# Conflict and Cooperation with Trade Partners\*

Timothy M. Peterson University of South Carolina tim@timothypeterson.org

Yuleng Zeng University of South Carolina yzeng@email.sc.edu

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#### **Abstract**

Escalating political conflict between major trade partners such as the US and China appears puzzling given theories linking trade to pacific international relations. We reconsider theories on bilateral trade, exposure to the global economy, and politics in order to explain contemporary events. Our approach departs from previous work in three key ways: we examine a broader range of conflictual and cooperative interactions together; we assume leaders are responsive to interests opposed to trade as well as to those who benefit; and we reconceptualize what it means to be a "major trade partner," presenting a new definition that varies with the dispersion of a state's trade across partners rather than merely dollar value or GDP composition of trade. We demonstrate that states generally initiate more conflict and more cooperation with major trade partners; and while higher exposure to the global economy reduces conflict initiation against major trade partners, it also reduces cooperation. Simultaneously, higher exposure to the global economy is associated with more initiation of cooperation with non-major trade partners. Using events data spanning 1995-2012, we find empirical support for our expectations.

<sup>\*</sup>Note: author names are listed alphabetically; authors contributed equally. Replication materials are available at http://dvn.iq.harvard.edu/dvn/dv/international interactions. Please direct questions and comments to the authors.

## 1 Introduction

Global trade continues to expand on a yearly basis, despite downturns following the 2008 global recession and resurgent economic nationalism within countries largely responsible for the contemporary liberal trade regime (World Trade Organization 2018). As of this writing, the United States is engaged in an escalating trade war with China while pursing grievances, albeit less dramatically, with other important trade partners. A glance at the current global political climate could call into question the prospect that trade promotes common state interests, and might challenge the conclusions of a large literature claiming that trade promotes peace (see Barbieri and Schneider 1999; Mansfield and Pollins 2001). While it is probably premature to expect costly armed conflict to result from escalating political conflict among trade partners in the contemporary era, the puzzling nature of recent events in light of trade-conflict theories motivates a reconsideration of exactly how trade influences international politics.

In this paper, we attempt to shed light on contemporary events by rethinking some common conceptual and operational choices in the trade-conflict literature. First, most studies focus on armed conflict as the outcome of interest. Yet, while inter-state armed conflict has become rarer over time, states continue to engage in a wide variety of cooperative and conflictual interactions. Accordingly, we examine the spectrum of international interactions together in a holistic fashion. Second, studies tend to assume that leaders are responsive to interests in favor of maintaining gains from trade. We reconsider how trade would affect international politics starting from the assumption that leaders might at times advocate on behalf of interests harmed by trade as well as those who benefit. Finally, most studies examine the extent of trade in terms of value or percentage of GDP, whereas we assume that each additional unit of trade value does not affect every state the same way. Instead, we calculate each state's "effective number" of trade partners using a measure borrowed from the literature on party competitiveness (Golosov 2010). We thus identify major trade partners accounting for a state's total trade volume and the dispersion of its

trade across partners.

Starting from this fresh perspective, we suggest that the opportunity costs and costly signaling models of trade and conflict are somewhat ill-suited to explain events in the contemporary international environment. We argue that because political interactions span a wide spectrum beyond severe armed conflict and because leaders will advocate for varying domestic interests affected by trade exposure, states generally will interact more—both in terms of cooperation and conflict—with major trade partners relative to states with weaker economic ties. We agree with previous research that, as global economic exposure broadens and deepens, the relative intensity of conflict with major trade partners decreases (Gartzke and Li 2003). Yet, our theory also predicts that cooperation with major trade partners will likewise decrease because the dispersion of a state's economic ties across many states reduces the attention of domestic actors towards any one. More optimistically, however, greater exposure to the global economy could incentivize more cooperation and less conflict against non-major trade partners because the informing aspect of global economic exposure is not offset by the interaction-promoting impact of major trade partner status.

To test our expectations, We use events data to estimate dyad-year regressions that examine how conflict and cooperation vary as a function of major trade partner status, conditional on each state's level of global economic exposure. Results support our expectations that the initiation of conflict and cooperation with major trade partners decreases as economic exposure increases, and that greater economic exposure leads to more cooperation with non-major partners.

Our paper contributes to the literature on trade and political relationships by developing an approach that we think is more relevant to the contemporary era. Although armed conflict is becoming rarer, states continue to pursue adversarial foreign policy, for example through the threat and imposition of sanctions (Baldwin 1985), or what has been deemed "weaponized interdependence" (Farrell and Newman 2019). Our coding of conflict incorporates e.g., demands for policy change and threats of economic restrictions along with events typically associated with

armed conflict: threats, displays, and uses of force. Our perspective is broadened further by the comparison of these behaviors to cooperative acts such as the promise of support or the grant of aid. Considering interactions holistically can improve our understanding of contemporary events. Indeed, if trade in some cases spurred a small level of conflict but a high degree of cooperation, the focus solely on conflict as an outcome of study could result in a distorted understanding of how trade affects international politics. While previous research has examined cooperation using events data (Polachek 1980; Gasiorowski 1986; Reuveny and Kang 1996, 1998), these studies generally focused on net conflict or focused on a narrow set of event types without considering overall levels of interaction.

Our approach also takes insights from the literature that examines how trade exposure affects domestic attitudes (Rogowski 1987; Hiscox 2001; Fordham and Kleinberg 2012; Kleinberg and Fordham 2013). While previous research examining the link between trade and conflict tends not to consider leader advocacy for interests holding negative impressions of trade partners, we explicitly assume that some domestic groups negatively affected by the distributional effects of trade might at times influence leaders towards more hostile actions against major trade partners. Our approach also has implications for the capitalist peace theory (e.g., Mousseau 2000; Gartzke 2007; McDonald 2007), which focuses on how the absence of policy barriers to economic interactions enables domestic trading interests to influence policy. While we agree that this phenomenon occurs, our perspective also allows for the possibility that the resulting distributional effects of trade exposure could spur other groups to seek more conflictual foreign policy with major trade partners. Such a process could be behind the heightened political tensions between major trade partners such as the US and China. This process is crucial to explore because the populist backlash to globalization could lead to further political conflict—and even armed conflict—in the future.

