes due to the same factor.

The subsequent research design and statistical results in Chapters 4, 5, and 6 evaluate these arguments. For some of my hypotheses, the statistical analyses reveal conditional support and/or partial confirmation. For others, general patterns in the data suggested strong evidence against my hypotheses, extant scholarship, and possibly conventional wisdom. Each of these findings is interesting in their own right, but the

combination of results and bearing on my overall project is the focus of my concluding remarks. Overall, the results of my analysis raise interesting puzzles and avenues of future inquiry that are worthy of additional scholarly attention.

To conclude, I first summarize my findings in terms of their overall consistency with my general argument on economic agreements and interstate conflict. Then I build off of this summary and consider what we can draw from my analysis and findings. In other words, what have we learned from the previous six chapters? The third section of this chapter draws implications for policymakers from my argument and findings. Finally, I address the puzzles raised by my analysis and potential avenues of future inquiry for scholarly work. That is, I ask – where do we go from here?

7.1 Summary of Findings, or What Have I Done?

When considering the results of Chapters 5 and 6, the most notable outcome is the highly conditional nature of the influence economic agreements have on interstate conflict. Agreements do not necessarily have direct and clear positive or negative influences on conflict initiation. Rather, the economic relationships contain within and fostered by the agreements appear to be the mechanisms through which conflict is affected. Table 7.1 is an attempt to help organize the myriad relationships contained in my empirical analysis. Economic agreement status is shown on the left with the variables that increase (+) or decrease (-) the probability of conflict, sanctions, and military force in turn. Also shown are regressions for which none of my primary explanatory variables achieved statistical significance (□).

Surveying the results of the intra-agreement conflict chapter in the top half of the table reveals several interesting patterns. First, membership in an economic agreement,

particularly a deep one, is practically sufficient for the suppression of economic sanctions between states. Indeed, no two members of a customs union, common market, or economic union have experienced an economic sanction, suggesting deep economic integration is indeed sufficient for the non-use of sanctions. This likely reflects aspects of the institutional structure of agreements, such as codified rules or formalized relationships, which prevent or dissuade sanctioning. Second, asymmetry and intra-agreement trade appear to have strong and robust pacifying influences on conflict and militarized force between members of all agreement types. Hence, some aspects of agreements can indeed reduce the occurrence of conflict. Third, however, trade interdependence and FDI dependence may actually encourage militarized conflict between members of low-level trade agreements. This is an interesting finding that contradicts the current literature on commerce and conflict. It also highlights the conditional nature of economic relations and conflict. Some commercial linkages may induce peace while others may fan the flames of conflict.

The bottom half of Table 7.1 shows the results for extra-agreement conflict between members of agreements and non-members. In contrast to the intra-agreement model, conflict between members and non-members is noteworthy for differences between agreement types and economic relationships. First, distinct differences exist between the basic logit and strategic probit results. On one hand, this stands in stark contrast to the results of the intra-agreement analysis, where little strategic interaction appeared to be taking place with respect to policy substitution. Some economic relationships, such as asymmetric trade, appear to encourage economic agreement members to consider their opponent and potential consequences when acting. On the

other hand, the validity of the strategic probit rests on the assumption that a two-stage game is taking place where a state decides to coerce then determines the instrument to employ. Confidence in my results depends on the accuracy of this assumption.

Second, noteworthy differences exist between one and opposing agreement models. According to the basic logit, the two arrangements are mirror images. Having a dyad with one state in an agreement can affect sanctions, but not military force. Having two states in different agreements affects military force, but not economic sanctions. The strategic probit specification also shows key differences. Asymmetric trade relations reduce overall conflict, reduce sanctions, and increase MIDs in one agreement dyads. For opposing agreements, however, asymmetry increases overall conflict, increases sanctions, and reduces MIDs. Differences of this nature suggest different processes are at work in one agreement and opposing agreement dyads. It may be that asymmetry in the context of one agreement dyads results in militarized disputes because the state without an agreement is isolated economically and possesses fewer coercive alternatives. Members have an established and robust trade network while non-members are marginalized by the growing economic distance. Neither state is truly interdependent, thereby increasing the occurrence and severity of conflict. Opposing agreements are less sensitive to asymmetry, however, because both states possess their own trade networks. Vulnerabilities may be less acute as a result, thereby warranting lower-level coercive action through sanctions.

Third, the relationship between trade diversion and conflict is non-linear and non-intuitive. I argued in Chapter 3 that trade diversion represented relative gains for members and losses for non-members of agreements given the former simply shifts the

source of import/export while the latter experiences less overall trade. Relative gains/losses from trade are further posited to exacerbate conflict between states. My results do not lend credence to this argument, however. If anything, high levels of trade diversion may actually reduce conflict. The most conflict prone states are those with neutral levels of diversion or even mild trade creation. I touched on this point in Chapter 6, and will return to it in a more detailed discussion below.

Table 7.2 summarizes the findings in context of my six hypotheses. Consider each one in turn. H_1 argues that economic agreements reduce conflict between agreement members. I find conditional support for this argument, as asymmetry and intra-agreement trade reduce conflict (particularly MIDs) for both shallow and deep agreement members. H_2 states that conflict should be more likely between members and non-members of agreements. I again find conditional support. Per the strategic probit results, asymmetry and mild trade creation increases conflict for opposing agreement dyads. This result does not hold for dyads with one agreement, however. H_3 holds that less dependent agreement members are more likely to use economic sanctions than military force as a strategy in conflict. I do not find support for this argument, as states in the same economic agreement use sanctions with much less frequency than states without an agreement. H_4 builds on H_3 by arguing that more dependent agreement members use military force instead of economic sanctions. Again, no support is found for this argument. Asymmetry actually decreases MID initiation for members of both shallow and deep agreements. By extension, H_5 that argues symmetric trade relations reduce the occurrence of military force receives no support. Symmetry actually promotes military force between agreement members, it seems. Finally, H_6 argues that members and non-

members of agreements are more likely to use military force in disputes. I find conditional support for this hypothesis. Per the strategic probit results, asymmetry increases the use of MIDs in dyads with one agreement. Institutional structures increase the use of MIDs in opposing agreement dyads.

7.2 Piecing Together the Implications, or What Have We Learned?

Beyond the statistical results and their bearing on my hypotheses, it is important to consider the overall implications of my analysis for both scholars and policy makers. Several of my findings contradict portions of the literature on commerce and conflict. I offer a preliminary discussion and possible answers to several of these puzzles in this section. First, I consider in general the impact of agreements on conflict between members. I then discuss the unintended consequences of economic agreements as they relate to the broader context in which they are formed. Third, I revisit the substitutability of sanctions and military force along with a discussion of strategic behavior by states regarding coercive instruments. Finally, it is necessary to revisit the relationship between commerce and conflict in light of my results.

7.2.1 Summing Economic Agreements and Conflict

Perhaps the most basic point gleaned from my analysis of intra-agreement conflict is that economic agreements can indeed influence the conflict behavior of states. The structure of some trade relationships will encourage peace while others promote conflict. Specifically, trade symmetry, trade interdependence, and FDI dependence between some agreement members promotes conflict while asymmetry and intra-agreement trade encourage peace. Likewise, in the most basic sense, my analysis of extra-agreement conflict shows that economic agreements can influence conflict between members and

non-members. Relying on the strategic probit results, it appears that trade asymmetry discourages conflict (particularly militarized conflict) in dyads with only one agreement. In contrast, asymmetry and mild values of trade creation encourage conflict between states in different economic agreements. This is tempered by the institutional influence of opposing agreements and extreme values of trade creation and diversion, which decrease conflict. The strategies used in conflict also shift between opposing agreement members, as asymmetry and diversion promote sanctions while institutional structures encourage military force. Economic relationships thus appear to be contextual phenomenon which states interpret with some degree of latitude.

They key point, however, is that economic agreements appear to be moderating the influence of these factors. In other words, economic agreements do not simply accelerate the mechanisms by which commerce operations in international relations. Instead, they materially change the way in which states view and act on these relationships. On one hand, asymmetry tends to increase militarized conflict between states that do not share membership in an agreement. When two states form an agreement, however, asymmetry tends to pacify relations. On the other hand, trade interdependence and FDI dependence reduce militarized conflict in states without economic agreements. It is only through the influence of formal economic agreements that these factors result in disputes. This suggests agreements are the key factor in attenuating the influence of certain economic variables. It follows logically that certain structures of economic agreements, the relationships they foster, or characteristics of the states that form them alter the lens through which states view economic relationships.

Several possibilities exist for explaining the particular influence of economic agreements. As I argue in Chapter 3, economic agreements draw states into coordinated economic management and are difficult to shed as a result. Agreements also impose certain structures on economic relations between members that may institutionalize commercial relationships and give them a sense of relative permanence. Such factors may alter the way states view certain relations. With respect to asymmetry, for example, the institutionalized nature of agreements may bind highly dependent states to particular agreement members. Militarized conflict may be less likely, despite the vulnerability of the more dependent state, because the cost of conflict is simply too high. In other words, more dependent states may capitulate to stronger states instead of risking exclusion from the agreement by fighting. Symmetrically dependent states, on the other hand, are better poised to withstand the cost of conflict given their proportional reliance on each other.

Alternatively, economic agreements may highlight the policy differences or security issues between member states, thereby increasing the likelihood of conflict. Integration may increase economic competition between member states by bringing business into direct competition for markets and resources. High degrees of trade interdependence between states may therefore be indicative of competition instead of cooperation. Furthermore, foreign direct investment may flow from outside the agreement to particular agreement members and not others, thereby advantaging one state over others. Instead of developing internationally invested constituencies, economic agreements may encourage reactionary elements opposed to cooperation with other agreement partners. While this may not create conflict, it can neutralize the pacifying influence of domestic business constituencies on interstate conflict. Hence, while

vulnerabilities to states may have existed before integration, economic agreements may exacerbate or solidify them by imposing binding structure on commercial relations.

Likewise, the institutional structure of economic agreements may prevent or severely restrict the use of economic sanctions. On one hand, the legal framework of agreements may prohibit their use. That said, military conflict seems a more costly policy despite the “illegal” nature of sanctions. On the other, a state that uses an economic sanction against another member may face a coordinated response from other states in the agreement. In other words, agreements may practice “collective economic security” by responding to sanctioning states with coordinated, “overwhelming” economic force. Hence, sanctions are unlikely to succeed on their own. Military force, however, may actually work by raising the stakes of conflict and demonstrating more clearly the resolve of aggrieved parties.

Exclusion from economic agreements also appears to affect the influence of economic relationships on conflict. In particular, agreements also appear to structure the way members and non-members view their trading relationship. States may value trade differently depending on the context within which it exists. Again, interdependence in dyads with one agreement or opposing agreements does not appear to discourage conflict as reliably as it does between states without an agreement. My theory predicts as much by arguing that the salience of trade ties between members and non-members decreases when economic agreements are formed. Even though trade may exist, the pacifying influences are muted as members rely more on other members and less on the outside world for resources and markets. The more states look to agreement members for future

commercial relations, the less important non-members become. Once states form economic agreements that exclude others, in other words, the pacifying benefit of interdependence is sacrificed. Other commercial relationships may in turn become more important. Competition between members and non-members, which may manifest in trade symmetry or mild trade creation, can increase in importance and influence on conflict.

7.2.2 The Unintended Consequences of Economic Agreements

My results also highlight the unintended consequences of formal economic integration. Agreements are generally created to draw member states closer together economically. What is not readily apparent, however, is how such arrangements may alter commercial relationships with the external world. The existence and operation of finite international institutions influence relations with states excluded from membership precisely because they are excluded from membership. Hence, not all trade openness can be expected to purchase a state security. Indeed, those states that seek economic integration as part of a security plan aimed at excluded states may exacerbate conflict under certain economic conditions. States that seek intra-agreement security through economic agreements risk worsening tensions with those outside the agreement. Likewise, economic agreements created to exclude a particular adversary or rival may backfire, as agreements can exacerbate tensions between members and non-members.

