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# The deterrent effects of economic integration

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**Abstract**

Economic interdependence and international conflict studies have traditionally focused on the role of bilateral trade on direct deterrence, mostly omitting its indirect effects on third-party states. While scholars in the extended deterrence literature have examined the role of defender–target trade in deterring aggressors, most empirical research has remained limited to immediate deterrence and neglected general deterrence. This article synthesizes these literatures and goes beyond the dyad-level analysis in trade–conflict studies by focusing on the deterrent effects of trade. I claim that trade ties between the defender and target are not sufficient for extended general deterrence. This is mainly because international trade by itself is a poor indicator of the extent to which the target is an economically important friend of the defender, worth defending against aggressors. Empirical analysis of militarized disputes between rival states in the post-1945 period supports this point and shows that extended deterrence success is most likely in cases where the defender and target are economically integrated through regional trade institutions as well as conducting heavy trade. Economically minded defenders can successfully generate credible signals of resolve if they have institutional ties with their important trade partners.

**Keywords**

deterrence, economic interdependence, militarized dispute, regional integration arrangements, rivalry, trade

## Introduction

In most quantitative studies of interstate conflict, scholars argue that states consider several factors that can affect the prospects of a successful outcome before they initiate a conflict against their opponent. One of the factors that play into attackers' decision calculus is their predictions of how third-party actors would behave in the event of conflict. Attackers observe 'significant' states related in some way to the target and try to assess the chances of prevailing against their adversary in a multilateral confrontation. Intervention by a third-party state that has political and economic interests in the target increases the uncertainty of conflict outcome, and anticipation of intervention can act as a powerful deterrent.

International conflict and extended deterrence literatures have made few attempts to achieve a fruitful interaction between the two, despite the similarity of their subject matter: 'The factors that presumably contribute to deterrence failure can also be considered as the same factors leading to crisis escalation, and ultimately, the outbreak of war' (Danilovic, 2002: 9). Studies linking conflict initiation to third-party intervention and its deterrent effects have mainly focused on limited explanations, such as the target's alliance ties with third parties, to understand the strategic setting in which potential attackers make their decisions.

In existing research, the extended deterrent properties of international trade have remained largely unknown despite extensive research on its direct deterrent effect (e.g. Barbieri, 1996, 2002; Hegre, 2004; Gartzke, Li & Boehmer, 2001; Gartzke & Li, 2003; Gartzke, 2007; Gowa & Mansfield, 1993; Keshk, Pollins & Reuveny, 2004; Mansfield & Pevehouse, 2000; McDonald, 2004; Oneal & Russett, 1997, 1999; Pollins, 1989).[1] As Dorussen & Ward (2010) argue, the dyadic design in economic peace research ignores

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[1] Mastanduno (1998) presents an overview of the literature at the crossroads of economics and international security. Recent research overcomes some of the problems associated with this exclusive emphasis on conflict initiation by applying the economic peace framework to balancing behavior and military intervention. Papayoanou's work (1999) examines the success of balancing by status quo powers against revisionist states by looking at their economic ties with the challengers. Fordham (2007) explains US intervention in World War I with the wartime export boom that prompted policymakers to intervene on the side of the Allied Powers. Similarly, Aydin (2008) shows that economically interconnected third parties militarily intervene and take sides with their trade partners in militarized disputes, which goes beyond the narrow conception of economics and security oriented towards the 'does trade inhibit war?' question.

the indirect connections between states through trade which involves third parties in the same trade network; these connections can act as intermediaries in others' conflicts.[2] The role of trade in deterring aggressors has largely been explored in the extended immediate deterrence literature (e.g. Danilovic, 2001, 2002; Huth, 1988; Huth & Russett, 1984; Signorino & Tarar, 2006). Though this body of work provided mixed evidence, it presents a useful departure point to consider the relationship of trade and extended deterrence.

I integrate these different theoretical areas to understand the role of trade in extended general deterrence. I analyze whether a target's trade ties have extended general deterrent properties and inform attackers about the likelihood of intervention by third-party states in a future conflict. The rational deterrence logic would suggest that attackers consider targets' trade value to other states before challenging them. Yet, the general deterrent effect of international trade is much more nuanced compared to its role in immediate deterrence. Rather controversially, I claim that trade by itself is a poor indicator of a defender's willingness to defend and fails to adequately inform the attacker about the likelihood of a multilateral confrontation and its costs. Trade volume, as frequently adopted by deterrence scholars, does not solve the strategic problems that attackers face in general deterrence. I argue that a target's trade ties to potential defenders through economic institutions capture more than just the political implications of the current stream of economic benefits. Institutional ties inform the attacker that the defender has extensive economic interests beyond trade and future trade expectations in the target worth defending against international aggression.

This argument holds especially for trade through regional integration arrangements, which scholars have found to be closely associated with zones of war and peace. International trade institutions such as GATT/WTO are highly inclusive. Yet, regional arrangements are small groups that create club goods for their members, increasing the opportunity costs of disrupted economic activity (Hafner-Burton & Montgomery, 2006). Regional economic institutions also cover a wide range of issues beyond trade: the defender cooperates with the target in a number of economic areas which increases the value of the target and aggravates the costs of conflict on regional partners (Haftel, 2007). Third, regional partners develop trade expectations for the future which cannot be adequately captured by the sheer volume of bilateral trade (Mansfield, Pevehouse & Bearce, 1999/2000). Therefore, high economic stakes that states have in the continuation and growth of economic activity in the context of economic regionalism lead to a security community in which states develop a genuine interest in not only keeping peace with each other but also defending their relationship against outside aggressors. Along with their role in dispute settlement between member states, the shadow of regional arrangements discourages aggressors from targeting institutionally connected states.