## 2 Rethinking the literature on trade and conflict

Scholars have advanced two key theoretical mechanisms models to explain the relationship between bilateral trade and (typically armed) conflict (Hirschman 1945; Polachek 1980; Barbieri 1996; Oneal and Russett 1997; Russett and Oneal 2001). First, the opportunity costs model posits that because trade gains will be lost at the onset of (severe) armed conflict, leaders will exercise restraint to preserve these benefits of peace (Polachek and Xiang 2010). Second, the costly signaling model argues that the prospect of lost trade informs trade partners that leaders' threats are to be believed (Morrow 1999; Gartzke, Li and Boehmer 2001).

Advances in this research area often center on the implications of a multilateral environment for our understanding of the relationship between trade and conflict. For example, studies consider third-party trade either in terms of a relative reduction in opportunity costs (Martin, Mayer and Thoenig 2008) or as a source of asymmetric dependence and vulnerability that could invite coercion (Barbieri 1996; Peterson 2011, 2014; Farrell and Newman 2019). Research also has examined the deterrent effect of third-party intervention in disputes (Aydin 2008, 2010; Kleinberg, Robinson and French 2012; Maoz 2009; Dorussen and Ward 2010; Kinne 2012; Feldman and Sadeh 2018) and the effect of third-party trade on costly signaling (Kinne 2014), as well as the manner in which competition for markets could provoke hostilities (Peterson 2015; Chatagnier and Kavakli 2017). Studies similarly consider how broader economic integration—what is often called *globalization* and typically incorporates financial relationships as well as trade—influences a state's conflict-propensity (Gartzke and Li 2003; Schneider and Schulze 2003; Schneider 2014; Sadeh and Feldman 2020).<sup>1</sup>

While this growing literature has greatly improved our understanding of how trade influences

<sup>&</sup>lt;sup>1</sup>Gartzke and Li (2003) use the terms *globalization* and *economic integration* interchangeably. Though we think this decision is reasonable, we avoid these terms in our own model to distinguish the multilateral breath and depth of economic ties, on which we focus, from related terms. Economic globalization typically refers to the ease of movement across national borders of trade, investment, and factors of production. Here, we focus not merely on legal barriers, nor on internationalization of production, but on the international dispersion of (realized) economic flows; as such, we use the term *global economic exposure*.

the incidence of armed conflict in a globalizing world, we contend that previous work is nonetheless limited in its ability to explain contemporary global events following from some common conceptual and operational choices. First, previous research largely considers a relatively narrow range of dependent variables—typically the onset of militarized interstate disputes (MIDs) or war.<sup>2</sup> This focus is understandable given that high-level armed conflict is costly, and because the opportunity costs and costly signaling models both assume that trade is lost when armed conflict begins; this is a more reasonable expectation when conflict is more severe. Yet political interactions incorporate a spectrum of cooperative and conflictual behaviors. Given that reduction in trade could be less certain when conflictual interactions are less severe, the opportunity costs and costly signaling models might be less useful to explain these phenomena. And previous research provides few clues as to how one might extend these models to explain cooperative interactions.

Second, previous studies in trade and conflict tend to ignore variation in the attitudes of domestic actors. While opportunity costs associated with lost trade presumably would affect (and dissatisfy) some domestic constituency, there is no guarantee that these interests would be successful in pressuring leaders to exercise restraint, particularly when other domestic interests might benefit from trade reductions. Similarly, the costly signaling literature focuses on the ability of the leadership of two trading states to bargain effectively, down-playing the domestic constituency on whose behalf the leaders presumably bargain. If the costs of lost trade do not fall on a leader's supporters, then no costly signal is possible. In both of these models, domestic actors are (often implicitly) reduced to a uniform constituency that prefers to maintain trade, all else equal. This assumption might be warranted given that trade is net-welfare increasing, and any losers to trade could be compensated by the winners. The literature on embedded

<sup>&</sup>lt;sup>2</sup>Pevehouse (2004) recommends the use of event counts to capture the degree of conflict experienced by trade partners; and previous research has found that trade ties might provoke low-level conflicts even as they preclude more severe conflicts (Crescenzi 2003). While studies have used events data to consider specific types of cooperation and conflict (Polachek 1980) or net conflict (i.e., conflict less cooperation) (Gasiorowski 1986; Reuveny and Kang 1996, 1998), studies have not considered conflict and cooperation within the context of overall interaction levels (i.e., conflict plus cooperation).

liberalism (e.g., Ruggie 1982) explores this dynamic. However, compensation is more difficult to provide in practice; and previous research suggests it might not motivate pro-trade attitudes for most citizens (Milner and Tingley 2011). The offer of job retraining and even unemployment benefits could seem cold comfort to those whose jobs have been lost due to import competition. Furthermore, studies of vulnerability and coercion typically center on the manner in which leaders identify opportunity to leverage economic ties to extract political concessions from trade partners, suggesting behavior on behalf of a constituency that would not oppose termination of trade (e.g., Keohane and Nye 1977).

Though recent work discusses the potential for liberal trade policies to undermine social cohesion and result in a backlash (Bussmann and Schneider 2007; Schneider 2014), general inattention to this possibility could put the trade-conflict literature at odds with the separate but similarly large literature on how exposure to trade influences foreign policy preferences of domestic actors.<sup>3</sup> A number of studies examine variation in individual attitudes (Mansfield and Mutz 2009; Fordham and Kleinberg 2011; Rho and Tomz 2017; Mansfield, Mutz and Brackbill 2019), firm lobbying (Kaempfer and Lowenberg 1989; Milner and Tingley 2015), and the behavior of elected leaders (Kono 2008; Kleinberg and Fordham 2013), but research has yet to connect varying attitudes resulting from trade exposure to variation in foreign policy outcomes.

Finally, many trade-conflict studies assume that each additional unit of trade is equivalent, modeling the effect of each additional dollar or percentage point of GDP associated with trade on the likelihood that armed conflict occurs. Though network studies incorporate broader information on a state's position in the global economy (Maoz 2009; Dorussen and Ward 2010; Kinne 2012;

<sup>&</sup>lt;sup>3</sup>A number of studies consider the manner in which exposure to trade shapes the preferences of–and disagreements between–various domestic constituencies. For example, building from the theory of comparative advantage, the Stolper-Samuelson model assumes that holders of the abundant factor of production, which benefit from openness, will prefer more trade exposure, while holders of scarce factors of production prefer closure and pressure leaders accordingly. This process results in class conflict between labor and owners of capital (Rogowski 1987). Conversely, Ricardo-Viner models assume that labor and capital holders will unite within industries, with political conflict falling across industries. There is empirical evidence for both models; and whether sector or industry cleavages emerge could depend on factor (typically labor) mobility across industries (Hiscox 2001).