Creating agreements may also have unintended consequences for conflict between agreement members. In particular, one of the more puzzling findings in my analysis is conflict-inducing tendencies of FDI dependence for shallow agreement members. The current scholarship on FDI and conflict indicates that inward FDI tends to reduce conflict

between states by providing information about capabilities, increasing opportunity costs, or providing alternative means of acquiring resources (Brooks 1999; Souva 2002; Souva and Prins 2006; Bussmann 2010; Lee and Mitchell 2012). Indeed, my analysis shows that two states without an economic agreement do experience less MIDs. When two states form a shallow agreement, however, FDI dependence actually increases the probability of conflict. This suggests the conditionality of FDI's influence on conflict. I offer potential explanations for this result in Chapter 5 and augment them with a case study of the East African Community. To summarize, however, the conflict inducing tendencies of FDI for shallow agreement members may reflect competition between businesses (and states) for resources. I return to this point in section 7.2.4 with a more thorough discussion of the liberal peace in light of my analysis.

7.2.3 The Puzzle of Economic Sanctions and Military Force

Overall, I find little evidence that states substitute economic sanctions for military force. One of the theorized mechanisms through which the liberal peace works is the use of sanctions to send costly signals in disputes, thereby obviating the need for war (Morgan and Schwebach 1997; Gartzke, Li, and Boehmer 2001; Drezner 2003; Verdier 2004; Lektzian and Sprecher 2007). By severing beneficial trade linkages, states are able to demonstrate their resolve and willingness to fight. It logically follows that the effectiveness of economic sanctions is a function of the interdependence between disputants (Allen 2008; Jing, Kaempfer & Lowenberg 2003). Economic agreement members, intuitively, are strong candidates to use economic sanctions given their explicit attempts at fostering interdependence and institutional ties. In turn, states that form

separate economic agreements excluding other trade partners appear less likely to use sanctions given reductions in interdependence.

My research indicates the opposite, however. Economic agreement members are in many ways the least likely group to use economic sanctions in disputes. Likewise, certain commercial relationships between members and non-members actually encourage the use of economic sanctions. Hence, the most likely group per my theory does not use sanctions while the least likely group does. In each empirical chapter I offered potential explanations for these results. By way of wrapping up this discussion, I draw together these two puzzling findings and offer general explanations about the process of sanctions.

One possible explanation of the sanctions results is that certain threshold effects are at play. Economic sanctions may be used for particularly low-level conflicts while military force is reserved for more serious disputes. Issues of relatively minor importance to states or in their early stages of development may warrant economic sanctions as a resolution attempt. Once the salience of a particular issue rises high enough, states might abandon sanctions in favor of more forceful policies that involve militarization. In this way, economic sanctions may not actually substitute for military force, but simply expand the range of issues over which states are willing to use coercive mechanisms. Sanctions and military force may be complementary policies in states' foreign policy tool kit.

Economic agreements may alter the cost-benefit calculus of these decisions depending on how they impact interdependence. Between agreement members, for example, the cost of sanctions may be relatively high given increases in trade between members and investment into the region. Fewer issues therefore warrant the cost of

economic sanctions between these highly interdependent states. Issues of mild importance are thus tolerated or resolved through diplomatic or less coercive tactics. In contrast, reduced interdependence between members and non-members may lower the cost of sanctions such that they are more frequently employed in low-level conflicts. The low cost of sanctions between members and non-members may increase the range of political issues decision-makers deem worthy of coercive action. To the extent trade blocs increase competition between members and non-members, sanctions may actually make a great deal of sense. Drezner (1999) models the effects of conflict expectations on economic statecraft. He finds that as concerns over relative gains and reputation increase, a state's decision to utilize sanctions increases as well. Alternatively stated, policy makers may be more willing to use sanctions to coerce – materially or symbolically – given it is unlikely to hurt the sender. There still exists, however, a range of issues over which even interdependent states are willing to risk lost trade and investment. Indeed, economic agreements may increase these issues due to commercial competition between states. For these issues, sanctions are inappropriate, as they might signal something less than total commitment (Fearon 1997; Hufbauer 1998). Consequently, the rate with which agreement members use military force against both other members and non-members can remain unchanged while sanctions become unnecessarily costly compared to other options.

This raises an additional point about the substitutability of coercive policies. I have modeled two alternative coercive policies in this study. The reality, however, is that coercion is a continuum on which many strategies exist. For example, diplomatic actions can serve as coercive tactics (e.g., boycotting the Olympics or withdrawing diplomats).

Alternatively, positive inducements like foreign aid or technical assistance can be used to “coerce” states into adopting more favorable policies. Economic agreements may indeed result in the substitution of coercive policies, just not economic sanctions as a preferred substitute. My analysis does not capture these potential substitutions given its focus on the more popular and costly coercive activities of sanctions and military force. While exploring these options is beyond the scope of this particular study, it might provide fruitful avenues of future research into substitutability.

Another possible explanation for my puzzling sanctions results concerns my modeling of the decision-making process. My theory and formal model sketch a two-stage approach where the sanctions/military force decision follows conflict initiation. In this way, decision-makers first decide to initiate conflict and subsequently determine the means by which they will coerce. Economic sanctions and military force are therefore outcomes of the same decision-making foreign policy process. This logit may be too rigid, however, as sanctions and military force may be complements rather than substitutes. Likewise, sanctions may be viable for one set of issues and military force another. Modeling the two policies as potential outcomes of the same process in such cases would be comparing apples and oranges. The assumption of complements or substitution is a critical in both my research and policy generally, and deserves future attention.

In light of this, the strategic model and argument I develop may be inappropriate for analyzing the use of economic sanctions. It certainly appears that economic agreement members are not acting strategically when engaging in disputes with other members given the near absence of economic sanctions. This is somewhat puzzling

given extant research. Tsebelis finds that strategies of target and sender depend on the payoff of the opponent rather than their own payoff in the case of sanctions. This suggests that leaders in the sending state are interested in punishing the target even at their own cost, which would seem to make sanctions more likely between agreement members given interdependence implies high costs. Likewise, Eaton and Engers (1992) find that sanctions and threats are more likely to be successful when expectation of future interaction exists, as we might expect between economic agreement members. The abstention from economic coercion by agreement members, in spite of the seemingly strong incentives, casts doubt on the use of strategy in using economic sanctions. It may be instead that states are primarily concerned about their own payoffs and costs when selecting coercive strategies. Hence, sanctions may be expressions of disapproval or attempts at punishment for the transgressions of other states instead of active compellent measures (Nossal 1998). Alternatively, they may serve a deterrent function meant to demonstrate the potential cost of objectionable policies rather than actually change the target state's policies (Hufbauer, Schott, and Elliot 2007). These factors might lend credence to the notion that sanctions and military force are more often compliments than substitutes.

In a similar vein, it may be entirely inappropriate to model economic sanctions as an outcome of a primarily foreign policy focused process. In addition to my assumption that sanctions and military force are outcomes of the same process, I assumed more fundamentally that sanctions are used exclusively (or at least primarily) to achieve foreign policy goals. It may be the case, however, that the use of sanctions reflects a domestically oriented policy process. Sanctions may demonstrate strong leadership or

sympathy to domestic constituencies by governments in order to gain political support (Drury 1998; Kaempfer and Lowenberg 1992; Mundo 1999; Whang 2011). Likewise, Kaempfer and Lowenberg (1988; 2003) and Eaton and Engers (1992) argue that sanctions may be more expressive than instrumental, whereby the goal of the sender is not necessarily to coerce the target state, rather to satisfy domestic audiences. This argument parallels the arguments made by Bueno de Mesquita and Smith (2007) with respect to foreign aid. Leaders care first and foremost about maintaining political power. Consequently, foreign aid is doled out by leaders with large winning coalitions to extract policy concessions from other states, not necessarily to achieve foreign policy goals. Sanctions, in turn, can be used to extract concessions for domestic political gains instead of security concerns. Consequently, the sanction process may not be so much strategically as domestically focused, an effect outside the scope of my model and study.

7.2.4 Puzzles in the Liberal Peace

My results also have interesting implications for the liberal peace. In some ways my theory and analysis pertaining to extra-agreement conflict supports the important pacifying forces behind arguments of interdependence and conflict. Exclusion from economic agreements, I argue, reduces the salience of trade ties. Consequently, integration severs the mechanisms by which the liberal peace operates between members and non-members. The core of liberalism is intact and possibly augmented by my analysis. What I do, however, is refine the conditions under which economic liberalism may succeed in preventing conflict between states. Economic integration may create security externalities for states if they significantly reduce the importance of external ties or allow security concerns to develop.

Likewise, my finding that intra-agreement trade reduces conflict may strengthen and expand some aspects of the liberal peace. Intra-agreement trade, as I have modeled it in this study, is all trade a state conducts with agreement members less bilateral trade with the specific dyadic partner. So in the case of NAFTA, the influence of intra-agreement trade between the United States' and Mexico is the geometric mean of US-Canada and Mexico-Canada trade. In this way the measure captures purely third-party influence. This suggests actors outside the immediate dyad in question can constrain conflict behavior between a particular pair of states. This suggests a somewhat unique causal process at work that goes beyond simple dyad relations and considers the broader effect of trade networks. The codified framework of trade relations established by economic agreements and the inherent excludability of benefits in the advent of conflict may in fact increase opportunity costs in ways that reduce conflict. Such findings lend themselves well, in theory, to a network analysis study that more formally models multilateral trade ties. While beyond the scope of this study, network analysis may prove a useful tool in exploring the affects of trade agreements on conflict in the future.

Yet my analysis raises several puzzles inherent in the liberal peace. First and foremost is the finding that foreign direct investment actually increases militarized conflict between members of shallow economic agreements. This challenges a burgeoning literature and requires more careful theory and testing of investment dynamics. Just as important, however, are my findings that the structure of trade relationships matter for conflict in certain situations. Indeed, this may be the most poignant criticism of the liberal peace in my analysis. While traditional liberal arguments hold that states value absolute gains in trade, and therefore are loath to sacrifice them

through conflict, I show that the structure of trade relations, specifically symmetry, matters in the decisions of states. Likewise, in the classic sense of the liberal argument, the diversion of trade due to economic agreements should not meaningfully influence state behavior. States instead tend to focus on extant trade and the benefits that accrue from it. The fact that trade diversion influences conflict behavior in any way suggests states do indeed care about the structure and context of trade. Consequently, states may value trade differently depending on the circumstances within which it exists. That is not to say, of course, that interdependence is not relevant to conflict between members and non-members. Rather, interdependence is only one aspect of economic relationships that influence conflict behavior. In other words, it is not sufficient to only identify the extent of commercial exchange between states to accurately understand their propensity to coerce. One must also understand how they value their commercial relationship and in what context it exists.

Overall, to the extent my findings contradict or challenge the liberal peace, they are not completely confirmatory of the logic I posit in Chapter 3. In particular, I argue that relative gains concerns between members and non-members of agreements are likely to be witnessed in trade asymmetry and diversion. These factors, in turn, are likely to increase conflict between members and non-members due to relative gains concerns. What I find, however, is that trade diversion and asymmetry may actually decrease conflict and the use of military force. Likewise, I argue that FDI dependence should reduce conflict between agreement members, as conflict introduces uncertainty that drives businesses away from states. I present some possible explanations in Chapters 5

and 6 for these results. A common theme extends across these results, however, that warrants discussion.

My argument in Chapter 3 may mischaracterize, or at least misstate, the ways in which relative gains concerns and vulnerability manifest between states. Relative gains concerns as related to economic exchange are likely to emerge in instances where states have the opportunity for cooperation (Powell 1991; Snidal 1991). That is, two states that do not anticipate commerce, due to geographic or political factors for instance, have no need to concern themselves with their hypothetical gains from trade. It stands that relatively close, competitive economic relationships are the most prone to the influence of relative gains. This is analogous to rivalries in various sports. Ohio State is unlikely to be concerned with the recruiting class of the University of South Carolina. While hypothetically they may be well matched and play a close game, they are highly unlikely to face each other in competition. Ohio State is much more concerned, however, with the University of Michigan's recruiting class given they face each other annually. A recruit that goes to South Carolina is unlikely interested in Ohio State, whereas a recruit for Michigan is likely a lost prospect for Ohio State.

The translation to economic agreements is more straightforward than one might initially think and relates specifically to the FDI findings. A firm that decides to invest in Brazil is implicitly a decision not to invest in Argentina. In the abstract, this is a relative loss for Argentina as it sacrifices manufacturing capacity and revenue that Brazil now gains. If the competition for FDI is sufficiently fierce, as might be expected when both states are highly dependent on FDI, relative gains concerns may manifest that influence conflict. Economic agreements may actually increase competition over resources and

expose vulnerabilities by institutionalizing these competitive commercial relations through a codified structure. In other words, competition may increase as agreements bring states into closer and fiercer competition for investment.