## Trade, information, and deterrence success

Strategic treatments of international conflict convincingly argue that conflict is a product of uncertainty about the relative power and resolve of the opponent. Some scholars also modeled the political relations of economically interdependent states in this strategic setting. The rationalist explanations of trade and conflict argued that trade reveals private information about one's adversary due to the mutual interest of the parties in the continuity of economic exchange (Gartzke, Li & Boehmer, 2001; Gartzke & Li, 2003; Morrow, 1999; Reed, 2003). A broader application of this framework is to go beyond the direct effects of trade and examine whether the political relationship between trading states also feeds into the foreign policy choices that other states make. If attackers are making use of the information about states' interest in the continuation of trade, they would avoid initiating conflict against trade partners that can flock together to protect their economic stakes when one comes under attack.

The idea that attackers strategically target states that are least likely to get outside help and avoid multilateral confrontations has been subjected to limited empirical scrutiny with a heavy emphasis on military alliances (Bueno de Mesquita, 1981; Gartner & Siverson, 1996; Leeds, 2003; Smith, 1996).[3] This type of deterrence mechanism is based on the rationale that political ties between a potential target and defender are informative to the attacker about defender's preferences. Such information effects, mostly studied for alliances, are also relevant to economic interdependence: 'alliances affect the occurrence of conflict', and so do economic ties (Smith, 1996: 16). An attacker's strategy can be modeled as contingent on the target's economic ties to third parties, drawing from the rationalist explanations of trade and conflict,

### *Willingness to defend: A two-way street*

Several important studies in the extended deterrence literature clarify the distinction between 'general' and 'immediate' deterrence. For instance, Morgan's (1977: 28) leading work provides a description that is commonly adopted by the deterrence scholarship: '*Immediate deterrence* concerns the relationship between opposing states where at least one side is seriously considering an attack while the other is mounting a threat of retaliation in order to prevent it. *General deterrence* relates to opponents who maintain armed forces to regulate their relationship even though neither is anywhere near mounting an attack' (italics original). In their study of general deterrence between rival states, Huth & Russett (1993: 61) describe general deterrence as characterizing 'a *situation* in which the

[2] Also see Maoz (2009) for a criticism of the interdependence literature which until now has focused heavily on dyadic interdependence.

[3] In a formal analysis, Werner (2000) shows that attackers scale their demands on the target in such a way that they avoid a multilateral confrontation.

adversaries are neither using military force nor actively threatening to use it' (italics original).

Extended general deterrence, which this study focuses on, refers to cases in which the defender seeks to prevent a potential attack on another state (target). An important element of extended general deterrence is the economic value of the target to third-party defenders. Research on extended immediate deterrence has argued that the extent of the target's foreign trade with the defender eliminates some uncertainty about the probability of intervention in a future conflict and clarifies defenders' motivations and preferences. For instance, Huth & Russett (1984) find that immediate deterrence attempts by a defender are more likely to succeed if the defender has important trade interests in the target. However, Huth (1988) later shows that when the defender's preferences are directly accounted for through its bargaining behavior, crude measures such as trade are not significantly related to deterrence success.

According to Fearon (1994), this mixed record can be explained by the self-selection mechanism where an attacker selects itself into a crisis situation based on its beliefs about the future behavior of the target's friends. Ex ante measures of the defender's interest, such as trade, are informative to the attacker in extended general deterrence, but attackers that challenge the target despite the defender's expected willingness to defend and escalate to the immediate deterrence stage are too resolute to be deterred by the defender's resolve. Therefore, trade would not have a significant impact on the attacker in the immediate deterrence stage. This leads to the implication that 'rationalist hypotheses that are true for general deterrence may be exactly reversed for immediate deterrence' (Fearon, 1994: 245).

Based on Fearon's framework, trade should have general deterrent properties, unlike its ambiguous role in immediate deterrence. By revealing the defender's preferences to the attacker, trade works as a powerful deterrence mechanism. Recognizing the pathologies of conflict on its economic interests, the defender prefers the status quo. In case the attacker initiates, the defender prefers to take action to prevent the disruption of economic exchange. Having a more reliable estimate of the defender's preferences via trade, the attacker prefers not to challenge the target in the first place.

> *H1 (total trade)*: The likelihood of extended general deterrence success increases with the trade volume between the potential target and third-party defenders.

Yet, a closer look at the information effects of trade presents a two-way street in extended general deterrence. In immediate deterrence, the defender has revealed its interests in the target by 'mounting a threat of retaliation' to prevent the attacker from disturbing the status quo (Morgan, 1977). Observable indicators of the defender's interest in the target are important for the attacker to judge the credibility of the extended threat. The dynamics of a general deterrence situation are different since the attacker first has to figure out the extent to which states with political and economic ties to a particular target are willing to expend their resources to defend it. Given that none of the potential defenders has taken any action yet or exchanged threats and counter-threats with the attacker to prevent the use of force, the attacker has to rely on its beliefs about defenders' willingness. Trade by itself is a noisy indicator of the willingness to defend in general deterrence and does not solve the strategic problems that potential attackers face in selecting targets based on their potential defenders. Alternative mechanisms operating through the uncertainty-reducing effects of trade lead to ambiguous effects of the target's economic ties on the attacker's decisions.