Lupu and Traag 2013), even this method typically retains trade value as a measure of network edge strength. Other research has considered conditionality in this relationship, stemming from, e.g., the commodity composition of trade (Dorussen 2006; Peterson and Thies 2012) or the extent of liberalization (Mousseau 2000; Gartzke 2007; McDonald 2007). And studies on multilateral extensions of the trade-conflict relationship as discussed above similarly tend to focus on the value of dyadic trade conditional on the value of each state's trade with third parties. However, trade value might not be the best indicator of the degree to which domestic actors are affected by trade exposure. Accordingly, leaders also might view the next dollar—or million dollars—of trade with some given trade partner differently depending on, e.g., the state's broader reliance on trade and its total number of major trade partners.

# 3 The interactive impact of major trade partner status and global economic exposure

Reconsidering the tendencies in the literature identified above leads us to reevaluate the relationship between trade and political interactions from a new perspective. We begin with the assumption that state behavior follows as a function of domestic interests to which leaders are responsive (Moravcsik 1997). This assumption applies to all states rather than democracies only, as even authoritarian leaders are beholden to the winning coalition that keeps them in power (Bueno de Mesquita et al. 2004). Democracies generally are more responsive to the preferences of the public—and specifically to grassroots movements; yet, even within democracies, elites can manipulate public opinion towards their own ends (e.g., Zaller 1992). And within authoritarian states, it is likely that large trading firms would be influential members of the leader's winning coalition, though other groups such as the military are also likely to be present.

Although trade-conflict models often assume that leaders are responsive to domestic interests, the common focus is on interests favoring the retention of trade gains, which serve as an exogenous

source of costs leaders could incur if they engage in otherwise unrelated political—and particularly militarized—conflict. Exogeneity is important, as opportunity costs and costly signaling models become more ambiguous if trade itself is the source of a dispute, for example if a state imports a raw resource but also claims territorial rights to that resource. Notably, our theoretical model focuses on how trade itself motivates conflictual—and cooperative—behavior as leaders initiate both cooperation and conflict on behalf of heterogeneous domestic interests. Lack of attention to heterogeneous domestic preferences in prior empirical studies could follow from the practical difficulties in obtaining data to test causal mechanisms at this level of analysis. However, we contend that it is worthwhile to assume preference heterogeneity and then test for the empirical implications thereof.<sup>4</sup>

While international economic exchange is welfare-enhancing on average, every economic transaction holds the potential to result in domestic winners and losers. As discussed above, studies tend to make the simplifying assumption that society as a whole prefers to maintain (or expand) gains from trade because—at least in theory—the winners from trade could compensate the losers (e.g., Ruggie 1982). This assumption blatantly contradicts the other large literature examining the consequences of trade for the preferences of domestic groups and individuals—and on the behavior of (typically elected) leaders. We contend that groups perceiving trade as threatening generally will be little satisfied with proposed compensation, if any is offered (Ehrlich and Hearn 2014). Further, a higher level of trade does not necessarily imply proportionally higher political power of trading interests relative to their opponents, so there is no reason to expect that trading interests would dominate the political process. As a consequence of our modified assumption, the logic of opportunity costs and costly signaling unravels at least in some cases. Opportunity costs would not preclude conflict if they fall on actors who do not enjoy the leader's backing.

<sup>&</sup>lt;sup>4</sup>Notably, this approach deviates from a state-level perspective in which leaders maximize a state's expected utility. We do not claim that leaders balance the gains from trade against the costs of social disruption that follows from trade exposure. The political power of interests is variable. Accordingly, our approach allows the possibility that, at the state level, behavior is inefficient.

Similarly, if a leader advocates on behalf of groups that would benefit from trade restriction when engaging in a dispute with a trade partner, then costly signaling would fail.

Given that states tend to trade more with friendly trade partners (Pollins 1989; Gowa and Mansfield 1993; Feldman and Sadeh 2018), it stands to reason that domestic groups might attempt to influence political relationships in order to affect future trade exposure. A group—typically a firm or industry association—that is harmed by exposure to trade, in order to reduce this harmful competition, could lobby for more political conflict and/or less political cooperation towards major trade partners.<sup>5</sup> For example, an industry losing market share to a foreign competitor might seek government action to criticize alleged abrogation of worker rights. Conversely, a group that benefits from trade could lobby to increase cooperation in order to promote further expansion of trade, and could pressure leaders to reduce conflictual interactions. To illustrate, an industry that relies on foreign inputs imported from a variety of countries would likely support material assistance to those states and the formulation of agreements facilitating travel and commerce. Similarly, an industry benefiting materially from imports or exports with a foreign state might lobby to preclude coercive behavior that would increase trade restrictions against that partner.

That said, lobbying by domestic actors affected by trade exposure is not strictly necessary for leaders to be responsive to the foreign policy preferences thereof. Groups could instead donate to the political campaigns of politicians whose foreign policy views would advance the group's preferences. Further, industry groups or firms might attempt to sway public opinion towards their cause. For example, an industry harmed by relatively cheap imports could draw the public's attention towards the exploitation of foreign workers in order to create pressure on leaders to sanction these alleged abusers of human rights.

The link between trade and politics thus could follow the *disturbance model* of interest group politics (Truman 1952), wherein action by pro-trade interests increases openness and subsequently

<sup>&</sup>lt;sup>5</sup>These groups also could lobby for protectionism (Grossman and Helpman 1994); such behavior would be complementary.

harms other citizens. A policy entrepreneur could leverage this dissatisfaction to push for conflictual policy against states with competitive trade relations (Zeng 2002). Of course, most conflictual policies probably would not take the form of armed conflict, yet escalation remains possible if citizens see trade partners as security threats. Whereas increasing openness has been viewed as a distinctly pacifying force in the capitalist peace literature (e.g., Mousseau 2000; Gartzke 2007; McDonald 2007), the current populist backlash to liberal internationalism likely follows at least in part from such a disturbance-response mechanism.

While it might seem trivial to argue that states engage in more political interactions generally with major trade partners, our main argument is that this process occurs in tandem with the effect of global economic exposure to determine initiation of conflict and cooperation with respect to major trade partners and other states. Previous research argues that embeddedness in the global economy decreases conflict-proneness because it informs actors throughout the system of leaders' desire to balance political gains against broader economic stability (Gartzke and Li 2003). Along similar lines, one could view the pacifying impact of globalization as an extension of costly signaling theory: broader, multilateral economic exposure renders conflict less likely by increasing the credibility of third-party signals (Kinne 2014).