A similar process may take place between agreement members and non-members with respect to trade diversion. States with relatively mild levels of trade creation may simply be the most competitive commercial relationships. Economic agreements may provide certain exporters with sanctuary profits collected from the trade bloc, which in turn permits them to compete more fiercely with other regions. Trade may actually be created between members and non-members by different economic agreements as a result. Instead of highlighting absolute gains in trade, however, states may grow concerned about who gains more as competition over markets and resources develops. This includes both direct competition between trade blocs and competition for third-party markets and resources. As businesses from different trade blocs compete, states may become more acutely aware of being potentially disadvantaged by the success of competitors. Concern about vulnerabilities may develop in ways that encourage states to act more aggressively. Indeed, relative gains concerns are likely to manifest when the use of force is a potential issue (Powell 1991). Relative gains concerns may still apply to my analysis, therefore, but may require a different theoretical construct to explain my puzzling empirical results.

7.3 Implications for Policymakers, or What Do We Do?

Given the extensive use of economic agreements in today's global economy, my results have potentially important implications for policymakers. Many agreements (the early incarnations of the European Union, the Gulf Cooperation Council, ASEAN, etc.)

are formed with the specific goal of encouraging peace between member states. Likewise, many alliances contain an economic component aimed to deepen cooperation and ties. This strategy may or may not be wise depending on the economic relationship between members. My results suggest deep, hierarchical agreements with a dominant economic power are least likely to result in conflict. This is because hierarchical agreements likely generate asymmetry, intra-agreement trade from complementary economies, and less FDI competition (as the dominate state likely attracts most FDI). Such agreements create a hub-and-spoke system of economic relations revolving around one economically central country. Fortunately, this type of agreement is relatively common, as evident in NAFTA (United States dominant), the South African Development Community (South Africa dominant), Commonwealth of Independent States (Russia dominant), MERCOSUR (Brazil dominant), and others.

Agreements between equals, however, may not purchase the security states expect. Trade relations are likely symmetric with intense competition for FDI. This type of agreement is most likely to exist between less developed states in the global south. Ironically, the proliferation of agreements between developing states is an attempt to break dependence on more developed countries (Mayda and Steinberg 2007; UNCTAD 2008). Caution should be taken when pursuing such agreements, however, as they may bring states into tighter competition that can exacerbate tensions and result in conflict. The case of the East African Community in Chapter 5 is an example of an agreement between equals that resulted in conflict.

States considering economic agreements may also need to consider their broader impact on conflict with non-members. Exclusion from economic agreements, I argue,

reduces the salience of trade ties and reduces interdependence. That is, agreements sever the pacifying mechanisms of trade. Agreements should be structured such that trade with the external world receives limited negative disruption. At a minimum, newly formed agreements should avoid raising barriers to the outside world. This reduces the likelihood of adverse effects from disengagement. A better solution is to create economic agreements that lower barriers to trade with non-members (i.e., agreements that create areas more open to global trade). Such agreements are more likely than other types to generate trade creation and in turn peace. Alternatively, creating highly discriminatory agreements that completely marginalize the outside world by generating high levels of trade diversion are also likely to encourage peace. The overall welfare effects of discriminatory agreements are quite high, however, and represent a less compelling solution to potential conflicts between members and non-members.

Although I do not test the effectiveness of coercive policies in this paper, my analysis casts doubt on the ability of sanctions to do the work of military force. Highly interdependent states, as we might expect with agreement members, should be the best poised to use economic sanctions. This is not the case, however, given the paucity of sanctions between members. Likewise, the partial severing of interdependence between members and non-members intuitively should reduce the use of sanctions. As my analysis indicates, however, sanctions are more likely between states with presumably limited interdependence due to differing economic agreements. This suggests sanctions are employed to address a separate set of issues than military force. Indeed, sanctions may symbolically be used to express anger or disgust without intention of successfully compelling or coercing targets.

When all is taken into consideration, it is prudent to ask whether economic agreements are an overall advisable policy. The answer to this question is complicated and highly contextually. If nothing else, the results of my analysis point to the highly conditional relationship between economics and security. Some relationships encourage peace and others war between members. Others do not affect relations between members, but instead encourage or discourage conflict with non-members. The most important point is that economic agreements are not a ready-made solution to security issues. While it can be argued that economic agreements succeeded in encouraging peace in Europe, it would be foolish to assume identical results in other areas given the complexity of possible economic and political relationships compared to Europe. States must consider their most likely partners and competitors in determining the net impact – in both economic and security terms – before forming agreements.

7.4 Implications for Scholars, or Where Do We Go From Here?

My analysis has implications for several different veins of literature in international relations. Overall, I link diverse literatures that include conflict processes, economic statecraft, international organizations, and foreign policy analysis. I also explore methodological issues concerning imputed trade data in my statistical analysis. Many of these efforts contribute to the growth of the literature. Perhaps more importantly, however, they identify new puzzles for future exploration and research.

First, I contribute to the growing body of literature exploring the effects of economic relationships on interstate conflict. The proximate literature to which I speak concerns the relationship between economic agreements and interstate conflict. While agreements may foster peace, the effect is largely dependent on the structure of

commercial relationships between members. More work is needed to help resolve the puzzle I identify concerning the conflict inducing tendencies of FDI for certain agreement types. This finding contradicts a broad body of research showing the opposite effect. I presented brief case illustration in Chapter 5 to help identify potential causal pathways. More careful case study analysis may aid in identifying the processes at work. Alternatively, additional statistical research into the conditional nature of FDI's influence on interstate conflict may be useful. Identifying relationships that encourage competition and relative gains concerns is particularly important in this vein. Another avenue of future research linking economic relationships to conflict behavior involves the pacifying influence of intra-agreement trade. This finding suggests trade networks have a role in constraining the behavior of actors. A more thorough look at trade networks using actual social network analysis techniques may reveal interesting relationships at the global or regional level.

Second, I consider the empirical validity of policy substitution in coercive situations. While economic sanctions have long been posited as alternatives to war, few studies bring empirical results to bear. My analysis fails to find compelling evidence that economic sanctions substitute for military force in disputes. Indeed, my evidence suggests two different decision-making processes are at work between economic sanctions and military force. More research is required to identify the underlying linkages between disputes and coercive strategies. While economic sanctions may not substitute for military force, it is more likely I have yet to identify the appropriate circumstances in which they are successful in doing so. In particular, a range of issues may exist for which economic sanctions are likely and military force less so. Military

force may be likely in certain disputes for which economic sanctions are unlikely. Finally, a range of issues may exist where both sanctions and military force are viable. If substitutability is to be found, these are the most likely issue areas. Alternatively, the choice between sanctions and military force may deal more with domestic than international politics. Exploring the influence of regime type on strategies, for example, may prove more fruitful regarding substitutability.

Third, my analysis addresses a generally neglected area of international relations. Specifically, how might the existence and operation of finite international institutions influence states excluded from membership? State decisions to seek integration are strategic choices that necessarily exclude certain parties. It follows, therefore, that institutions may have as profound consequences for non-members as they do members. My analysis looks specifically at economic agreements and institutions. However, there is no reason to believe the effects of exclusion from institutions are limited to the economic realm. For example, omission from particular alliances may alter the conflict behavior of the excluded state. Other types of agreements may also produce changes in the security environment within which states exist. My work here provides one piece of what might be a dynamic and interesting research program.

Table 7.1: Summary of Statistical Findings for Economic Agreements and Conflict

		Basic Logit			Strategic Probit		
		<i>General Conflict</i>	<i>Economic Sanctions</i>	<i>Military Force</i>	<i>General Conflict</i>	<i>Economic Sanctions</i>	<i>Military Force</i>
Economic Agreement Members (Intra-Agreement Conflict)							
Shallow	+	Interdependence FDI Dependence	○	Interdependence FDI Dependence	-----	-----	-----
	-	Institution Asymmetry Intra-Agreement	Institution	Institution Asymmetry Intra-Agreement	-----	-----	-----
Deep	+	○	○	○	-----	-----	-----
	-	Asymmetry Intra-Agreement	Institution	Asymmetry Intra-Agreement	-----	-----	-----
Members and Non-Members (Extra-Agreement Conflict)							
One Agreement	+	-----	Mild Trade Creation	○	○	○	Asymmetry
	-	-----	Institution Diversion/Creation	○	Asymmetry	Asymmetry	○
Opposing Agreement	+	-----	○	Mild Trade Creation	Asymmetry Mild Creation	Asymmetry Trade Diversion	Institution

Table 7.1: Continued

		Basic Logit			Strategic Probit		
		<i>General Conflict</i>	<i>Economic Sanctions</i>	<i>Military Force</i>	<i>General Conflict</i>	<i>Economic Sanctions</i>	<i>Military Force</i>
Members and Non-Members (Extra-Agreement Conflict)							
Opposing Agreement	-	-----	○	Institution Interdependence Diversion/Creation	Institution Diversion/Creation	Institution	Asymmetry Trade Diversion

○ Indicates nonsignificant findings

Table 7.2: Summary of Findings for Hypotheses

<i>H₁: Economic agreements decrease the likelihood of conflict between member states.</i>
Conditional - Asymmetry and intra-agreement trade reduce conflict (particularly MIDs) for both shallow and deep agreement members. Interdependence and FDI increase conflict for shallow agreement members, however.
<i>H₂: Economic agreements increase the likelihood of conflict between members and non-members of the agreement.</i>
Conditional - Per the strategic probit results, asymmetry and mild trade creation increases conflict for opposing agreement dyads. Institutional structures and high trade diversion/creation decreases conflict for opposing agreement dyads. Asymmetry decreases conflict for one agreement dyads.
<i>H₃: Less economically dependent agreement members are more likely to use economic sanctions against other members as a tool of coercion.</i>
No Support - States in the same economic agreement use sanctions with much less frequency than states without an agreement.
<i>H₄: More economically dependent agreement members are more likely to use military force against other members as a tool of coercion.</i>
No Support - Asymmetry decreases MID initiation for members of both shallow and deep agreements.
<i>H₅: Symmetrically dependent agreement members are less likely to use military force against other members as a tool of coercion than asymmetrically dependent members.</i>
No Support - Symmetric trade relations increase the probability of MID initiation for members of both shallow and deep agreements.
<i>H₆: Economic agreements increase the likelihood of militarized conflict between members and non-members.</i>
Conditional - Per the strategic probit results, asymmetry increases the use of MIDs in dyads with one agreement. Institutional structures increase the use of MIDs in opposing agreement dyads. Asymmetry and trade diversion reduce MID initiation in opposing agreement dyads.

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APPENDIX A – EQUILIBRIUM CALCULATIONS

Challenger's decision of sanctions over war:

$$p\lambda\underline{q} + (1-p)\lambda\bar{q} - \gamma_c \geq p\underline{q} + (1-p)\bar{q} - \theta_c$$

$$p\lambda\underline{q} + \lambda\bar{q} - p\lambda\bar{q} - \gamma_c \geq p\underline{q} + \bar{q} - p\bar{q} - \theta_c$$

$$p\lambda\underline{q} - p\lambda\bar{q} - p\bar{q} + p\bar{q} \geq \underline{q} - \lambda\bar{q} + \gamma_c - \theta_c$$

$$p(\lambda\underline{q} - \lambda\bar{q} - \underline{q} + \bar{q}) \geq \bar{q} - \lambda\bar{q} + \gamma_c - \theta_c$$

$$p \leq \frac{(\theta_c - \gamma_c) + (\lambda\bar{q} - \bar{q})}{(\underline{q} + \bar{q}) - \lambda(\bar{q} - \underline{q})}$$

$$\xi = p \leq \frac{(\theta_c - \gamma_c) + \bar{q}(1 - \lambda)}{(\underline{q} - \bar{q})(1 - \lambda)}$$

Challenger's decision between \underline{x}_E and \bar{x}_E demand when $p \leq \xi$:

$$\lambda\bar{q} + \gamma_D \geq p(\lambda\underline{q} + \gamma_D) + (1-p)(\lambda\bar{q} - \gamma_c)$$

$$\lambda\bar{q} + \gamma_D \geq p\lambda\underline{q} + p\gamma_D + \lambda\bar{q} - \gamma_c - p\lambda\bar{q} + p\gamma_c$$

$$\gamma_D + \gamma_c \geq p(\lambda\underline{q} - \lambda\bar{q} + \gamma_D + \gamma_c)$$

$$p \leq \frac{\gamma_c + \gamma_D}{\lambda(\underline{q} - \bar{q}) + \gamma_c + \gamma_D}$$

Challenger's decision between \underline{x}_M and \bar{x}_M demand when $p > \xi$:

$$\bar{q} + \theta_D \geq p(\underline{q} + \theta_D) + (1-p)(\bar{q} - \theta_c)$$

$$\bar{q} + \theta_D \geq p\underline{q} + p\theta_D + \bar{q} - \theta_c - p\bar{q} + p\theta_c$$

$$\theta_D + \theta_c \geq p(\underline{q} - \bar{q} + \theta_D + \theta_c)$$

$$p \leq \frac{\theta_c + \theta_D}{\underline{q} - \bar{q} + \theta_c + \theta_D}$$

APPENDIX B – MISSING DATA AND MULTIPLE IMPUTATION

Given this inherent difficulty in imputing trade data, I first tested the quality of imputed trade values against available data. I used the following procedure to evaluate how closely imputed trade data resembled actual trade reported between countries.