Volatile relations of trade partners may illustrate the ambiguity associated with trade ties as a deterrence mechanism. Most recent studies find that when broader aspects of economic integration are accounted for in empirical analyses, trade fails to produce the uncertainty-reducing effects that rationalist explanations of interdependence and conflict have argued for (Gartzke, Li & Boehmer, 2001; Gartzke & Li, 2003; Gartzke, 2007; Mansfield & Pevehouse, 2000; McDonald, 2004).[4] Attempts to revise the concept of interdependence in economic peace research, along with the mixed empirical results on trade and conflict, are illustrative of the concerns associated with trade as an accurate indicator of economic integration.

Real-life examples support this point. Major powers have frequently intervened in their sphere of influence to protect their investments first and foremost instead of protecting governments with which they were economically related (e.g. Krasner, 1978; Schlesinger & Kinzer, 2005). There are many other situations where important trade partners would have no interest in defending a target. Oil-producing states are high on this list; Saudi Arabia and Sudan are highly unlikely to defend their partners against aggressors. Therefore, states may trade out of logistical reasons, but it is not clear from the sheer volume of trade whether they are sufficiently integrated in economic terms and build a common security interest strong enough to expend their resources so as to shield each other from third-party aggressors.

The skepticism about whether international trade can actually generate credible signals of resolve is much more relevant in extended general deterrence. The strategic problem that the attacker faces in an extended general deterrence situation is identifying the belief systems of third-party states (Schelling, 1980). Given that 'general deterrence ... characterizes a *situation* in which the adversaries are neither using military force nor actively threatening to use it', the attacker first has to identify whether third-parties are actually willing to defend this target and change the course of events in a future conflict

[4] Previous studies also showed that trading states are more likely to fight (e.g. Barbieri, 1996, 2002) or trade is not associated with conflict (Danilovic & Clare, 2007; Lektzian & Sprecher, 2007; Ward, Siverson & Cao, 2007). Among several other studies, Crescenzi (2007), Oneal & Russett (1997, 1999), and Oneal, Russett & Berbaum (2003) find statistically significant effects.

(Huth & Russett, 1993: 61, italics original). Attackers can be expected to look for clear and strong signals of a defender's interest in the target when it comes to general deterrence. In judging defenders' economic stakes, the volume of trade that has been frequently adopted by immediate deterrence scholars might fail to adequately reveal willing defenders with a genuine interest in the target in a general deterrence situation. Most partners of a target would not be willing to become a third-party in the hostility especially if it is unclear whether the future conflict will seriously threaten economic interests. Hence, trade should not be sufficiently related to deterrence success, thus failing to solve the strategic problems attackers face in extended deterrence.

*Regional economic institutions and extended general deterrence*

When does trade lead to a security community or webs of economic integration? When do states regard each other as economically important friends worth defending in times of conflict rather than ganging up against? The role of institutions in pacifying states has been debated in the Kantian peace research program. Several studies present empirical evidence that institutionalism is a key feature of international and regional peace and show that institutions are effective in regulating state behavior, facilitating communication and commitment, and creating common security interests through a variety of other functions.[5]

Some scholars have examined whether and how institutions strengthen economic ties and exert an indirect impact on international conflict through trade. Russett, Oneal & Davis (1998: 447) emphasize that 'joint democracy and economic interdependence, the other legs of the Kantian tripod, reduce the incidence of disputes; IGOs could have important indirect effects by supporting and promoting democracy and interdependence ... the evidence for IGOs as agents of democracy and interdependence is largely unsystematic, the connection is nevertheless widely asserted'. Similarly, Maoz (2009: 224) writes that 'economic interdependence may be reinforced or offset by strategic or institutional ties'. Institutions, especially economic ones, should reinforce trade but would they credibly signal to outside aggressors that their members have a genuine interest in defending each other?

I specifically focus on regional economic institutions (regional integration arrangements, RIAs) and argue that there are important characteristics of these organizations that should result in credible signals of resolve to defend regional partners. Most important among these is the size of the institution. While international commercial institutions play a significant role in increasing trade (Goldstein, Rivers & Tomz, 2007), their role in reducing conflict is unclear. Since institutions such as GATT/WTO have inclusive membership, economic interests are diffused among a large number of states and are less likely to be informative about members' incentives to defend each other. As Hafner-Burton & Montgomery (2006) suggest, members of large groups are more likely to be aggressive against each other because hostility does not necessarily disrupt group functions. Yet, members of a small institution have stronger ties with each other. Economic regionalism can be considered in this framework. States grant privileged access to each other's markets through regional economic institutions, which clearly increases the stakes for economically minded defenders.[6] Considering the economic gains from these arrangements, states are therefore more vulnerable to disruptions of economic exchange with their institutional partners (Mansfield & Milner, 1999). For instance, Mansfield & Pevehouse (2000: 803) argue that 'whether unfettered commerce promotes peace hinges largely on the institutional setting (or lack thereof) in which trade is conducted'. Emphasizing the role of preferential trade agreements (PTA) in regulating commerce and pacifying states, Mansfield & Pevehouse (2000: 776) present strong evidence that 'the combination of PTA membership and a high level of trade is quite likely to discourage belligerence'.