We contend that global economic exposure will condition the impact of major trade partner status. A lack of economic exposure suggests that trade is concentrated within fewer major trade partners. Under this condition, firms' bottom lines will depend more on relations with these states, and thus their attention—as well as the attention of leaders—will be more focused towards them. Other domestic groups affected by trade exposure would similarly focus attention to this small set of trade partners. Conversely, greater global exposure suggests that, while a state could maintain a larger number of major trade partners, each specific one is less important. The attention of domestic actors—interest groups and leaders alike—will be spread more widely, leading to a reduction in the expected return on investment associated with trade partner-specific advocacy and policy. As such, the interaction-promoting impact of major trade partner status

should decline as global economic exposure increases.

While the informing impact of economic exposure could still exist for major trade partners, it could also be mitigated by the uncertainty associated with potentially conflicting domestic preferences. It is therefore interactions with non-major trade partners where we expect to see the strongest informing effect of global economic exposure. Thus, we expect less conflict against non-major trade partners as global economic exposure increases. Further, although previous research has examined the informing effect of globalization on militarized dispute onset (Gartzke and Li 2003), we contend that better information on leaders' preferences also could promote more cooperation broadly throughout the international system—at least with non-major trade partners that are unaffected by the interaction-promoting impact of major trade partner status. As such, we also expect a state to initiate more cooperative interactions with these less important partners as economic exposure increases.

Three hypotheses follow:

- **Hypothesis 1** States will initiate more conflict and more cooperation with major trade partners relative to minor trade partners.
- **Hypothesis 2** The relationship between major trade partner status and conflict/cooperation is strongest in magnitude when the initiator's level of global economic exposure is low, diminishing as the initiator's global economic exposure increases.
- **Hypothesis 3** Higher global economic exposure is associated with less initiation of conflict and more initiation of cooperation with non-major trade partners.

## 4 Research Design

In order to test our hypotheses, we combine data on trade from the UN Comtrade database<sup>6</sup> with the Integrated Conflict Early Warning System (ICEWS) events data (Lautenschlager, Shellman

<sup>&</sup>lt;sup>6</sup>We downloaded data updated as of February 2018.

and Ward 2015).<sup>7</sup> Our analysis spans 1995-2012, years during which all data used are available.<sup>8</sup> We use the directed dyad-year as our unit of observation given our focus on initiation of cooperation and conflict against major trade partners relative to other, less important states. We identify major trade partners via algorithm to code our primary dependent variable (more on this below), and estimate the initiation of dyadic cooperation and conflict in separate equations. Both dependent variables are coded for the year t+1 in order to reduce the possibility of bias due to reversed causation.

To code our two dependent variables, we calculate the sum of relevant Goldstein-weighted event counts (Goldstein 1992), <sup>9</sup> and then take the natural log of the yearly sums (plus 0.01) for each DV. <sup>10</sup> The Goldstein scale (1992), based on an expert survey of event severity, is particularly useful for our purposes because it accounts for frequency and severity of both cooperation and conflict behavior by states. For example, while a full-blown military clash is coded as a -10 on this scale, it also incorporates behaviors such as the expulsion of an organization or group (-4.9), or the issuance of a formal complaint (-2.4), along side cooperative actions such as a formal visit (1.9), promise of future support (4.5), and the extension of military assistance (8.3). See the appendix for a complete list of event types and weights.

While previous work warns that the clustering of measurable incidents surrounding a given event could lead to inflated totals (Pevehouse 2004), the use of a logged sum should mitigate this problem as it produces order-of-magnitude scales for each variable. Further, while one might question that a military clash is twice as severe as the expulsion of an organization or group, the use of a logged sum means that the contribution of each will depend on the total number

<sup>&</sup>lt;sup>7</sup>The ICEWS algorithm is proprietary so we cannot describe it exactly. In brief, it works by scraping news stories to identify actors and targets associated with a variety of interactions between socio-political actors. Events are classified using the CAMEO taxonomy. ICEWS codes non-government actors as well as behaviors taking place entirely within one state. However, we use only the data on international, inter-governmental events.

<sup>&</sup>lt;sup>8</sup>Events data become available beginning in 1995, while data on capabilities are available only through 2012.

<sup>&</sup>lt;sup>9</sup>We take the absolute value of summed conflict in order to obtain a positive indicator. The negative sign is unnecessary given that we separate conflict events from cooperation.

<sup>&</sup>lt;sup>10</sup>Notably, yearly sums of events are useful to cature the overall density of interaction each year, whereas previous studies often consider whether an armed conflict ever occurred in a given year.

and severity of conflict events. Indeed, while Goldstein scores have been fairly criticized as ad hoc judgments (Schrodt 2017), we argue that it is equally arbitrary to consider all events as equivalent, as is the implicit coding decision when using event counts. We think that, for example, 10 military clashes should be weighted as a more severe degree of conflict than the same number of expulsions. Even the distinction into verbal versus material cooperation and conflict does not fully address this issue of (potentially inappropriate) count equivalence.

#### 4.1 What does it mean to be a major trade partner?

We begin with the premise that not all states consider identical criteria for what defines a major trade partner. Instead, states likely consider the importance of a given trade partner in the context of the structure of their total trade. Rather than consider some arbitrary cutoff for trade value either in dollars or as a proportion of GDP, we consider major partners in the context of how much a state trades with all other states. Towards this end, we borrow an indicator of the "effective number" used commonly to measure the competitiveness of party systems comparatively across countries. Specifically, Golosov (2010) proposes an index that, when applied to trade portfolios, accounts for the number of total trade partners and the share of the state's trade each contributes. This measure is useful to identify the number of most important trade partners given knowledge of how much the state trades with all other states. Mathematically, the effective number of major trade partners is calculated as:

$$M = \sum_{i=1}^{N} \frac{1}{1 + (\frac{\bar{s}^2}{s_i}) - s_i} \tag{1}$$

where M denotes the number of major trade partners, N is the total number of trade partners,  $s_i$  is the trade value for each trade partner, and  $\bar{s}$  the largest trade value. Using this measurement (for a given year), we rank a state's trade partners by trade value and assign the top M as major trade partners. In a hypothetical case where a state's trade were equally distributed among all N

trade partners, the measure would simplify to N.