Specifically, I:

1. Created a dataset containing only observations for which trade data is available (using Correlates of War data developed by Barbieri and Keshk (2011)).
2. Randomly deleted trade values for 20% of observations (approximately 81,000).
3. Using Amelia II, imputed missing trade data using the recommendations of King et al (2001), which includes:
 - a. Include all variables to be used in the final statistical model.
 - b. Adding additional variables to help estimate missing values.
 - c. Accounting for temporal and cross-sectional continuity statistically using Amelia.
4. Performed various diagnostic tests comparing the imputed trade data against actual trade data to determine the adequacy of fit.

A complete list of the variables I used in the imputation model is included in Table B.1 (along with the percentage missing in my analysis). Table B.2 briefly compares the summary statistics between the imputed and actual trade data. The summary statistics – particularly the mean, median, and standard deviation – seem to suggest the imputed values roughly follow the distribution of the actual trade data with one notable exception. The imputed values do not perform well at particularly low levels of actual trade. That is, the imputation model struggles to report accurate values when the expected level of trade is low. This is evident in the scores for first quartile. The actual first quartile value is

4.605 (zero trade) while the imputed first quartile is 6.324 – a difference of 37%.²⁶

Consequently, the imputation imposes trade relationships in dyads where none exist.

Figure B.1 graphically represents several important relationships between imputed trade values and key predictors. The top left panel of Figure B.1 plots histograms of the actual and imputed trade values along with kernel density lines.²⁷ As the summary statistics indicate, the imputation model performs remarkably well if an actual trade relationship exists, given the nearly identical kernel density lines between logged values of 10 and 20. However, the imputed model vastly underestimates the proportion of zeros in trade data. Indeed, while approximately 30% of actual trade values are zero, only 11% of imputed trade values are zero or less. As I will discuss later, this may prove problematic for statistical analysis.

While the overall distribution of imputed values is an important consideration, my unit of analysis is the dyad-year. It is therefore important that the imputed values not only match a general pattern but also perform well in predicting the trade occurring between specific states. To evaluate the imputation model's performance in this respect, I focus on the variance between actual and imputed trade values. I calculate this by subtracting imputed trade from actual trade such that positive (negative) values reflect overestimation (underestimation) by the imputed model. The top right panel of Figure B.1 is a scatterplot of variance against actual trade values. From this figure, the only discernible pattern to the variance is a tendency for the imputation model to overestimate trade at low values, as might be expected given my analysis of the summary statistics.

²⁶ In order to impute trade values, which are logged, I added \$100 to the trade variable for all observations.

²⁷ Because the data are logged, zero trade in my analysis is actually a trade value of \$100 (or a logged value of 4.605). In other words, it is impossible for an actual trade value to be less than 4.605. Approximately 10% of imputed values, however, are less than 4.605. The difference between 4.605 and anything less, however, is marginal and by definition less than \$100.

Closer inspection of the variance metric, however, reveals two major influences on the accuracy of the imputation model. First, observations where GDP is missing for at least one state in the dyad result in greater differences between imputed and actual values. The mean variance for observations missing GDP is 0.488 compared to 0.011 for observations possessing valid GDP scores. The bottom left panel of Figure B.1 graphically represents this relationship using histograms and kernel density plots for observations according to whether they are missing GDP or not. As can be seen from the histograms, observations with valid GDP scores cluster around zero variance. Those missing GDP values, however, are more diffuse and result in relatively higher variance.

The second noteworthy influence on variance, as might be expected, is whether an actual trade relationship exists or not. That is, as I have indicated prior, the imputation model struggles to accurately estimate trade when two states do not trade (i.e., when trade is zero). The mean variance for observations where trade is zero is 0.704 compared to 0.255 for observations where trade is non-zero. The bottom right panel of Figure B.1 includes histograms for 1) non-zero trade relationships and 2) zero trade relationships along with kernel density plots. Two items are noteworthy from this panel. First, the peak distribution of dyads with zero trade is above zero variance, indicating that the imputation model tends to fit trade relationships even when none exist. Second, the tail of the zero trade distribution is fatter than for non-zero trade dyads. This suggests a greater proportion of the high variance observations are zero trade dyads. In other words, dyads where the actual trade is zero are more likely to be inaccurately estimated (potentially egregiously) by the imputation model.

Before exploring the potential impact of missing GDP and zero trade dyads on my analysis, Figure B.2 summarizes these relationships. The top left quadrant of Figure B.2 plot the difference between actual and imputed trade values over time according to whether the dyad contains GDP scores for both states (black dots) or is missing at least one GDP value (grey Xs). Likewise, the top right quadrant plots differences for dyads with non-zero and zero trade (black dots and grey Xs respectively). From these plots, the highest variances in my analysis appear to be dyads with zero-trade. In this light, GDP does not appear as problematic. The bottom left quadrant reflects dyads both missing GDP and possessing zero trade. As might be expected, this results in consistently and relatively severe differences between actual and imputed values. In other words, missing GDP and possessing zero trade is highly likely to skew imputation values. Finally, the bottom right quadrant plots variance for dyads missing data on any other variable. The black dots reflect observations without any missing data and positive trade scores while the grey Xs are observations missing data on at least one variable, but possessing GDP scores and non-zero trade values. I provide this plot as a comparison for the others. As can be seen, variances are generally less pronounced and erratic if a variable other than GDP is missing or trade is zero between states in a dyad.

Table B.1: Imputation Model Variables

Variable	Measure	% Missing
<i>Primary Imputed Variable</i>		
Trade (logged)	Dyadic exports + Imports	26.8%
<i>Gravity Variables</i>		
Contiguity	Dichotomous, shared border or separated by 150 miles of water or less	0.0%
Distance	Capital to Capital	0.0%
Regional Dummies	UN definitions (9 total regions)	0.0%
Same Region	Dichotomous, two states in the same region	0.0%
GDP, high (logged)	Real GDP for both states	16.0%
GDP, low (logged)	Lowest GDP score in dyad	16.0%
Common Language	Dichotomous, two states share the same language	0.0%
Major Power	Dichotomous, coded 1 if one states in the dyad is a major power	0.0%
Major Powers	Sum of major powers in dyad	0.0%
Population (high, logged)	Sum of population in dyad, highest score in dyad	5.5%
Population (low, logged)	Sum of population in dyad, lowest score in dyad	5.5%
<i>Political Variables</i>		
Affinity	Gartzke political affinity scores	1.8%
Alliances	Dyad shares a defense pact, neutrality pact, or entente	0.0%
Democracy, high	POLITY IV composite measures (-10 to 10), highest score in dyad	23.3%
Democracy, low	POLITY IV composite measures (-10 to 10), lowest score in dyad	23.3%
Regime Similarity	POLITY IV (0 to 20), absolute difference in democracy scores	20.0%
Openness, high	National trade as a share of GDP, highest score in dyad	21.0%
Openness, low	National trade as a share of GDP, lowest score in dyad	21.0%
IGO Membership	Count of organizations of which both states are members	4.18%
Trade Agreement, level	Ordinal variable (0 to 5) indicating the depth of economic integration	0.0%
Trade Probability	Predicted probability of a trade relationship between states in a dyad (based on a gravity model used to predict trade diversion values)	10.6%
MID Initiation	Dichotomous, a MID initiates between states in the dyad	0.0%
Fatal MID Initiation	Dichotomous, a MID initiates between states in the dyad where at least one fatality occurs	0.0%

Table B.1: Continued

Variable	Measure	% Missing
<i>Political Variables</i>		
Political Sanctions	Dichotomous, a sanction between states in the dyad for political reasons	0.0%
Sum of MIDs	Rolling sum of MIDs in dyad, 1950 to 2001	
Sum of Fatal MIDs	Rolling sum of fatal MIDs in dyad, 1950 to 2001	
Sum of Political Sanctions	Rolling sum of political sanctions in dyad, 1970 to 2001	
Peace Years (cubic)	Years since last MID (cubic polynomial term for temporal dependence)	0.0%
Fatal Peace Years (cubic)	Years since last fatal MID (cubic polynomial term for temporal dependence)	0.0%
Sanction Years (cubic)	Years since last sanction (cubic polynomial term for temporal dependence)	0.0%
Spatial Lag, MID	Spatial lag variable for MID initiation using contiguity as connector	0.3%
Spatial Lag, Sanctions	Spatial lag variable for sanction initiation using contiguity as connector	0.3%
<i>Variables Used in Statistical Analysis</i>		
One Agreement	Only one state in the dyad is a member of any economic agreement	0.0%
Opposing Agreements	Both states in the dyad are members of different economic agreements	0.0%
Shallow Agreements	Shallow economic agreements	0.0%
Deep Agreements	Deep economic agreements	0.0%
Trade Interdependence	Total bilateral trade as a share of GDP, dyadic score	36.7%
Trade Asymmetry	Absolute difference in trade interdependence scores, higher values indicating greater asymmetry	36.7%
FDI, high	Total inward FDI, highest score in dyad	34.3%
FDI, low	Total inward FDI, lowest score in dyad	34.3%
FDI Dependence	Total inward FDI as a share of GDP, dyadic score	34.3%
One Agreement *Interdependence	Interaction between dyads with one agreement only and trade interdependence	38.4%
One Agreement *Asymmetry	Interaction between dyads with one agreement only and trade asymmetry	38.4%
Opposing Agreements *Interdependence	Interaction between dyads with separate agreements and trade interdependence	38.4%
Opposing Agreements *Asymmetry	Interaction between dyads with separate agreements and trade asymmetry	38.4%

Table B.1: Continued

Variable	Measure	% Missing
<i>Variables Used in Statistical Analysis</i>		
Shallow*Dependence	Interaction between dyads with shallow agreements and trade dependence	27.2%
Shallow*Asymmetry	Interaction between dyads with shallow agreements and trade asymmetry	27.2%
Shallow *FDI	Interaction between dyads with shallow agreements and FDI dependence	34.3%
Deep*Dependence	Interaction between dyads with deep agreements and trade dependence	27.2%
Deep *Asymmetry	Interaction between dyads with deep agreements and trade asymmetry	27.2%
Deep *FDI	Interaction between dyads with deep agreements and FDI dependence	34.3%

Table B.2: Actual and Imputed Trade Data Comparison

	Actual	Imputed	% Difference (Imputed – Actual)
Mean	12.100	12.129	0.2%
Median	13.415	13.110	-2.3%
Standard Deviation	5.513	5.286	-4.1%
Minimum	-1.595	4.605	-388.7%
Maximum	26.651	28.827	8.2%
1%	4.605	3.005	-34.7%
25%	4.605	6.324	37.3%
50%	13.415	13.110	-2.3%
75%	16.490	16.266	-1.4%
99%	21.995	22.036	0.2%