Also important in creating a security community among states connected through RIAs is the role that regional institutions play in widening the scope of economic activity (Haftel, 2007). To regulate their relationship, regional states need to cooperate on several economic issues in regular meetings, and such cooperation leads to a more complex and multi-issue form of economic interdependence beyond trade. Finally, RIAs create future expectations of economic gains. By lowering tariffs, bolstering regional partners' bargaining power vis-à-vis third parties, and increasing their attractiveness for foreign investment, regional institutions may effectively extend the shadow of the future and increase the stakes for partners beyond the current stream of economic benefits (Mansfield, Pevehouse & Bearce, 1999/2000). In this respect, states have greater economic stakes in their partners if they also share institutional ties through regional arrangements.

Together, these studies point heavily to the role of institutional participation and suggest that the link between trade and interstate conflict is shaped by the institutional setting that regulates economic exchange between states. The costly signals of resolve that rationalist explanations of trade and conflict have attributed exclusively to the flow of international trade are generated mostly through the institutions that increase the opportunity costs of trade disruption. Multiplying the economic stakes at risk for trading states by bringing together the current stream of benefits from a broad range of economic

[5] Abbott & Snidal's (1998) study extensively discusses the functions of international organizations, which also have a fundamental role in international security. Also see Dorussen & Ward (2008), Gartzke, Li & Boehmer (2001), Oneal, Russett & Berbaum (2003), and Pevehouse & Russett (2006).

[6] Indeed, scholars suggested that the multilateralism of GATT/WTO has pushed states to regionalism to increase their bargaining power in this multilateral framework (Mansfield & Reinhardt, 2003).

activity and expected gains from future trade, economic regionalism makes it particularly difficult for states to forego economic ties for political gains.

While most of these arguments are formulated to understand whether trading states fight each other, they can also be productively adopted to explain extended general deterrence. By strengthening existing economic ties, extending the shadow of the future, and facilitating a greater level of economic integration and reciprocity, institutional membership can be much more effective than simply economic exchange in building a sense of community between trade partners (Goldstein, Rivers & Tomz, 2007). As Dorussen & Ward (2008) argue, commercial and other institutions contribute to peace among member states by creating a network in which third parties can undertake timely interventions to prevent the escalation of disagreements between member states. Important in Dorussen & Ward's (2008: 195) network approach is that third parties intervene to avoid the externalities of conflict which 'can be as diverse as reducing trade, eroding belief in international institutions, and generating tensions between other states'. Similar externalities would be generated if an outsider attacked a member state. Therefore, other states in the network would have a strong incentive to intervene in case of an attack to protect their interests against outside aggressors.

To sum, the sheer volume of trade may lead attackers to miscalculate defenders' resolve. Yet, trade with regional partners clarifies defenders' incentives based on the extent of their economic interests in the target. Hence, defenders that have developed extensive economic ties with the target through institutions send credible signals of resolve to potential attackers and have an easier time in preserving the status quo against interstate aggression.

*H2 (institutionalized trade)*: The likelihood of extended general deterrence success increases if third-party defenders and the target are joint members of regional integration arrangements and also conduct extensive trade.

## Research design

*Case Selection*

A central issue with the empirical analysis of extended general deterrence is the universe of general deterrence cases. Unlike immediate deterrence, the role of states as the attacker and target in a general deterrence situation is hardly straightforward and leads to complex coding issues. Since the potential attacker has not taken any action yet in the form of mounting an attack or issuing a threat against a target, it is not easily identifiable (Danilovic, 2002; Huth & Russett, 1984; Huth, 1988; Morgan, 1977; Signorino & Tarar, 2006). This leads to the difficulty of examining whether deterrence could have been attempted, as well as whether it has been successful in deterring the hypothetical attacker from launching its attack on the hypothetical target. As Huth & Russett (1993: 63) suggest, 'there is an especially serious risk of inflating any "sample" of general deterrence cases with false positives'. There are several status quo points at which the attacker did not have a genuine interest in attacking a specific target, which inflate the number of 'false positives'. This means that the attacker's failure to attack does not always point to deterrence success. However, Huth, Bennett & Gelpi (1992: 492) suggest, 'minimizing the first type of error (inclusion of many irrelevant dyads) should take priority over the latter (exclusion of a few relevant dyads) in order to ensure internal validity'. The analyst can make some simplifying assumptions and draw from the well established rules of who is likely to fight whom in the interstate conflict literature to partially overcome these coding problems.

One way to identify attacker–target dyads and minimize situations where there are false cases is to use a rivalry framework. As Huth & Russett (1993) suggest, rivalries present a population of cases in which the chances are substantially high that extended general deterrence would be attempted by third-party states to avoid recurrent conflict. As such, 'the absence of conflict [between rivals] should be equated with a possible deterrence success' (Huth & Russett, 1993: 63). I have adopted two different rivalry datasets for this purpose and use a directed-dyad dataset that covers the post-World War II period. Data on enduring rivalries come from Bennett for the period between 1948 and 1992, and enduring rivalry is defined as 'any dyad in which six MIDs occurred over a period of 20 years' with 'a maximum of a 15-year gap between any two disputes' (Bennett, 1998: 1214). Data on strategic rivalries come from Thompson (2001: 560) for the period 1816–1999, and strategic rivals are states that 'must regard each other as (a) competitors, (b) the source of actual or latent threats that pose some possibility of becoming militarized, (c) enemies'. While enduring rivalries are conceptualized on the basis of dispute density over a period of time, states' perceptions of each other are the basic component of strategic rivalries. Since these datasets capture different dimensions of the rivalry phenomenon, I utilize both to check the robustness of the findings.