Using this proposed index, we identify major trade partners with respect to imports and exports separately and then code a final variable that counts the number of states that are major trade partners with respect to *either* flow. As an illustration, we plot the number of major trade partners of the U.S. and China over time in the left panel of Figure 1. The measurement appears to accord with our understanding of recent development in trade. China has been consistently diversifying its trade relationship since it opened up its economy. Notably, its number of major partners experienced a jump in 2000, most likely due to joining the WTO. America's count of major trade partners is relatively steady, ranging between 15 and 20. The plot also captures the impact of the 2008 financial crisis: the number of major U.S. trade partners dropped by 2, returning to its 2005 level.

#### [Figure Figure 1 about here]

The right panels plot the breakdown of U.S. and Chinese major trade partners over time. There are a number of points worth highlighting. First, the U.S. has more consistent major trade partners than China, indicating its relativity steady position in the global market. China, as a latecomer, has been gaining more major trade partners, mostly natural resource suppliers such as Saudi Arabia and Venezuela. Second, although many of China's major trade partners are large, democratic countries, we see substantial variation, both in terms of country size and regime type.

We include three dichotomous variables to capture various combinations of major trade partner status. Specifically, we include a variable to capture the case where both dyad members are major trade partners for each other, along with variables for the case where only state 1 is a major trade partner of state 2 and vice versa. The reference category is that neither state is a major trade partner of the other. While our theoretical mechanism focus on how a given state (the initiator in a directed dyad) behaves towards a specific other state (the target in a directed dyad), the inclusion of all combinations of dyadic major trade partner status precludes spurious

correlation that could follow from systematic covariation—for example, possible reciprocity in major trade partner status. This specification is also useful to recognize potential for reciprocity of interactions, as well as possible preemption in the case of expected conflictual behavior.<sup>11</sup>

To capture economic exposure, we use the KOF economic globalization index. This measure captures the dispersion of trade and foreign direct investment, in conjunction with the importance of each for state GDP, standardized to span the range of 0 to 1. Note that, despite the label *globalization*, this indicator does not capture liberal trade policy nor production-sharing across state borders. Rather, it captures breadth and depth of multilateral economic ties—exactly the phenomena we examine in our theory. Dispersion in the KOF index is captured with (inverted) Herfindahl indices; 12 engaging in trade and FDI entirely with one state would suggest complete concentration, whereas commerce shares equally distributed over many different partners would suggest higher levels of economic exposure. We include KOF indices for both state 1 (the initiator) and state 2 (the target) in the directed dyad. Again, we are primarily interested in the initiator's exposure; however, as with major trade partner status, the target's indicator serves as a useful control to improve model fit and possibly reduce the potential for spurious correlation if, for example, more exposed states tend to have other highly exposed states as major trade partners.

Our primary explanatory variables compose an interaction of each of the three major trade partner status variables and each of the two economic exposure variables. However, we first re-scale the KOF indicator by subtracting the mean from each value. This transformation places zero at the mean of the re-scaled variable, which is useful given our interactive specification. The coefficients for major trade partner status variables thus indicate the association between these conditions and cooperation/conflict under the condition of average exposure. Similarly, the KOF

<sup>&</sup>lt;sup>11</sup>For example, if state 1 is a major partner of state 2, our argument suggests that state 2 would initiate more interactions with state 1. State 1 might anticipate a conflictual action against it and move first to preempt state 2.

<sup>&</sup>lt;sup>12</sup>A Herfindahl captures concentration, coded as a sum of squared shares. To illustrate, a Herfindahl index for trade partners of some state A would square the dyadic trade share (A-B trade as a proportion of A's total trade) for each of A's trade partners and then sum these together.

coefficients indicate the association between exposure and cooperation/conflict in the specific instance that neither state is a major trade partner of the other. The various interaction terms inform us on how these associations differ as each constituent term varies.

### 4.2 Other Explanatory Variables

We include control variables intended to mitigate spurious correlation, as well as to improve model fit. Towards this end, we control for a number of factors that could influence the structure of a state's trade portfolio well as the frequency with which a state initiates cooperative or conflictual events. We also control for factors that could correspond to the presence of domestic interests either preferring more conflict or cooperation with trade partners.

First, we control for the dyadic trade balance, given potential consequences for the receptiveness of the initiator's public to export interests vs. import-competing interests We operationalize this measure as the natural log of the initiator's exports to the target minus the natural log of the initiator's imports from the target, using Comtrade data. This measure has a useful symmetry in which a trade balance would be recorded as zero, while equivalent trade surpluses and deficits would take positive or negative numbers of equal magnitude. We suspect that a higher initiator trade deficit could drive firm and public behavior in favor of more adversarial foreign policy. In order to demonstrate that our results are not merely a rehash of previous findings on dyadic trade dependence (e.g., Barbieri 1996; Peterson 2014), we also include controls for dyadic trade volume as a proportion of each state's GDP, as well as an interaction of these indicators. These controls are useful to improve model fit and control for possible asymmetry in reliance on dyadic trade. Notably, our key explanatory variables are not coded in terms of trade volume but rather vary as a function of trade shares; thus these controls are capturing a distinct aspect of dyadic trade. However, we find that results look substantively similar if we omit these trade/GDP controls.

The causal mechanisms we advocate are not limited strictly to democratic states, as autocratic leaders are responsive to at least some subset of domestic interests that compose the winning

coalition (Bueno de Mesquita et al. 2004). Given that democracies are more responsive to the preferences of mass publics, however, for both the initiator and target, we include a dichotomous indicator of democracy equal to 1 if a state scores at least a 7 on the 21-point combined Polity score (Marshall and Jaggers 2014). We also include an interaction of these variables to account for the fact joint democracies are generally more peaceful while mixed dyads are most conflict-prone.

To account for political affinity that might influence both political interaction type (and frequency) as well as trade levels, we control for the presence of a dyadic alliance using data from the Correlates of War Formal Alliance data (v4.1, Gibler 2009). We include a dyadic capability ratio operationalized as natural log of the initiator's composite index of national capabilities (CINC) score minus the natural log of the target's CINC score (Singer 1987). Again, this specification provides a useful symmetry as 0 indicates power parity, while initiator preponderance would receive a positive score and equivalent target preponderance would be coded as the equivalent negative score.

Finally, we include a group of control variables associated with "gravity," which likely applies to political interactions as well as trade. For both states, we include measures of (logged) state GDP and (logged) population from the World Development Indicators as measures of economic power to engage in higher numbers of political interactions. We include an indicator of average dyadic distance from Weidmann, Kuse and Gleditsch (2010). Finally, we include a dichotomous indicator of shared borders, i.e., contiguity. All else equal, we expect shared borders to promote trade and political interactions, while greater average distance should imply fewer interactions generally and less trade.