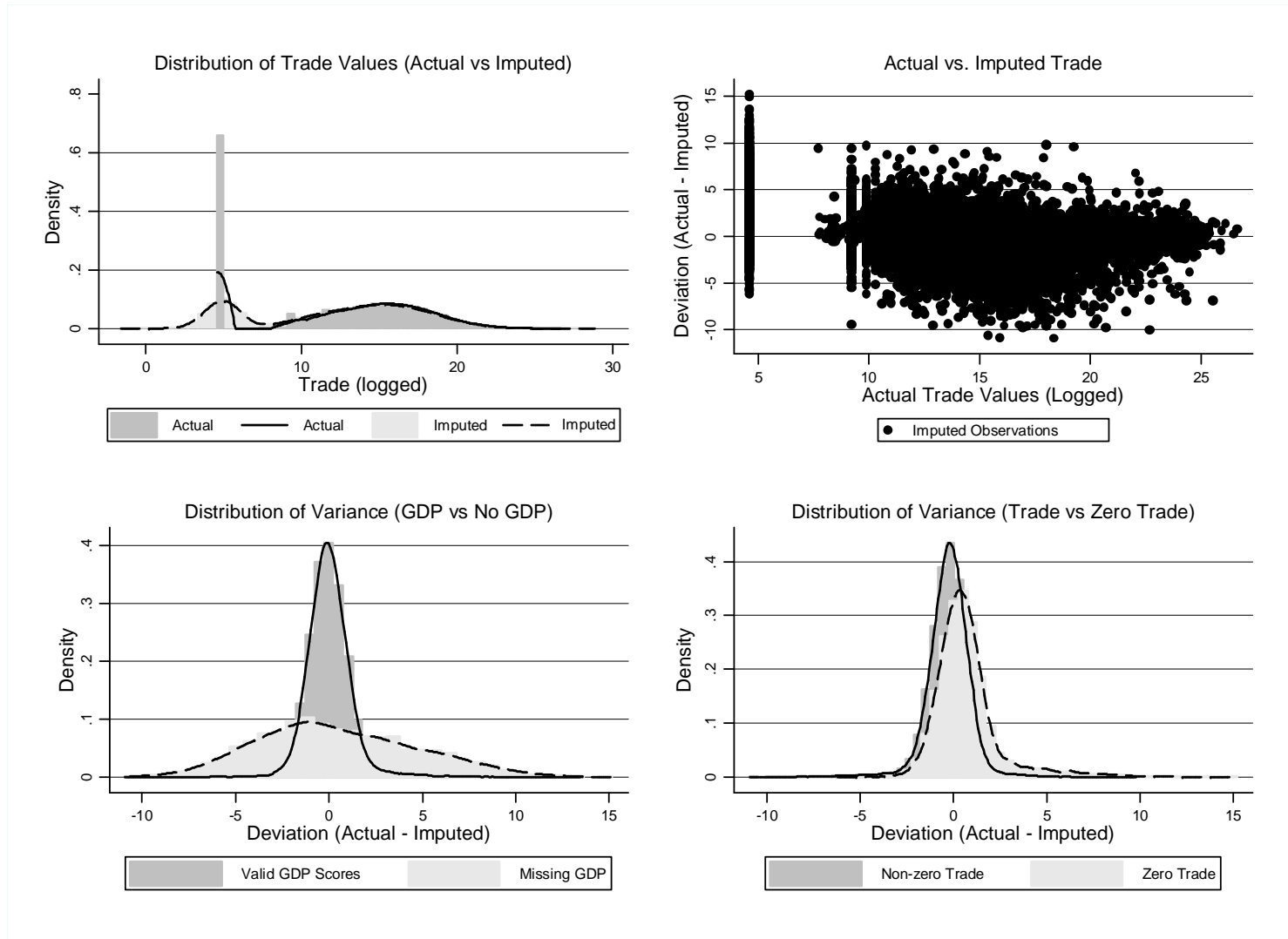


Figure B.1: Evaluation of Imputed Trade Data

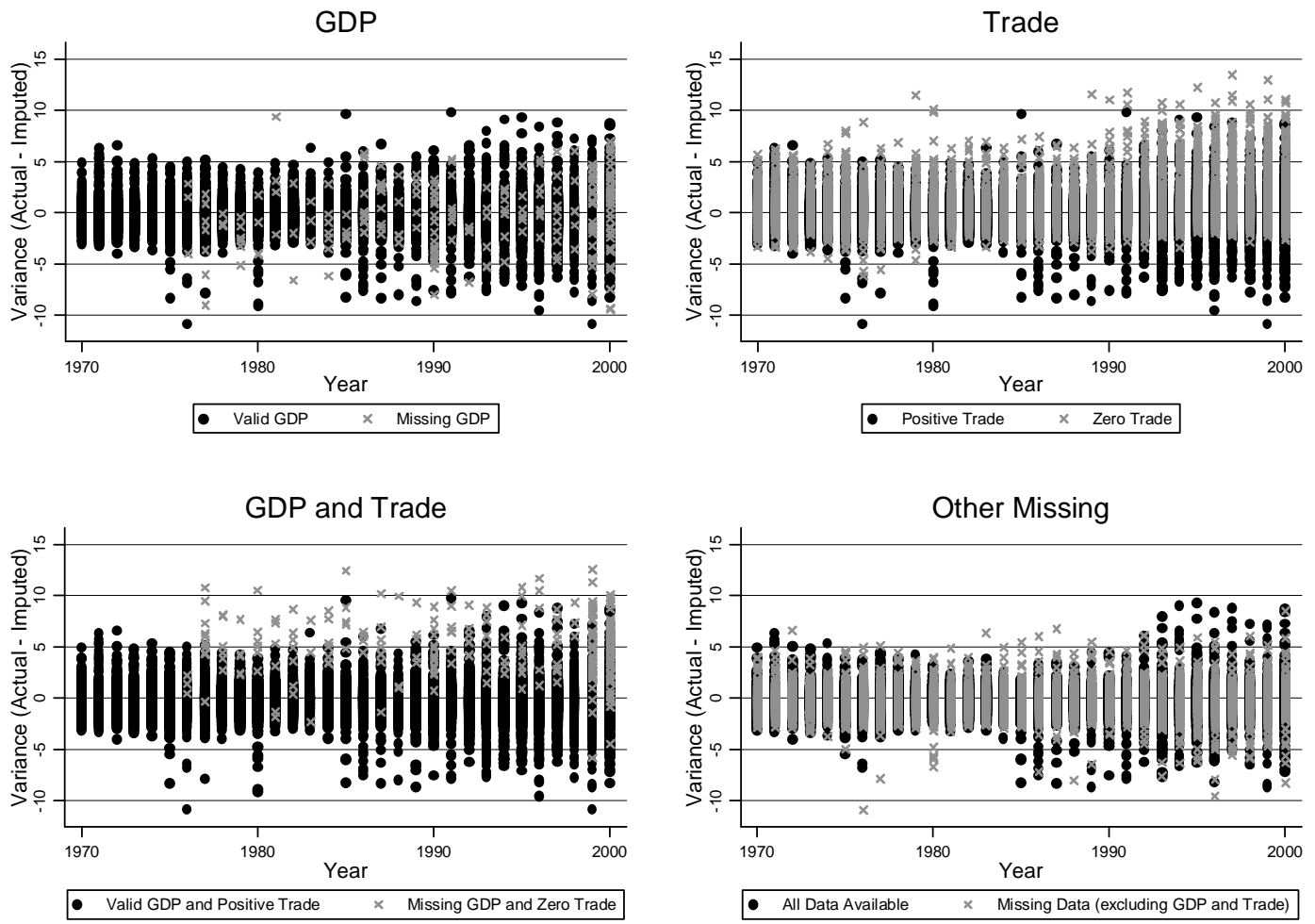


Figure B.2: Variances (Actual – Imputed)

APPENDIX C – ROBUSTNESS CHECKS

In this appendix, I present variations on the models in Chapters 5 and 6 to address potential concerns and qualify my results. I separate the robustness tests by chapter, beginning with Chapter 5 concerning intra-agreement conflict.

A.1 Intra-Agreement Conflict

Chapter 5 analyzes conflict between states in the same economic agreement using basic and imputed logit analysis. I also offer a robustness test in-chapter addressing potential endogeneity concerns using a Heckman selection model. In this section, I elaborate on my analysis of intra-agreement conflict presented in Chapter 5 by: pooling sanctions and MIDs as the dependent variable, limiting the dependent variable to fatal MIDs only, and disaggregating agreements into five categories based on finer criteria than that used in Chapter 5.²⁸

A.1.1 Pooling Sanctions and MIDs

Hypothesis 1 argues that two states in the same economic agreement are less likely to engage in conflict than states that do not share an agreement. My analysis showed that agreement members tend to avoid sanctions, but still use military force with some frequency. It is difficult, therefore, to evaluate their overall propensity to engage in disputes given the paucity of sanctions. I address this by pooling sanctions and MIDs

²⁸ In addition to the tests in this appendix, I also conducted several others that I do not report. These include rare-events logits, transformations of the primary variables (i.e., logs), simultaneous equations, and samples using only politically relevant dyads. The results of these tests were identical to those included in Chapter 5, and are therefore omitted for space and clarity.

into one dependent variable. This effectively treats the two strategies as one decision, thereby allowing me to evaluate whether agreement members are more or less likely to be involved in disputes compared to states that do not share membership in an agreement. All other aspects of the research design remain constant, to include control variables and use of basic logit estimation techniques.

Table C.1 contains the logit results of the pooled sanction/MID model. Overall, the results for shallow agreements are identical to those reported in Chapter 5. The agreement variable, the interaction with asymmetry, and intra-agreement trade tend to reduce the use of a coercive instrument in a dispute. The interactions between agreements and interdependence and FDI (separately) tend to increase the probability of two states in a shallow agreement using a coercive instrument. Given these results, I have greater confidence in the conclusions I draw from my primary analysis in Chapter 5.

The results of the deep agreements model differ from my primary analysis in one respect. While intra-agreement trade achieves statistical significance in my Chapter 5 analysis, it fails to do so in the pooled sanctions/MID model. Intra-agreement trade therefore reduces the likelihood of MIDs between deep agreement members, but does not influence the overall use of coercion when compared to dyads without agreements. In other words, as states in an agreement grow more reliant on trade with other agreement members, they are neither more nor less likely to experience disputes or use coercive instruments. They are less likely, however, to use militarized force if viewed in isolation. The overall impact of this finding, therefore, is to add nuance to my analysis. In particular, intra-agreement trade does not appear to influence the overall rate of disputes between deep agreement members. It does, however, dissuade them from militarization.

The decision to use military force is likely a function of other factors, such as relative capabilities, the ability to project power, and neighboring disputes.

A.1.2 Fatal Militarized Interstate Disputes

Militarized Interstate Disputes set a relatively low threshold for entry into the dataset. Any threat, display, or use of force is coded as a MID. In particular, threats and displays can be relatively innocuous and involved more posturing than serious intent (see Downes and Sechser 2012 for an analysis of MID types). Fishing disputes, for example, often result in observed MIDs without actual violence taking place. Including such low-level incidents in analyses of conflict can be problematic, as they may not reflect true intent to engage in full-fledged hostilities. One means of remedying this supposed problem is limiting the dependent variable to MIDs where at least one individual has died. This washes out low-level disputes and focuses only on meaningful conflicts.

My analyses in Chapters 5 and 6 uses the full sample of MIDs and are not restricted to only ones with fatalities. This is a conscious choice in my research design made with sound reason. One of my focuses is on the decision to use either economic sanctions or military force. Consequently, I theorize that states choose between using economic or military coercion as strategies in a dispute. It follows that even low-level disputes reflect a conscious choice to use military force instead of economic sanctions. Fishing disputes that result in militarization reflect a set of national policies that allow for such actions instead of economic ones. Even if threats are cheap talk, leaders choose between militarized or economic cheap talk. Allowing for even the slightest difference in cost between threatening the two strategies justifies the inclusion of all MIDs and sanctions episodes. In other words, I am truly testing the decision between instruments

and not necessarily the use of those instruments. This requires a full sample of MIDs and sanctions to include threats, displays, and uses of instruments.