## Defining general deterrence failure

What type of actions constitutes general deterrence success and failure? Identifying when the defender has failed to deter the attacker is another important research design issue in the study of extended general deterrence. Deterrence scholars have commonly adopted initiation of militarized disputes to operationalize deterrence failure (Danilovic, 2002; Huth & Russett, 1984; Signorino & Tarar, 2006). I also follow this approach and create a dichotomous dependent variable (0–1) where general deterrence failure is when a potential attacker threatens, displays or uses force against a target.[7] I use generalized estimation

[7] Huth & Russett (1984) suggest that threats and displays of force by the attacker that result in more than 250 fatalities despite the defender's threat of retaliation signify deterrence failure. I have adopted this specification as deterrence failure in alternative tests of the deterrence model. No significant change has been observed on the key independent variables 'total trade' and 'institutionalized trade'.

equation (GEE) designed for pooled time-series data (Zorn, 2001). Panel-corrected robust standard errors which are clustered on the dyad to account for rivals' heteroskedastic conflict behavior are reported in the empirical analysis.

The data for attackers' militarized actions come from the Correlates of War (COW) Project Militarized Interstate Disputes (MID) 2.1 Dataset (Ghosn, Palmer & Bremer, 2004). Since these actions constitute a 'dispute initiation' according to the COW criteria, I will also refer to them as such interchangeably with 'deterrence failure'. I have adopted Maoz's list of dyadic disputes in EUGene which corrects for some errors in the COW MID data (Gochman & Maoz, 1984). Attacker and target roles are limited to original participants who are involved in the dispute on the first day. I do not consider decisions to join as a new initiation. Original initiators are states that the COW project codes as original participants on side A, whereas original targets are original participants coded on side B.

## Independent variables

*Trade dependence.* This variable is intended to capture the economic value of a potential target to third-party states. In immediate deterrence, the defender has issued a retaliatory threat against the attacker's initial challenge; therefore, its identity is known to the analyst. Yet, identification of the defender is not straightforward in extended general deterrence: similar to the difficulty with identifying the attacker, the defender has not yet taken any action to protect the target. To figure out which states have a genuine interest in defending based on their economic interests, I look at the volume of trade between a potential target and each state outside the attacker–target dyad as a potential defender. In an uncertain world, the state considering an attack does not possibly know the exact amount or value of trade between its target and potential defenders (Huth & Russett, 1984: 512). As an information shortcut, it would anticipate that as the target's overall trade value to third parties increases, so does the likelihood of a multilateral confrontation, whereas conflicts with autarkic targets would not trigger intervention from economically minded states. Since this study aims at understanding defenders' willingness in the form of important trade ties, this approach can help us with the identification of defenders with a high resolve via trade.

I have adopted two different measures of trade dependence of the defender on the target and used Gleditsch's (2002) trade data to construct these variables.[8] *Total trade* tests for H1 (trade volume) and is measured as the sum of trade volume between the target (A) and all possible defenders (B). In this measure, trade volume is the ratio of bilateral trade between A and B to B's total trade. *Institutionalized trade* tests for H2 (regional economic integration) and is measured as the total amount of trade conducted through regional integration arrangements (RIAs). Potential defenders (B) are selected from states that are members of the same regional economic agreement with the target A and their trade volumes with the target are summed to create 'institutionalized trade', following the same procedure with 'total trade'. In identifying the RIAs, I have relied on Haftel's (2007) list which consists of 25 agreements, and institutional data are adopted from Pevehouse, Nordstrom & Warnke (2003).[9]

*Defender's capacity.* Also important in studying extended deterrence are the relative capabilities of the potential attacker and defender. It is a well established argument in the immediate deterrence literature that resolve and capabilities of the defender are both important in producing deterrence: 'a theoretical framework for explaining deterrence outcomes needs to incorporate *both* capability and credibility as key factors' (Danilovic, 2002: 92, italics added). Defenders that can commit significant resources and also have a genuine interest in defending the target would be the most significant actors in attackers' decisions. It is most likely that if the attacker has an interest in targeting trading states, defender's power will overturn its incentives to do so. Using the national material capability (CINC) scores from the COW Project, the defender's capacity is measured as the ratio of the attacker's national capabilities to the sum of the attacker and defender's capabilities, where the defender is the most important trade partner of the target identified by the trade dependence variable described above (Oneal & Russett, 1997; Singer, Bremer & Stuckey, 1972). For *Total trade*, the defender is the state with the highest trade volume with A among all other states and for *Institutionalized trade*, the defender has the highest trade volume with A among A's regional economic partners.

## Conflict initiation between attacker and target

*Trade dependence.* It is important to gauge the economic value of the target not only to the defender but also to the attacker. Following the core arguments in the Kantian peace research program, *trade dependence* will be included in the model as a factor that affects the probability of dispute initiation (e.g. Danilovic & Clare, 2007; Gartzke, 2007; Oneal & Russett, 1997, 1999). This variable is created in two steps following Danilovic & Clare (2007). First, I have computed the natural

[8] Gleditsch's (2002) trade data are limited to the 1948–2000 period. All enduring rivalry cases (Bennett, 1998) up to 1992 and strategic rivalry cases (Thompson, 2001) for the 1948–1999 period have been included in the analysis.