#### 4.3 Estimation

We estimate ordinary least squares linear regressions using the systemfit package version 1.1-20 in R.<sup>13</sup> Keeping in mind that our dependent variables are coded for the year t+1, we include year t indicators for both event types (i.e., a lagged dependent variable and a lag of the other outcome variable) in each equation. These lags account for history, potentially addressing omitted variable bias.<sup>14</sup> The lags are also useful to account for possible serial correlation.

## 5 Analysis

We find evidence largely in support of our hypotheses in regression models examining political cooperation and conflict. States initiate more conflict and cooperation with major trade partners; however, the magnitude of this association diminishes as the breadth and depth of global economic exposure increases. Further, states initiate more cooperation with non-major partners as global economic exposure increases.

#### [Table 1 about here]

Table 1 presents our main results, directed dyad-year OLS models in which we estimate the (logged) initiation of cooperation and conflict. The explanatory variables of interest capture an interaction between major trade partner status and each dyadic state's level of economic exposure. First, the coefficient estimate for the *Mutual Major Trade Partners* variable is positive and significant in both equations. All else equal, when both dyadic states maintain an average level of exposure (which we re-scaled to equal 0), mutual major trade partner status is associated with a higher level of conflict and cooperation initiation. Similarly, the two coefficients identifying

<sup>&</sup>lt;sup>13</sup>We use systemfit because it allows us also to specify seemingly unrelated regression (SUR) of our two equations. The SUR approach allows us to account for the fact that conflict and cooperation initiation are related processes. All results are consistent using SUR. However, a likelihood ratio test confirms that OLS models are preferable.

<sup>&</sup>lt;sup>14</sup>We find similar results when including year fixed effects as an alternative modeling strategy. We also find similar results if we include only the LDV and not a lag of the other event type.

asymmetric major trade partner status similarly are positive and significant in both equations, though lesser in magnitude. The coefficients for KOF economic globalization for both initiator and target show that, for non-major trade partners, there is a positive association with cooperation and a negative association with conflict, though the negative coefficient for conflict is just outside the 0.05 significance threshold. Importantly, the estimates for the interaction terms between all three major trade partner status variables and each state's KOF variable are all negative and significant, indicating diminishing associations between major trade partner status and the initiation of dyadic events at higher levels of global economic exposure for either the initiator or the target.

To facilitate clarity, in Figure 2 we plot predicted values of conflict and cooperation for the four possible compositions of major trade partner status. In this figure, we increase state 1's (the initiator's) level of exposure from the 25th to the 75th percentile while holding most other variables at their median values. 15 When both states are mutual major trade partners (MTP), state 1's conflict and cooperation toward state 2 (the solid lines) are much higher than the case of non-major trade partners (the dotted lines). However, as the breadth and depth of state 1's economic ties increases, its cooperation level decreases by around .3 and conflict by around .03. To put it differently, as state 1's exposure level increases from the 25th to the 75th percentile, its cooperation with state 2 decreases by around 30% and conflict by around 20%. It should be noted, however, that even though predicted cooperation declines relatively more than predicted conflict, cooperation remains much more common. Even at the 75th percentile of initiator exposure, major trade partners experience more than twice the magnitude of cooperative events as nonmajor trade partners (approximately 1.16 vs. 0.54). At this same level of initiator exposure, we predict conflict with mutual major trade partners at a magnitude of 0.076, vs. 0.055 for nonmajor partners. There is one final, if modest finding from Figure 2: we observe a slight increase in cooperation with mutually non-major trade partners (NMTP) as the initiator's exposure deepens.

<sup>&</sup>lt;sup>15</sup>We hold the lagged indicators of conflict and cooperation at their means since their median are both 0. The predicted values change but the pattern is the same when using the median. Here we choose to show a more interesting case when states have both cooperative and conflictual interaction in the previous year.

The patterns for asymmetric major trade partner status (long-dashes when the initiator is a major trade partner of the target; dash-dots when the target is a major trade partner of the initiator) look similar, but lesser in magnitude. However, it is notable that asymmetric major trade partner status is associated with higher cooperation nearly to the extent of mutual major trade partner status, whereas predicted conflict in the case of asymmetric trade partner status is only slightly higher than the case where neither state is a major trade partner of the other. This latter finding has implications or the study of asymmetric dependence. Asymmetric major trade partner status appears not to function the same way as asymmetric trade share or exit costs as identified in previous research (Barbieri 1996; Peterson 2014).

#### [Figure fig. 2 about here]

We present visuals of conditional marginal effects to complement our discussion of predicted values. Given the model incorporates logged dependent variables, we plot the conditional marginal effects in Figure 3 where the y-axis denotes percentage change of respective events. We transform the conditional effects by exponentiating the value, subtracting 1, and multiplying the value by 100. Panel (a), for instance, suggests when state 1's economic exposure is at the 25th percentile, it initiates around 200% more conflict (80% more cooperation) with mutual major trade partners as compared to mutual non-major trade partners (the benchmark for comparison in the three panels). We can see across all three top panels that major trade partners status does increase both cooperative and conflictual interactions, but the effects decline as a state's economic exposure rises. The bottom panel demonstrates that, for non-major trade partners, there is a positive and significant marginal effect of global economic exposure on cooperation. For symmetric or asymmetric major trade partner status, however, the marginal effect of global economic exposure is actually negative with respect to both cooperation and conflict, possibly because states have more options for interactions.

#### [Figure fig. 3 about here]

In order to improve our understanding of relative cooperation and conflict, we re-specified our OLS models using two recalculated dependent variables: the ratio of cooperation to conflict, <sup>16</sup> and the total of cooperation plus conflict. <sup>17</sup> Visuals of results are shown in Figure 4; we present the full table of results in the appendix to save space. The right panel confirms the findings we discuss above: as a state becomes more exposed to the global economy, its overall interaction with major trade partners decreases, while overall interactions with non-major trade partners slightly increase. The left panel further demonstrates that the shift can be attributed to the change in cooperative interaction. Specifically, the left panel plots the effect of global economic exposure on cooperative interactions relative to conflictual ones. When state 1's exposure is low (at the 25th percentile), in the case of mutual major trade partner status, state 1's cooperative event initiation is toward state 2 is roughly 13 times that of conflict. When only state 2 is a major trade partner of state 1, cooperation exceeds conflict disparity by a factor of around 15. Yet, as its global trade exposure rises, these ratios drop, indicating that state 1 initiates less cooperation relative to conflict. Meanwhile, for non-major trade partners, state 1 appears to initiate more cooperation, relative to conflict, when its global economic exposure rises.