It is still theoretically interesting and important, however, to consider the higher threshold of MIDs as it is influenced by economic agreements. To do this, I use MIDs in which at least one fatality occurs as my dependent variable. I use the same primary explanatory and control variables as my primary analysis in Chapter 5. In total, 156 fatal MIDs occurred between shallow agreement members (1.16% of observations) compared to 475 for no agreement dyads (0.28% of observations). A total of 32 MIDs occurred between deep agreement members (1.26% of observations). Given the infrequency of fatal MIDs, I am required to use rare-events logit for estimation.²⁹

Table C.2 contains the results of the fatal MIDs estimation. Looking first at the shallow agreements model, several differences are evident between the all and fatal MIDs estimations. In particular, while intra-agreement trade, the interaction between shallow agreements and asymmetry, and the interaction between agreement and interdependence are statistically significant with respect to all MIDs, they fail to achieve significance with fatal MIDs. Consequently, while these asymmetry and intra-agreement trade reduce the overall use of MIDs, they do not influence the occurrence of fatal MIDs. Likewise, interdependence may increase the likelihood of a MID, but does not impact the actual use of violence.

The two remaining primary explanatory variables impact both all and fatal MIDs models. The agreement variable, indicating that two states are in an economic agreement, is negative and significant in line with the all-MIDs model. Two states that

²⁹ Significant differences are evident between the regular and rare-events logit, suggesting the rare-events specification is the appropriate estimator.

share membership in a shallow agreement are less likely to experience a MID or see it escalate to violence by virtue of their association. In contrast, the interaction between agreements and FDI is positive and significant. Greater FDI dependence between shallow agreement members both increases the occurrence of MIDs and the likelihood they escalate to actual fighting.

Turning to the deep agreements model, notable differences are evident. First, intra-agreement trade fails to achieve significance in the fatal MIDs model, suggesting that members that trade with other agreement members are less likely to have a MID, but are neither more nor less likely to see it escalate. Second, the agreement variable is positive and significant such that two states in a deep agreement are more likely to experience a fatal MID. This stands in contrast to the all MIDs model where it failed to achieve significance. The intangible aspects of deep agreements, therefore, do not influence MID initiation, but tend to increase the likelihood that MIDs will tend towards the use of force. Third, both interactions between agreements and interdependence and FDI are negative and significant. Deep agreement that trade heavily and rely on FDI are less likely to experience fatal MIDs, but neither more nor less likely to experience overall MIDs. Finally, the interaction between asymmetry and agreements actually switches signs between the all and fatal MIDs specifications. While asymmetry between agreement members reduces the likelihood of a MID, it actually increases the likelihood of fatal MIDs. This suggests asymmetric dyads have less but bloodier MIDs than no agreement dyads.

The overall impact of these results on my analysis is to provide addition context and raise puzzles for future research. My analysis focuses in large part on the choice

between militarized and economic coercion. This necessitates a broad view of both instruments to include threat and use. To the extent I am modeling the decision and not the outcome, my analysis of fatal MIDs is therefore suggests useful context and limitations to my analysis. Certain factors influence threats and “cheap talk” that may or may not impact the actual implementation of policies. Increased trade interdependence between shallow agreement members, for example, appears to result in more bluster and threat, but not necessarily more action by states. In contrast, FDI dependence between shallow agreement members results in both bluster and action. Likewise, asymmetry between deep agreement members may reduce overall incidents, but makes it more likely those incidents escalate to violence. These are important considerations even if they are not necessarily appropriate for my broader research design.

Perhaps as important as providing context, however, are the practical implications for scholarly and policy work. It is interesting to note, for example, that FDI dependence promotes both the threat and use of force between shallow agreement members. This suggests a truly interesting and robust puzzle that contradicts extant literature. Likewise, the interplay of threats and actual use of violence between deep agreement members is interesting. Some economic relationships do not influence the overall rate of disputes, but might make those disputes more or less bloody in the end. On the scholarly side, it is important to give effort to the conditional nature of these effects and determine the circumstances under which conflict occurs and how it escalates. On the policy side, it is perhaps more important to understand when and under what circumstances violence occurs compared to how decisions are made. Future research in these areas is warranted.

A.1.3 Disaggregating Agreements

In Chapter 4, I discussed the coding of economic agreements according to a five-tier scale. For use in my statistical analysis, however, I collapse the five tier scale into two dichotomous variables capturing shallow and deep agreements. I do this for several reasons. First, there are strong reasons to believe a threshold effect exists with respect to economic agreements. Partial scope agreements (PSAs) and free trade areas (FTAs) are qualitatively different from customs unions, common markets, and economic unions because they deal exclusively with intra-agreement dynamics. They remove barriers to trade between members without addressing the external world beyond the agreement. In other words, only negative cooperation is necessary in the sense that removing obstacles is the limits of collaboration. Deep agreements, on the other hand, go beyond PSAs and FTAs by requiring cooperation vis-à-vis the external world. All deep agreements require a common external tariff. Hence, member states must actively coordinate broader trade policy. This suggests a clear threshold of cooperation above and below which we might expect different outcomes.

Second, there exists a degree of conceptual slippage with respect to economic agreements. Drawing the line between shallow and deep is easy given the aforementioned common external tariff requirement. Distinguishing common markets from customs or economic unions is more challenging, as it is difficult to distinguish when “free movement of labor” is truly achieved. Likewise, the standard for most economic unions (and my coding) is a common market with the addition of a common currency, yet it can be argued that many agreements possess a common currency without the free movement of labor. The distinction between shallow and deep, therefore, may

actually be more informative and accurate than between common markets and economic unions.

It is still empirically interesting and important, however, to evaluate the differences between different, more specifically defined agreement types.³⁰ Consequently, I conducted the same statistical analysis from Chapter 5 (basic logit specifications) using the full five-tier classification of economic agreements in separate models. First, however, consider the distribution of MIDs by agreement type given the disaggregated typology. Figure C.1 depicts the relative frequency of MID initiation broken down by agreement type. For dyads without an agreement, there are 443 MIDs for a frequency of 0.27%. PSAs and FTAs experienced MIDs at a rate of 0.60% and 0.80% respectively. Although customs unions (CU) and common markets (CM) have MIDs at higher rates, 1.27% and 1.39% respectively, there are only 23 and 7 occurrences respectively. Likewise, economic unions (EU) have a frequency of 0.58%, but only 2 instances of MIDs. For common markets, all MIDs are related to the East African Community and the actions of Uganda, Kenya, and Tanzania. For the economic unions, both MIDs involve the Economic Community of Central African States (ECCAS), and specifically the Central African Republic, Cameroon, and Chad. Here the conceptual difficulties are evident. The ECCAS has a customs union and a common currency in the central Africa franc, but labor movement is suspect. The overall point is simply that relatively few agreements achieve common market or economic union status, thereby

³⁰ I also created an ordinal variable scaled 1 to 5 (shallow to deep, PSA to EU) according to the five levels of integration for analysis. The results show that each increase in agreement level decreases MID initiation. In addition, the interactions with asymmetry and intra-agreement trade reduce MIDs. FDI dependence interacted with agreements increases conflict. These results are generally consistent with my analysis, but are largely driven by shallow agreements given they possess the majority of observed agreements.

reducing the number of unique cross-sectional units drastically. With the reduction in cross-sectional units is a proportional decrease in observed MIDs, which potentially complicates statistical analysis. The infrequency of MIDs, an already uncommon event, in deep agreements means caution should be taken in analyzing these results.

Table C.3 contains the logit results for shallow, PSA, and FTA agreements. The shallow agreement results are reproduced from Chapter 5 for convenience and comparison. First, note the similarity in estimates for my primary explanatory variables between the PSA and FTA models. The agreement variable, indicating joint membership in a PSA or FTA, is negative and significant such that membership reduces militarized conflict. The interaction with FDI dependence, however, is positive and significant. Dyads with a PSA or FTA are more likely to experience a MID as their dependence on FDI increases. Both these results are consistent with the pooled shallow agreement model and suggest relatively robust findings.

The remaining variables deviate from the pooled shallow agreement model. Trade asymmetry, interdependence, and intra-agreement trade do not influence MID initiation between members of a PSA or FTA. The difference in statistical significance between the pooled and disaggregated models suggests a threshold effect is indeed in effect. States that cooperate to lower trade barriers (and avoid deeper cooperation) experience pacifying influences from asymmetry and intra-agreement trade, but may exacerbate conflict as trade interdependence increases. These effects are a consequence of cooperation on trade and not necessarily the degree of cooperation. Consequently, when shallow agreements are broken out the effect is not immediately evident.

Table C.4 displays the deep agreement results. The results from Chapter 5 for the pooled model are again included for comparison. The results of the disaggregated models are less consistent with the pooled deep agreements model. First, in the pooled model, trade asymmetry and intra-agreement trade both reduce MIDs between deep agreement members. However, in the disaggregated models, asymmetry fails to achieve statistical significance. This again suggests a threshold effect. Cooperation vis-à-vis external tariffs triggers the influence of asymmetry, which then washes out once disaggregated. This effect might reflect animosity between asymmetric members. Strong, economically powerful states in an agreement may force self-serving external tariffs on junior partners, thereby exacerbating asymmetries and dependence. Second, intra-agreement trade achieves significance only in the economic union model. This might suggest unions are the primary driver behind the influence of intra-agreement trade in the pooled deep agreement model.

Third, despite failing to achieve statistical significance in the pooled deep agreements specification, the interaction between agreements and FDI dependence is statistically significant and positive in both the customs and economic union models. The lack of significance in the pooled model suggests the relatively strong influence of common markets, for which no primary variables achieves statistical significance. It may also simply reflect the paucity of dyads that share membership in economic unions. It is also noteworthy that four of the five agreement types indicate FDI dependence increases conflict. Fourth, the agreement variable in the customs union model is negative and significant. This lends credence to the presence of threshold effects, as it is the institutional arrangement of an external tariff that the agreement variable captures.

Finally, it is noteworthy that none of my explanatory variables achieve significance in the common market model. Again, this may reflect the relatively small number of states sharing membership in such agreements.

The results of the disaggregated agreement models suggest several points for my broader analysis. First, differences between the pooled and disaggregated models suggest the role of threshold effects in conflict between agreement members. The effects of asymmetry, interdependence, and intra-agreement trade are only evident if PSAs and FTAs are considered jointly in a pooled variable. I believe this is an appropriate approach, as the two agreement types represent fundamentally similar institutional frameworks. Cooperation on trade, but not external tariffs, is the key component to identifying the influence of these particular economic relationships. Likewise, asymmetry and intra-agreement trade are only influential in the pooled deep agreement model, suggesting the common external tariff is key to recognizing these effects. Second, the disaggregated results bolster some of the key findings in my analysis. In particular, shallow agreements reduces MID initiation while FDI dependence exacerbates it in almost all models. This provides strong supporting evidence for one of the more counterintuitive findings in my analysis. Overall, these results add richness to my overall theoretical and empirical story without necessarily refuting or contradicting my primary statistical analysis.

A.2 Extra-Agreement Conflict

Chapter 6 analyzes conflict between members of economic agreements and non-members states using basic logit, imputed logit, and strategic probit analyses. In this section, I elaborate on my analysis of extra-agreement conflict presented in Chapter by:

limiting the dependent variable to fatal MID's only and using Heckman selection models to address selection into different agreements.³¹

A.2.1 Fatal Militarized Interstate Disputes

In section 1.2 of this appendix, I discuss the use of all MID's in my primary statistical analysis of intra-agreement conflict. Because Chapter 6 also deals with the decision between military force and economic sanctions, the all MID's approach is appropriate for my primary statistical tests. I offer an analysis of fatal MID's here to embellish on the results of Chapter 6 and offer greater insight into the influence of economic agreements.

Table C.5 contains the results of the fatal MID's model for extra-agreement conflict. None of my primary explanatory variables achieve statistical significance in either the one or opposing agreement model. Hence, economic relationships neither increase nor decrease the likelihood of fatal militarized force. This can be viewed two ways. First, economic relationships between agreement members do not exacerbate tensions and increase conflict. Hence, little support exists for the notion that relative gains concerns as they relate to trade between members and non-members increase violent conflict. Second, economic relationships fail to restrain violent conflict between members and non-members. In this way, the pacifying influence of economic interaction that much of the literature finds fails to function with members and non-members. To be sure, however, none of the economic variables achieve statistical significance in either

³¹ In addition to the tests in this appendix, I also conducted several others that I do not report. These include rare-events logits, transformations of the primary variables (i.e., logs), simultaneous equations, and samples using only politically relevant dyads. The results of these tests were identical to those included in Chapter 6, and are therefore omitted for space and clarity.

model. The overall impact of these results for my analysis, therefore, is negligible given my justification for the use of the all MIDs design.