[9] Alternatively, I operationalized trade dependence as the ratio of the trade volume between the target and the hegemon (USA) to the hegemon's total trade. 'Defender's capacity' is measured as the ratio of the hegemon's capabilities to the sum of its capabilities with the attacker. Results show that trade with the hegemon has a highly significant and negative effect on the likelihood of dispute initiation: attackers are much less likely to initiate against a target with whom the hegemon trades heavily. 'Hegemon's capacity' does not have a significant effect similar to the findings on the 'defender's capacity' variable in Table I. See the online appendix.

logarithm of the ratio of bilateral trade between the attacker and target to the attacker's total trade using data from Gleditsch (2002). Second, to account for the weak link hypothesis which suggests that the less dependent state in a dyad is more likely to initiate, I have constructed a dichotomous variable that marks whether the attacker is the less trade dependent state in the attacker–target dyad and interacted this variable with the bilateral trade-to-total trade ratio (Oneal & Russett, 1997). Therefore, *trade dependence* is the dependency of an attacker on the target for cases in which it is the less dependent state in the dyad.

*Joint democracy.* I also benefit from the basic findings in the democratic peace literature and control for the role of shared democratic institutions on states' conflict behavior. *Joint democracy* is measured as a dichotomous variable (0–1) taking on a value of 1 if the attacker and target both score greater than +5 on the Polity democracy–autocracy scale between –10 and +10, and 0 otherwise (Jaggers & Gurr, 1995).

*Alliances.* To capture the role of alliances on states' propensity to engage in disputes, I have adopted the COW Project Alliance Dataset (Gibler & Sarkees, 2004). The *alliance* variable is dichotomous (0–1) and is coded as 1 if the attacker and target share an alliance (defense pact, neutrality or non-aggression pact, entente) and 0 otherwise.

*Balance of capabilities.* This variable controls for the capacity of the attacker to use force against a target and is constructed as the ratio of the (potential) attacker's capabilities to the sum of the capabilities in the dyad (attacker–target) using the CINC scores from the COW Project (Singer, Bremer & Stuckey, 1972).

*Development .* In democratic peace research, it is claimed that developed states are less likely to resort to force given that territorial aggression loses its material value with development and economic success (Oneal & Russett, 1999). Therefore, states with a high GDP per capita are less likely to seek rents through offensive strategies. I measure development as the natural logarithm of attacker's GDP to its total population using Gleditsch's (2002) GDP data.

*Target has defensive ally .* Following Leeds (2003) and Gartner & Siverson (1996), I have also assessed whether attackers are less likely to initiate against a target with defensive allies. *Target has a defensive ally* is a dichotomous variable (0–1) that equals 1 if the target shares a defense pact with any other state except for the potential attacker and 0 otherwise (Gibler & Sarkees, 2004).

*Interest similarity.* Researchers in interstate conflict have argued that states with similar preferences are less likely to fight with each other. To control for the effect of national preferences on dispute initiation, I include the *interest similarity* variable in the analysis. This variable uses the weighted global tau-b scores for attacker–target dyads generated using EUGene (Bennett & Stam, 2000) and has a range between –1 (most dissimilar) and +1 (most similar).

## Empirical analysis

In order to gauge the conditions associated with general deterrence failure, I have estimated four models with two different samples of attacker–target dyads within a rivalry framework. The results of the analysis consistently show that the potential role of third-party states that have institutional ties with the target along with extensive trade is one of the most important factors that play into attackers' decisions. Important foreign trade between the target and third-party defenders does not appear to be sufficient for success in extended general deterrence. Contrary to the findings in the immediate deterrence literature, attackers do not necessarily perceive the target's overall trade value to third-party states as a credible sign of resolve. Trade is a powerful deterrence mechanism when it takes place within an institutional setting. Hence, when the target is also a joint member of regional economic institutions with its important trade partners, extended general deterrence is more likely to succeed. These conclusions hold independent of the general deterrence cases adopted in the analysis.[10]

Drawing from the basic logic in the immediate deterrence literature, I first examine the possibility that states considering an attack try to anticipate the behavior of the *target's friends* and their actual willingness to intervene. As part of this theoretical claim, attackers calculate their prospects for victory and defeat by observing potential defenders that conduct heavy trade with the target. In line with the expectations stated in H1, target's total trade value to third-party states does not appear to deter states considering an attack. Similar results have been obtained for both strategic and enduring rivals, which provides further support to the conclusion that defenders' willingness to influence the probable outcome of conflict defined exclusively in the form of international trade has no bearing in attackers' decision calculi in a general deterrence situation (Table I).

An important reason behind this finding is that trade is a noisy indicator of defender's resolve. Not all states that have important trade with the target are 'significant' actors for attackers. Put simply, the current stream of benefits between the target and its potential defenders presents an ambiguous situation in which the attacker is uncertain about how far third parties would be willing to go in defending this target in a possible confrontation. In this respect, it is necessary to focus on other important indicators of the defender's long-term and established economic interests in the target. While the constraints imposed by third parties' economic interests on an attacker's decision are at best limited, institutional ties between the target and its significant economic partners reduce uncertainty in incentives to defend.

[10] The deterrence model has also been tested with politically relevant dyads and the results on total trade and institutionalized trade confirm the findings for rival dyads. Results can be viewed in the online appendix.