#### [Figure fig. 4 about here]

We performed several robustness checks to ensure the results are not driven by arbitrary modeling or operationalization choices, all of which can be found in our supplementary appendix along with descriptions of our data. The results across these additional models remain substantively similar to those presented here.

<sup>&</sup>lt;sup>16</sup>We code this variable as the log of cooperation (plus 0.01) minus the log of absolute conflict (plus 0.01). This coding ultimately captures a ratio similar to the specification of relative capabilities or dyadic trade balance, as log(a) - log(b) = log(a/b).

<sup>&</sup>lt;sup>17</sup>This variable is coded as the log of summed cooperation and absolute conflict values. We add 0.01 before taking the log.

## 6 Conclusion

We find support for our expectation that states engage in more cooperation and more conflict on average with major trade partners, but this association is strongest when the initiator's global economic exposure is low, declining as exposure increases. Our study puts contemporary political disputes among major trade partners such as the United States and China into perspective. While we have seen political conflict in recent years, our findings suggest that it would have been higher still in a counterfactual situation in which either or both trade partners were less exposed to the global economy. Further, some US-China interactions could be interpreted as declining cooperation—e.g., failure to maintain lower trade barriers—rather than as an increase in conflict. Contrary to previous models that focus on armed conflict, our theoretical model can explain such behavior.

Though severe armed conflict appears to be increasingly rare, political conflict remains common. And it is useful to consider how the average level of political conflict corresponds to the average degree of cooperation; our understanding of international politics is increased when we consider positive and negative interactions together. Further, our findings call into question the optimistic conclusions of the opportunity cost and signaling theories of trade and conflict, and could reinforce concerns regarding the potential for backlashes against liberal trade policy (Bussmann and Schneider 2007; Schneider 2014). Prevailing models typically assume that leaders are responsive (only) to groups harmed by the prospect of trade restrictions, whereas our model explores the consequences for international relationships when we begin with the explicit assumption that leaders are responsive to heterogeneous domestic preferences.

Notably, this study is a first look at trade and international politics from a new perspective, focusing on structural patterns in trade dispersion and consequential variation in behavior. Our purpose is *not* to explore differences in domestic preferences, but rather to consider big-picture consequences of the fact that heterogeneous preferences almost certainly exist and governments

will likely be responsive to many groups. The complexity of our research question necessitates that no single study can cover it exhaustively. Ours is a first step towards considering how these factors work. Future research can open the black box of domestic politics to consider variation in presence, strength, and preferences of domestic groups that could affect the frequency and severity of cooperation and/or conflict against major trade partners. For example, it would be worthwhile to consider the degree to which states engage in global production sharing and intrafirm trade, which might promote complementary interests across trade partners to a greater extent than traditional inter-industry trade.

Future researchers also can explore the mechanisms through which we expect trade exposure to affect political relationships. Though cross-national lobbying data are rare, it might be possible, at least for states that make data available to the public, to classify lobbying expenditures in terms of whether the principals are domestic groups that have interests in either restricting or expanding trade. Campaign donations could similarly be categorized. To assess the degree to which public opinion is mobilized, future researchers could apply text analysis to scrutinize op eds across leading news sources.

Finally, a number of state-level factors might condition the degree to which trade exposure affects cooperation relative to conflict. For example, variation in state institutions, even within democracies, could affect the degree to which leaders respond to the preferences of narrow interest groups. Federalism could promote leader advocacy of narrow interests irrespective of potential national harm, whereas unitary governments might experience behavior closer to the predictions of the opportunity costs and costly signaling models in which leaders face incentives not to recklessly endanger national-level welfare. Similarly, more comprehensive welfare states might reduce the incentives of groups harmed by trade exposure to demand leader action against major trade partners. Both of the above factors could lead one to predict that the United States would experience a less pacifying effect of trade—or perhaps conditions more prone to backlashes in line with the disturbance-response mechanism—than would e.g., states in Europe. Future research

would benefit from exploring this possibility.

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Table 1: OLS coefficients and 95 percent confidence bounds for lagged events model, 1995-2012

	Dependent Variables	
	Cooperation	Conflict
Coop Level	0.47*** (0.46, 0.47)	0.05*** (0.05, 0.05)
Conf Level	0.20*** (0.19, 0.20)	0.43*** (0.43, 0.44)
KOF 1	0.33*** (0.26, 0.39)	-0.02 (-0.05, 0.01)
KOF 2	0.33*** (0.27, 0.39)	-0.02 (-0.05, 0.01)
Mutual Major Trade Partners	0.94*** (0.90, 0.99)	0.43*** (0.40, 0.45)
1 Is Major Partner of 2	0.62*** (0.59, 0.65)	0.05*** (0.04, 0.06)
2 Is Major Partner of 1	0.64*** (0.61, 0.66)	0.05*** (0.04, 0.07)
Trade/GDP 1	-0.001 (-0.004, 0.003)	0.01*** (0.01, 0.01)
Trade/GDP 2	-0.0005 (-0.004, 0.003)	0.01*** (0.01, 0.01)
Trade Balance	0.0002 (-0.001, 0.002)	-0.0000 (-0.001, 0.001)
CINC Ratio	0.003 (-0.01, 0.01)	$-0.01 \ (-0.01, \ -0.001)$
log Distance	$-0.27^{***}$ (-0.28, -0.27)	0.004 (0.001, 0.01)
log Population 1	0.02*** (0.01, 0.03)	$0.0002 \; (-0.005,  0.01)$
log Population 2	0.02*** (0.01, 0.03)	$-0.01^{**} (-0.02, -0.01)$
log GDP 1	0.18*** (0.17, 0.19)	0.03*** (0.02, 0.03)
log GDP 2	0.18*** (0.17, 0.19)	0.02*** (0.02, 0.03)
Democracy 1	$-0.17^{***} (-0.19, -0.15)$	0.03*** (0.02, 0.04)
Democracy 2	$-0.18^{***} (-0.20, -0.16)$	0.01 (0.002, 0.02)
Alliance	0.22*** (0.19, 0.24)	0.09*** (0.08, 0.10)
Contiguity	$-0.31^{***} (-0.36, -0.25)$	0.23*** (0.20, 0.25)
KOF 1:Mutual Major Trade Partners	$-1.50^{***}$ $(-1.73, -1.26)$	$-1.21^{***}$ $(-1.32, -1.10)$
KOF 1:1 Is Major Partner of 2	$-0.62^{***} (-0.77, -0.46)$	$-0.34^{***}$ $(-0.41, -0.27)$
KOF 1:2 Is Major Partner of 1	$-1.08^{***} (-1.22, -0.94)$	$-0.17^{**} (-0.23, -0.10)$
KOF 2:Mutual Major Trade Partners	-1.46***(-1.69, -1.23)	-1.38***(-1.49, -1.27)
KOF 2:1 Is Major Partner of 2	$-1.06^{***} (-1.20, -0.91)$	$-0.26^{***} (-0.33, -0.19)$
KOF 2:2 Is Major Partner of 1	$-0.66^{***} (-0.81, -0.51)$	$-0.42^{***} (-0.49, -0.35)$
Trade/GDP 1:Trade/GDP 2	$-0.01^{***} (-0.01, -0.01)$	0.005*** (0.004, 0.01)
Democracy 1:Democracy 2	0.20*** (0.17, 0.23)	$-0.06^{***} (-0.07, -0.05)$
Constant	$-8.18^{***} (-8.35, -8.01)$	$-3.50^{***}$ $(-3.58, -3.42)$
Observations	321544	321544
$R^2$	0.532	0.32
Adjusted R <sup>2</sup>	0.532	0.32