A.2.2 Selection Into Separate Agreements

In Chapter 5, I address the tendency for states with strained political relations to avoid cooperation and economic agreements in my analysis of intra-agreement conflict. The same logic holds for my analysis of extra-agreement conflict. Specifically, states with a propensity for conflict are unlikely to join the same economic agreement and, indeed, may form other economic agreements to isolate potential enemies. Given that states may select out of joint economic agreement membership, I offer a series of Heckman selection models accounting for the potential selection effect. The selection criterion is creation of a one or opposing agreement dyad. That is, dyads either select into a situation where one only state is in an agreement or both form different agreements. Predictors for the selection equation are identical to those used in the selection models for intra-agreement conflict - interdependence, asymmetry, alliances, contiguity, democracy, GDP, major power status, peace years and WTO membership, inter-capital distance, common language, the geometric mean of logged population, political affinity, and the cumulative total of dyadic MIDs since 1950. The outcome equation includes all my primary explanatory variables as well as allies, contiguity, capabilities, democracy, GDP, IGO membership, major power status, WTO membership, and both spatial and temporal controls.

Table C.6 contains the selection model results for MID initiation. The outcome equation is show in the top half of the table. Overall, the results are identical to those of the basic logit model presented in Chapter 6. None of my primary explanatory variables

achieve statistical significance in the one agreement model. With respect to opposing dyads, however, trade interdependence tends to reduce the occurrence of MIDs. Again, a curvilinear relationship is evident with trade diversion. The opposing agreement dyads least likely to engage in conflict are those with high degrees of trade creation or diversion. Dyads with relatively neutral values of trade diversion are the most conflict prone. Finally, the ρ statistic for the opposing agreement model is statistically significant, indicating a selection effect may indeed be taking place. The results of the selection model are identical to those of the basic logit, however, suggest my primary analysis using basic logit is likely acceptable.

The results of the selection model for economic sanctions is contained in Table C.7. The outcome equation is show in the top half of the table. Again, the results of the outcome equation are identical to those of the basic logit. A curvilinear relationship exists between one agreement dyads and trade diversion. Dyads with high trade creation and diversion are the least likely to experience a sanction while neutral values are the most likely. For dyads with membership in separate economic agreements, trade asymmetry tends to increase the likelihood of observing economic sanctions. Both ρ statistics are statistically significant for the one and opposing agreements model. While this might imply basic logit is biased by selection into different agreements, the similarity of results suggests the similar basic logit specification is preferable.

Finally, while it is not the focus of my analysis, the selection equation predicting exclusion from joint economic agreement membership is interesting. Overall, the results of the one and opposing agreement selection equations (both sanctions and MID specifications) are nearly identical. First, trade asymmetry increases the likelihood of

exclusion. This may reflect the disadvantaged partner attempting to form agreements to break its trade dependence on one state through preferential arrangements. Second, trade interdependence increases the likelihood of one agreement dyads, but has no relationship with opposing agreement dyads. Again, this may reflect one state in the dyad attempting to diversify trade partners by forming agreements.

Third, several variables predict both one and opposing agreement dyads. Interestingly, geographic contiguity and major power status increase exclusion from agreements. Contiguity may predict exclusion because geographically proximate partners may not need agreements to generate trade. Close neighbors, furthermore, are those most likely to be adversaries. The result of the major powers variable is more logical, as powerful states likely form their own exclusionary trade blocs. GDP and population also predict exclusion, which likely reflects the same logic as major powers. Large states likely form their own exclusionary blocs. Fourth, two variables – affinity and WTO membership – decrease the likelihood of exclusion. Both make sense, as states with similar policies and global trade agreement membership are more likely to join the same agreement.

The remaining variables are mixed in nature. First, alliances positively predict one agreement dyads, but negatively predict opposing agreement dyads. In other words, dyads that are allies are somewhat more likely to have only one agreement, but less likely to form separate agreements. This suggests they either form joint agreements or avoid membership rather than divorce security and economic interests. Second, the more democratic the dyad, the less likely they are to be one agreement dyads. They are more likely, however to be in opposing agreements. This may simply reflect the propensity of

democracies to form organizations and institutions. Third, inter-capital distance only influences opposing agreement dyads (negatively). Finally, the total number of conflicts between dyads negatively predicts one agreement dyads but positively predicts opposing agreements. This indicates that states with past conflict tend to form different economic blocs. Given that one agreement dyads are less likely, it also points to the domino theory of regionalism; if a state's competitor forms an agreement, that state is likely to form its own agreement.

Table C.1: Agreements and Intra-Agreement Conflict, Pooled Coercion

	Shallow Agreements		Deep Agreements	
	Coefficient	Standard Error	Coefficient	Standard Error
Agreement	-14.798***	2.804	-0.566	3.844
Agreement*Asymmetry	-12.815**	3.275	-52.092**	19.891
Agreement*Interdependence	27.913***	10.596	-2.994	16.637
Agreement*FDI	14.779***	2.767	0.946	3.741
Intra-Agreement Trade	-7.201***	1.890	-2.615	1.989
Asymmetry	3.416***	1.027	1.949	1.418
Interdependence	-23.759***	6.509	-21.975***	6.528
FDI	-3.988**	1.432	3.005	2.519
Alliance	0.075	0.112	0.088	0.110
Contiguity	3.361***	0.122	3.361***	0.122
Capabilities	0.087*	0.038	0.086*	0.038
Democracy	-0.051***	0.009	-0.052***	0.009
GDP	0.235***	0.040	0.235***	0.042
IGOs	0.023***	0.005	0.024***	0.005
Major Power	1.153***	0.149	1.112***	0.152
WTO	-0.317**	0.107	-0.309**	0.106
Spatial Lag (Alliances)	-10.897	16.572	-11.268	16.555
Spatial Lag (Contiguity)	35.239***	7.639	35.789***	7.475
Constant	-6.518***	1.601	-13.584***	2.759
N	182,708		182,708	
λ^2	3,596.64***		3,696.13***	
Pseudo-R ²	0.347		0.344	
Log Pseudolikelihood	-2,748.87		-2,761.70	

*The dependent variable is the use of either a Militarized Interstate Disputes (MIDs) or threat or imposition of economic sanctions. The "agreement" variable indicates dyads share membership in either a shallow or deep economic agreement. Temporal control variables (peace years³) omitted for space. Robust standard errors in parentheses. * $p < .05$ ** $p < .01$ *** $p < .001$*

Table C.2: Agreements and Intra-Agreement Conflict, Fatal MIDs

	Shallow Agreements		Deep Agreements	
	Coefficient	Standard Error	Coefficient	Standard Error
Agreement	-24.303**	8.017	35.319***	6.942
Agreement* Asymmetry	-25.963	25.020	402.032***	28.231
Agreement* Interdependence	17.809	48.046	-637.868*	258.180
Agreement* FDI	24.156**	7.897	-34.137***	6.865
Intra-Agreement Trade	2.156	3.290	3.081	2.601
Asymmetry	-3.450	16.748	-15.901	16.958
Interdependence	-11.418	35.786	3.616	25.797
FDI	-15.328*	6.794	5.419	5.084
Alliance	0.017	0.357	0.109	0.362
Contiguity	5.155***	0.696	5.249***	0.710
Capabilities	0.152	0.136	0.174	0.129
Democracy	-0.050	0.036	-0.052	0.035
GDP	0.144	0.137	0.189	0.148
IGOs	0.008	0.018	0.007	0.018
Major Power	0.579	0.826	0.613	0.753
WTO	0.343	0.428	0.347	0.416
Spatial Lag (Alliances)	-9.879	32.228	-7.698	31.869
Spatial Lag (Contiguity)	45.513	33.310	42.663	32.749
Constant	4.143	7.823	-17.881	6.530
N	182,621		182,708	

*The dependent variable is Fatal Militarized Interstate Disputes (Fatal MIDs). The "agreement" variable indicates dyads that share membership in either a shallow or deep economic agreement. Robust standard errors in parentheses. Temporal control variables (peace years³) omitted for space * $p < .05$ ** $p < .01$ *** $p < .001$*

Table C.3: Agreements and Intra-Agreement Conflict, Disaggregated Shallow Agreements

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	Shallow Agreements (FTA and PTA)		PSA		FTA	
	Coefficient	Standard Error	Coefficient	Standard Error	Coefficient	Standard Error
Agreement	-14.935***	2.710	-12.809***	2.939	-16.797***	4.339
Agreement*Asymmetry	-13.14***	3.359	-2.582	4.286	-7.250	4.570
Agreement*Interdependence	25.676*	10.194	12.641	14.296	0.688	18.224
Agreement*FDI	14.902***	2.667	12.668***	2.891	16.098***	4.253
Intra-Agreement Trade	-8.842***	1.882	-3.647	2.490	-0.954	3.262
Asymmetry	2.627**	0.986	2.168	1.316	1.921	1.175
Interdependence	-17.307**	6.251	-17.637*	7.229	-11.309	7.148
FDI	-5.126***	0.921	-5.333***	1.069	-5.963***	0.906
Alliance	0.243*	0.115	0.108	0.127	0.184	0.140
Contiguity	3.111***	0.130	3.072***	0.135	3.001***	0.148
Capabilities	0.125***	0.038	0.118**	0.041	0.121**	0.043
Democracy	-0.053***	0.010	-0.063***	0.009	-0.061***	0.010
GDP	0.183***	0.040	0.177***	0.044	0.198***	0.048
IGOs	0.018***	0.005	0.035***	0.006	0.027***	0.006
Major Power	1.366***	0.156	1.442***	0.173	1.467***	0.186
WTO	-0.126	0.109	-0.180	0.116	-0.123	0.128
Spatial Lag (Alliances)	-9.41	15.676	-4.467	14.097	-9.271	16.642
Spatial Lag (Contiguity)	34.655***	8.185	31.205***	9.040	31.388***	9.639
Constant	-3.715***	1.132	-3.870**	1.293	-3.519**	1.209

Table C.3: Continued

N	182,708	175,562	159,628
λ^2	3,811.54***	3,556.64***	3,020.26***
Pseudo-R ²	0.3457	0.351	0.339
Log Pseudolikelihood	-2752.54	-2,475.15	-2,152.91

*The dependent variable is the use of a Militarized Interstate Disputes (MIDs). The "agreement" variable indicates dyads that share membership in either a particular agreement (contained in the header). Robust standard errors in parentheses. Temporal control variables (peace years³) omitted for space *p < .05 ** p < .01 *** p < .001*

Table C.4: Agreements and Intra-Agreement Conflict, Disaggregated Deep Agreements

	Deep Agreements (CU, CM, and EU)		CU		CM		EU	
	Coefficient	Standard Error	Coefficient	Standard Error	Coefficient	Standard Error	Coefficient	Standard Error
Agreement	-3.827	3.870	-13.210***	3.266	196.778	223.284	-11.697	6.475
Agreement*Asymmetry	-56.429**	21.632	-43.768	24.410	-207.349	248.442	32.357	131.062
Agreement*Interdependence	6.802	16.515	-20.353	19.900	46.638	69.036	-306.060	344.747
Agreement*FDI	4.020	3.783	13.128***	3.107	-192.984	222.593	12.980*	6.140
Intra-Agreement Trade	-4.384*	2.061	-1.125	3.402	-64.022	42.139	-81.174***	13.848
Asymmetry	1.494	1.368	2.244	1.303	2.219	1.316	2.219	1.313
Interdependence	-17.557**	6.187	-17.742*	7.240	-17.478***	7.300	-17.512*	7.289
FDI	0.208	2.626	-5.462***	1.047	-5.502***	1.063	-5.479***	1.060
Alliance	0.249*	0.115	0.110	0.144	0.057	0.151	0.064	0.150
Contiguity	3.121***	0.130	3.008***	0.149	3.004***	0.152	3.010***	0.152
Capabilities	0.126***	0.038	0.128**	0.044	0.135**	0.045	0.137**	0.045
Democracy	-0.052***	0.010	-0.056***	0.011	-0.066***	0.011	-0.065***	0.011
GDP	0.175***	0.042	0.200***	0.049	0.192***	0.050	0.190***	0.049
IGOs	0.019***	0.005	0.031***	0.006	0.034***	0.006	0.034***	0.006
Major Power	1.329***	0.159	1.350***	0.191	1.478***	0.198	1.489***	0.198
WTO	-0.117	0.109	-0.153	0.131	-0.157	0.134	-0.158	0.134
Spatial Lag (Alliances)	-9.773	15.727	-5.461	15.227	-4.943	14.820	-5.607	15.206
Spatial Lag (Contiguity)	35.200***	8.036	30.846**	9.948	30.814**	10.062	31.036**	10.085
Constant	-8.934***	2.739	-4.141**	1.336	-3.982**	1.359	-3.940**	1.356