Table I. The deterrent effects of institutionalized trade; rival dyads.

| | Enduring rivalries | | Strategic rivalries | |
|---|---|---|---|---|
| | (1) Total trade | (2) Institutionalized trade | (3) Total trade | (4) Institutionalized trade |
| *Extended general deterrence* | | | | |
| Trade dependence | −.006 (.005) | −.058 (.023)* | −.006 (.006) | −.128 (.030)* |
| Defender's capacity | −.759 (.559) | 1.149 (.985) | −.301 (.174) | 1.399 (.403)* |
| *Conflict initiation between attacker and target* | | | | |
| Trade dependence (weak link) | −.001 (.006) | −.001 (.006) | −.013 (.005)* | −.012 (.005)* |
| Joint democracy | −.085 (.035)* | −.091 (.035)* | .007 (.022) | .005 (.024) |
| Development | −.010 (.010) | −.007 (.010) | −.038 (.011)* | −.035 (.011)* |
| Alliance | −.099 (.132) | −.097 (.131) | .134 (.086) | .131 (.085) |
| Balance of capabilities | −.016 (.070) | .017 (.069) | −.068 (.088) | −.063 (.086) |
| Target has defensive ally | −.070 (.045) | −.084 (.041)* | −.385 (.064)* | −.387 (.063)* |
| Interest similarity | .159 (.151) | .176 (.144) | .123 (.091) | .130 (.091) |
| Constant | .218 (.056)* | .185 (.049)* | .163 (.049)* | .158 (.045)* |
| N | 1494 | 1494 | 4909 | 4909 |
| Model $\chi^2$ | 17.17* | 19.06* | 88.80* | 89.86* |

Huber/White robust standard errors are reported in parentheses and are clustered on the dyad. * $p \leq .05$ (two-tailed).

Accounting for the defender–attacker relationship in the shadow of institutions fundamentally alters the dynamics of general deterrence via trade. Results related to the institutionalized trade variable show that the probability of dispute initiation significantly decreases when regional economic integration is accounted for in the analysis. There is strong and consistent support for H2 in all attempted models. Trade dependence, when defined as the trade value of the target to its regional partners in RIAs, successfully deters attackers in general deterrence situations. Economic institutions reduce an attacker's uncertainty about the costs of a future conflict to third-party defenders by signaling their long-term economic interests in the target.

Figure 1 plots the predicted probabilities of general deterrence success to facilitate interpretation. The coefficients used in generating predicted probabilities come from Models 2 and 4, which report findings on H2 (regional economic integration). I have assumed a base dyad that is supposedly more likely to fight by setting *defensive ally alliance*, and *joint democracy* variables to 0; and I have set power variables (*defender's capacity* and *balance of capabilities*) to 0.5 (parity). All other variables are set to their mean values. It is striking to see that the defender–target relationship is as important as attacker–target relations in understanding and explaining conflict initiation, supporting the notion that states consider a much broader strategic environment than exclusively their relations with the target. In attacker–target dyads that have a reasonable chance of fighting, the likelihood of conflict initiation significantly decreases if targets are economically integrated with their defenders through regional institutions. In line with Haftel's (2007) findings, economic regionalism leads to zones of peace. This is not only because RIA members establish peaceful relations with each other; by designing institutions to regulate their economic activity, they can also credibly signal to outsiders their genuine interest in defending each other against interstate aggression.

While institutionalized trade has a consistent negative impact on militarized conflict, findings on the role of power are mixed. Defender's capabilities vis-à-vis the attacker are not related to deterrence success in most models., This variable has a significant coefficient only in Model 4, but the relationship is not in the expected direction. Hence, the risk of fighting in the shadow of power does not necessarily curtail attackers' incentives to challenge the target. This conclusion might be contrary to Fearon's (1994) argument that observable indicators of defenders' resolve, such as power and trade, should be related to success in general deterrence but not in immediate deterrence. Most defenders in immediate deterrence cases are major powers (Huth & Russett, 1984). Yet, defenders in the *defender's capacity* variable are selected from the most important trade partners of the target, which are usually small regional states. Capabilities may play an important role in an attacker's decision when a major power defender is likely to become involved in a future confrontation. Yet, power might be less relevant than trade when the defender is a small state. Calculating that minor defenders will not stretch themselves for the defense of others unless important economic stakes are at risk, attackers may be more interested in avoiding a multilateral conflict with a major power state. Unless the defender has overwhelming power, incremental differences in capabilities would signal that the defender will be hesitant to oppose an attacker that is more or less of its size. Especially in cases where violence is not likely to escalate to the level of foregone trade, minor defenders may prefer to wait rather than risking their limited resources in others' defense.