*Note:* \*p<0.1; \*\*p<0.05; \*\*\*p<0.01

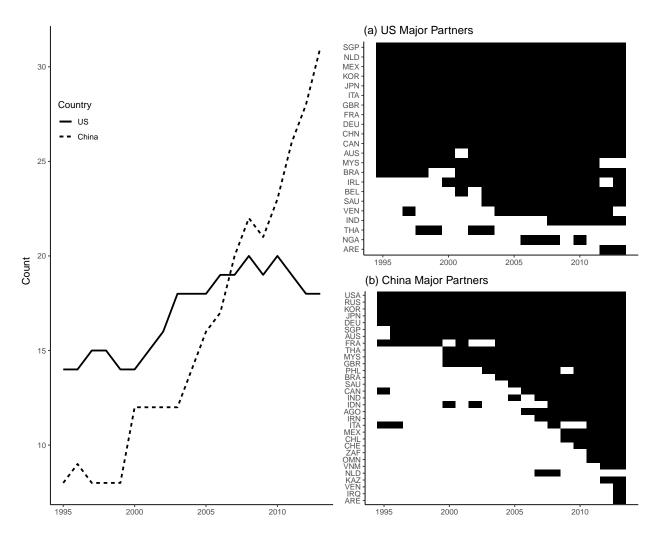


Figure 1: US and China Major Trade Partners Over Time. The left panel plots the count of major trade partners while the right panels plot the respective breakdown by country, where black indicates major trade partner status in a given year.

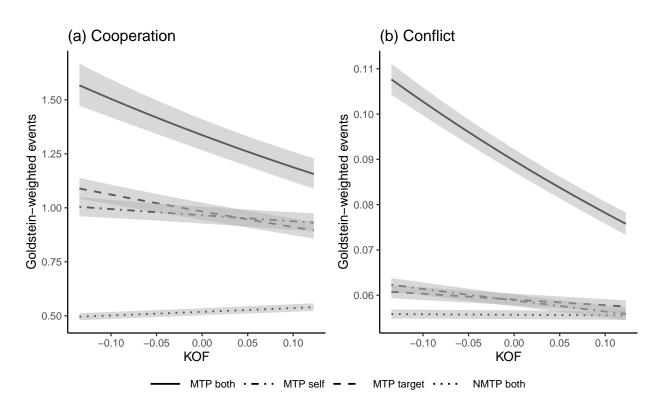


Figure 2: Predicted levels of cooperation and conflict from Table 1, with 95% confidence intervals, over the 25%-75% range of global economic exposure

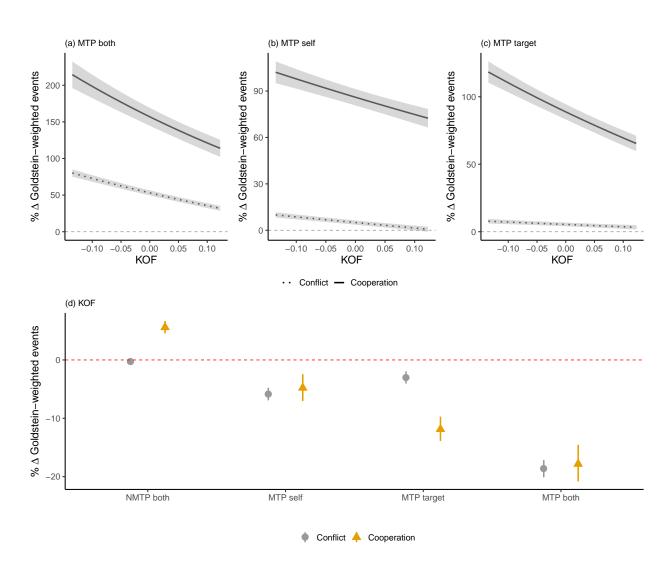


Figure 3: Marginal effects and 95% confidence bounds from Table 1

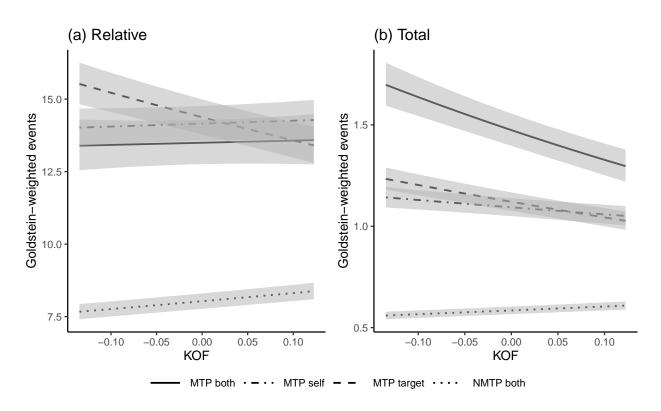


Figure 4: Predicted levels of cooperation and conflict from Model 2, with 95% confidence intervals, over the 25%-75% range of global economic exposure