Table C.4: Continued

N	182,708	156,947	155,645	155,486
λ^2	3,884.23***	3,083.22***	2967.53***	2,945.16***
Pseudo-R ²	0.3420	0.344	0.347	0.341
Log Pseudolikelihood	-2768.06	-2,092.95	-2,018.90	-2,017.21

*The dependent variable is the use of a Militarized Interstate Disputes (MIDs). The "agreement" variable indicates dyads that share membership in either a particular agreement (contained in the header). Robust standard errors in parentheses. Temporal control variables (peace years³) omitted for space *p < .05 ** p < .01 *** p < .001*

Table C.5: Agreements and Extra-Agreement Conflict, Fatal MIDs

Shallow Agreements	One Agreement		Opposing Agreements	
	Coefficient	Standard Error	Coefficient	Standard Error
Agreement	-1753.575	1535.796	-1491.660	1220.390
Agreement*Asymmetry	-146.034	82.715	7.519	24.150
Agreement*Interdependence	87.933	119.296	-37.416	122.565
Agreement*Diversion	3640.476	3095.051	3112.217	2520.294
Agreement*Diversion2	-1887.134	1561.241	-1620.237	1300.1
Asymmetry	9.029	13.895	1.144	16.869
Interdependence	-65.295	49.194	-59.303	43.186
Trade Diversion	96.719	132.352	3.876	66.472
Trade Diversion2	-40.488	56.829	-2.374	26.894
Alliance	-0.044	0.423	0.459	0.468
Contiguity	6.387***	0.873	5.262***	0.698
Capabilities	0.515**	0.168	0.402*	0.162
Democracy	-0.052	0.042	-0.105*	0.046
GDP	0.273	0.148	0.398**	0.142
IGOs	-0.015	0.016	-0.005	0.016
Major Power	-0.068	0.834	1.264	0.859
WTO	0.506	0.441	0.848*	0.427
Spatial Lag (Alliances)	0.378	17.286	18.709	17.521
Spatial Lag (Contiguity)	57.547*	22.507	28.241	32.726
Constant	-70.379	74.695	-17.842	39.695
N	191,828		194,782	
λ^2	243.95***		478.61***	
Pseudo-R ²	0.448		0.4342	
Log Pseudolikelihood	-204.61		-224.368	

*The dependent variable is Fatal Militarized Interstate Disputes (Fatal MIDs). The "agreement" variable indicates dyads where one state is in an agreement (one agreement) or separate agreements (opposing agreements). Temporal control variables (peace years³) omitted for space Robust standard errors in parentheses. *p < .05 ** p < .01 *** p < .001*

Table C.6: Economic Agreements and External MIDs, Heckman Selection

	One Agreement		Opposing Agreements	
Militarized Interstate Disputes				
	Coefficient	Standard Error	Coefficient	Standard Error
Asymmetry	0.400	1.539	-0.070	2.035
Interdependence	-5.038	5.075	-16.702*	7.246
Trade Diversion	11.421	13.969	367.799**	117.329
Trade Diversion2	-7.663	7.458	-189.948***	59.084
Alliance	0.063	0.172	0.180*	0.088
Contiguity	1.032	0.435	0.683***	0.157
Capabilities	0.091***	0.025	0.062*	0.026
Democracy	-0.002	0.020	-0.025***	0.006
GDP	0.047	0.229	-0.032	0.041
IGOs	0.008*	0.004	0.011*	0.004
Major Power	0.133	1.066	0.136	0.171
WTO	-0.141	0.330	-0.123	0.075
Spatial Lag (Alliances)	1.243	5.925	-26.41*	11.143
Spatial Lag (Contiguity)	11.975*	5.243	8.552	5.765
Constant	-6.512	9.256	-177.514**	58.730
Exclusion from Economic Agreements				
	Coefficient	Standard Error	Coefficient	Standard Error
Asymmetry	1.419***	0.151	0.481***	0.148
Interdependence	2.188***	0.682	-0.015	0.624
Affinity	-0.056**	0.019	-0.353***	0.013
Alliance	0.103***	0.019	-0.144***	0.016
Contiguity	0.229***	0.029	0.149***	0.025
Democracy	-0.016***	0.000	0.006***	0.000
Distance	0.001	0.000	-0.000***	0.000
GDP	0.164***	0.005	0.165***	0.004
Language	0.067***	0.016	0.201***	0.013
Major Power	1.074***	0.015	0.639***	0.016
Population	0.204***	0.005	0.104***	0.005
Total Dyadic MIDs	-0.020*	0.009	0.026***	0.004
WTO	-0.378***	0.009	-0.090***	0.008
Constant	-8.050***	0.109	-6.301***	0.091

Table C.6: Continued

N	208,979	211,949
Censored	188,743	188,743
Uncensored	13,235	23,206
λ^2	596.54***	569.79***
Log Pseudolikelihood	-53208.53	-64,072.08
ρ	0.040	15.450***

*The dependent variable is the initiation of a Militarized Interstate Dispute (MIDs). The "agreement" variable indicates dyads where one state is in an agreement (one agreement) or separate agreements (opposing agreements). Temporal control variables (peace years³) omitted for space. * $p < .05$ ** $p < .01$ *** $p < .001$*

Table C.7: Economic Agreements and External Sanctions, Heckman Selection

	One Agreement		Opposing Agreements	
Economic Sanctions				
	Coefficient	Standard Error	Coefficient	Standard Error
Asymmetry	1.385	1.805	2.817*	1.266
Interdependence	2.373	6.102	-10.501	10.066
Trade Diversion	153.133*	76.648	17.191	14.387
Trade Diversion2	-77.134*	38.318	-6.677	7.067
Alliance	0.186	0.120	0.081	0.107
Contiguity	-0.042	0.188	-0.636*	0.274
Capabilities	-0.003	0.033	0.022	0.021
Democracy	0.000	0.009	-0.018**	0.006
GDP	0.126	0.093	0.014	0.053
IGOs	-0.005	0.004	-0.000	0.004
Major Power	-0.642**	0.228	-0.216*	0.110
WTO	0.394***	0.095	0.155*	0.067
Spatial Lag (Alliances)	-21.158	14.128	-40.631	25.350
Spatial Lag (Contiguity)	-5.863	10.505	18.000***	3.469
Constant	-79.720*	39.346	-11.287	7.804
Exclusion from Economic Agreements				
	Coefficient	Standard Error	Coefficient	Standard Error
Asymmetry	1.414***	0.150	0.477***	0.148
Interdependence	2.219***	0.680	0.039	0.624
Affinity	-0.060***	0.016	-0.357***	0.012
Alliance	0.104***	0.019	-0.142***	0.016
Contiguity	0.227***	0.028	0.148***	0.025
Democracy	-0.016***	0.000	0.006***	0.000
Distance	0.001	0.000	-0.000***	0.000
GDP	0.164***	0.004	0.164***	0.004
Language	0.067***	0.016	0.202***	0.013
Major Power	1.073***	0.014	0.637***	0.016
Population	0.204***	0.005	0.105***	0.005
Total Dyadic MIDs	-0.019***	0.005	0.026***	0.004
WTO	-0.378***	0.009	-0.091***	0.008
Constant	-8.043***	0.101	-6.301***	0.091

Table C.7: Continued

N	208,979	211,949
Censored	188,743	188,743
Uncensored	13,235	23,206
λ^2	202.74***	112.67***
Log Pseudolikelihood	-52,918.78	-63,760.15
ρ	10.30**	35.91***

*The dependent variable is the threat or imposition of an economic sanction. The "agreement" variable indicates dyads where one state is in an agreement (one agreement) or separate agreements (opposing agreements). Temporal control variables (peace years³) omitted for space. * $p < .05$ ** $p < .01$ *** $p < .001$*

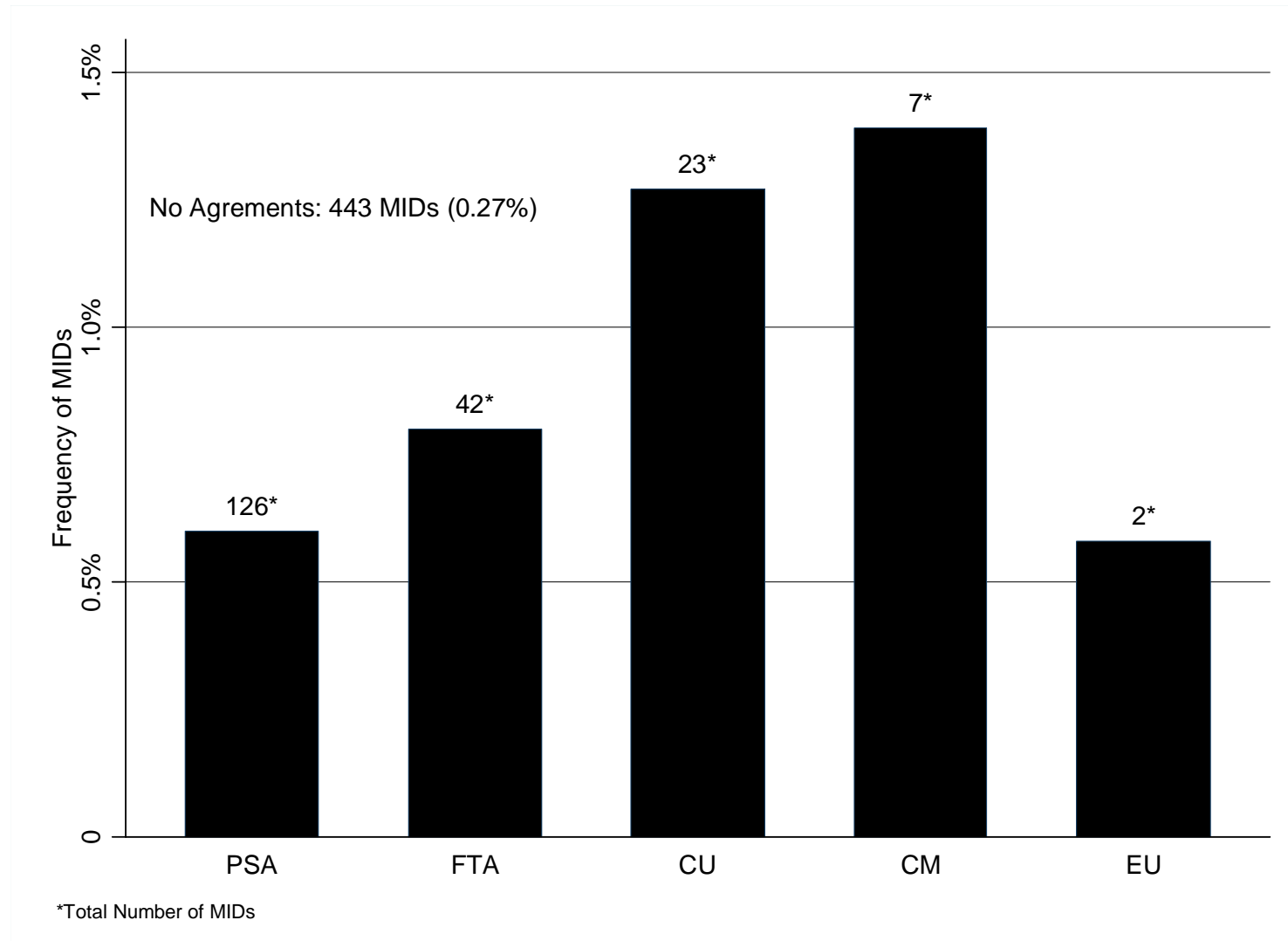


Figure C.1: MIDIs by Agreement Type