Drawing on the impressive body of work on interstate conflict, the empirical analysis also controls for the political and economic ties of attacker–target dyads. Findings on the core variables from the Kantian peace research program, such as trade dependence and joint democracy, fail to have consistent effects across

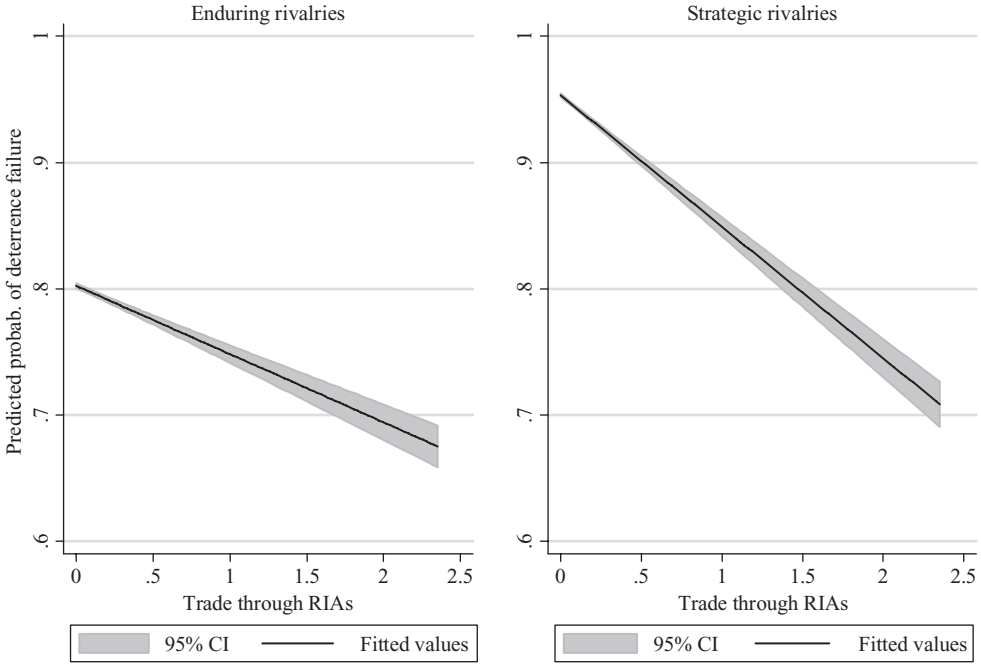


Figure 1. Institutionalized trade and extended deterrence success

strategic and enduring rivalries. One rather consistent finding in Table I is that states with defensive allies are less likely to be targeted by attackers. In line with Leeds (2003) and Gartner & Siverson (1996), third parties' promises of defensive support significantly deter attackers. Most control factors, such as growth, alliances, interest similarity, and balance of capabilities, also do not perform well with rivalry datasets and fail to reach conventional significance levels.[11] Unlike most models of interstate conflict, analyses with rival dyads select on states that have a history of recurrent conflict and entrenched perceptions of enmity. Factors that are frequently adopted to explain whether any AB dyad will fight each other are much less relevant to examining A and B's conflict propensity when they are already involved in a spiral of hostility. Ex ante factors measuring the joint characteristics of states do not adequately capture several important dimensions of rivals' interrelations. States are better informed about their rivals with which they interact multiple times over a long period of time, and crude indicators such as country characteristics are unable to model this type of information. More importantly, conditions of attack are much different in a rivalry context. Rival states observe each other and wait for opportunities to supersede their adversary. Hence, what triggers states that perceive each other as competitors and enemies and those that engage in recurrent conflict are changes in the opportunity structure that need to be modeled with more refined indicators.

[11] Significance levels of the Kantian peace variables as well as control factors improve dramatically when the deterrence model is tested with politically relevant dyads. See the online appendix for full results.

## Conclusions

This study inquired into the extended general deterrent effects of trade. I find that contrary to the rational deterrence logic, international trade is a noisy indicator of defenders' resolve to defend. Third-party states' trade with the target does not necessarily reduce attackers' uncertainty about the costs and outcome of a multilateral confrontation. Trade has a general deterrent effect on attackers when the target is economically integrated with potential defenders through regional trade institutions.

This approach makes important contributions to the extended deterrence literature and economic peace research and moves us forward with an understanding of the broader political impacts of trade, as well as the causal mechanisms at work in extended general deterrence. It fills the gap in the literature by exploring the conditions of general deterrence on which there is little empirical work and extending the analysis of the deterrent effects of trade beyond immediate deterrence cases. An important reason for the lack of attention to general deterrence has been the difficulty of identifying the universe of deterrence opportunities and failures (Huth & Russett, 1993). In this study, I have tested general deterrence hypotheses related to trade 'using simple, plausible, and readily available' measures within a rivalry framework (Fearon, 1994). Examining the role of the defender and target's economic ties in both general and immediate deterrence is crucial to fully understand extended deterrence and the link between economics and conflict. As Fearon (1994) suggested more than a decade ago, trade, like other ex ante measures of defender's resolve, should be differently related to immediate and general deterrence. This study takes a step forward to clarify this distinction.

Second, an emphasis on the deterrent properties of trade contributes to the economic peace research. A more complete and compelling analysis of the information aspect of trade should examine how economically minded third parties affect the risk of conflict between the attacker and target by building on the rationalist explanations of trade and conflict. Kantian peace studies have mostly focused on whether and how economics affects the foreign policy paths that trading states choose. This is the *direct* impact of trade on state behavior. Drawing on the uncertainty-reducing effects of trade, the present analysis demonstrates that trade, especially when it takes place in an institutionalized setting, also has political implications beyond dyadic interdependence and affects aggressors' decisions (Maoz, 2009). Therefore, both direct and extended general deterrence can result from the information effects of trade under certain conditions. Conflicts in which expansion to outside actors is likely and will lead to a costly confrontation do not happen in the first place. Therefore, economic integration does not only affect the opportunities to fight but also the opportunities to intervene, which is a point that has been overlooked in past research.

## Data replication

The data for the empirical analysis and an online appendix can be found at http://www.prio.no/jpr/datasets.

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