International Trade, Cooperation, and Conflict: The Role of Institutions and Capabilities*

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Abstract

In this paper, we reconcile divergent theories linking trade to conflict—opportunity costs and costly signaling on one hand vs. dependence and coercion on the other. We argue that variation in domestic political institutions and state capabilities can condition how international trade affects conflictual or cooperative political relationships. When institutions result in a more nationally representative constituency, trade has a relatively more negative association with conflict, whereas deviation from this institutional arrangement reduces the pacifying impact of trade. The presence of greater military capabilities incentivizes leaders to use trade as a lever to advance other state interests. As such, for more powerful states, trade is associated with relatively more conflict and cooperation. We find support for our expectations in statistical tests spanning 1994-2012.

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1 Introduction

Large yet divergent literatures consider how international trade affects political relationships between states. Scholars broadly aligned with the liberal perspective have developed the opportunity costs model, arguing that the economic gains from trade would be lost with the onset of war and therefore constrain leaders' aggressive impulses (e.g., Angell 1913; Russett and Oneal 2001; Polachek and Xiang 2010). Arriving at a similar conclusion with different logic, studies considering the role of information in a bargaining environment have developed the costly signaling model, arguing that threats are more credible and thus more likely to be believed when the leader issuing a demand risks damaging an existing trade relationship (e.g., Morrow 1999; Gartzke, Li and Boehmer 2001). While the specific reasoning differs, these models share an assumption that leaders are responsive to domestic groups benefiting from trade. A largely separate line of research considers how trade could promote asymmetric dependence among trade partners, incentivizing less dependent states to coerce their trade partners (Hirschman 1945; Keohane and Nye 1977; Farrell and Newman 2019), and potentially provoking armed conflict as a result (Barbieri 1996; Peterson 2014). These studies consider scenarios where leaders disregard the domestic groups that would be harmed by lost trade, either because these groups are unable to retaliate effectively to impose costs on leaders or because leaders deem the pursuit of some other interest as worthwhile despite the anticipated backlash.

We contend that these perspectives can be reconciled by considering their distinct and sometimes implicit foundational assumptions instead as variables. We focus specifically on structural determinants of the trade-politics relationship: domestic institutions and state capabilities. We demonstrate that peace-through-trade arguments work best under the assumption that leaders consider national welfare holistically. We argue that domestic institutions promoting a broadly inclusive, nationally representative constituency foster a more pacifying impact of trade, all else equal. Additionally, we argue that the opportunity for leaders to link trade to other state interests increases when states hold greater military capabilities. Thus, for more powerful states, trade is increasingly leveraged to achieve broader goals, and as such becomes associated with relatively more conflict *and* cooperation.

We test our expectations in two steps. First, we examine whether and how much statespecific variation exists in the trade-conflict and trade-cooperation relationships. To do so, we estimate linear mixed effects models on the intensity of dyadic conflict and cooperation, specifying random slopes for the trade dependence of the initiator on the target of dyadic events. Second, we use these estimates in subsequent state-level models where the key explanatory variables capture domestic institutional features and state capabilities. We find that states do vary in how trade affects political interactions; and we find support for expectations that democracies with more nationally representative institutions see a stronger negative association between trade and conflict relative to less nationally representative democracies. We also find evidence that states with greater military capabilities see a stronger positive association between trade and political interactions broadly—cooperative and conflictual.

We depart from the previous literature by demonstrating that the trade-conflict and tradecooperation relationships are highly variable, and then explaining fundamental, structural determinants of this variation. Our approach is ambitious as it ties together large literatures on trade and politics with the similarly large literature on sanctions (e.g., Drezner 1998; McLean and Whang 2014; Peterson 2020), while also drawing insight from the literature on how trade exposure has varying effects on individual attitudes (e.g., Kleinberg and Fordham 2013; Rho and Tomz 2017). Our argument can be distinguished from the capitalist peace, which examines how liberal policy on international trade empowers domestic commercial interests with preferences to preserve peace (Mousseau 2000; Gartzke 2007; McDonald 2009). Whereas the capitalist peace argument leaves open the question of when trade-competing interests might influence policymaking, we distinguish conditions fostering leader responsiveness to narrow interests from those facilitating a broad consideration of national welfare. And while liberal policies associated with the capitalist peace can be adopted and abolished with relative ease, we take a step back to consider how deeper structural features determine to which interests leaders are responsive and how they weigh trade gains against other goals of foreign policy. This focus is timely as it can help explain variation in the populist backlash against globalization that has been occurring in Western states.

2 Divergent Structural Assumptions in Theory

Studies falling within the best known strand of the trade-conflict literature, which links higher trade volumes to greater prospects for peace, assume either explicitly or implicitly that leaders would suffer if trade were reduced. In the opportunity costs model, leaders exercise restraint to preserve trade gains that would be lost with the onset of armed hostilities (e.g., Polachek and Xiang 2010). This logic works well if leaders would be punished by actors who lose the welfare gains from trade following the onset of hostilities. Conversely, if leaders faced no such backlash, they would likely face fewer incentives to maintain any particular trade relationship. The costly signaling/informational argument takes a different approach, applying the bargaining model of war (Fearon 1995) to the study of trade and conflict. It contends that threats are viewed as more credible by their targets as the challenger's trade dependence increases, precluding misunderstandings that could escalate to armed conflict (Morrow 1999; Gartzke, Li and Boehmer 2001). Again, however, this logic rests on the assumption that leaders are responsive to trading interests who would punish irresolute leaders for recklessly risking the profits of trade. Both of these models ignore the possibility that, while lost trade reduces aggregate state welfare, leaders might not care if they personally face no repercussions from their backers (Bueno de Mesquita et al. 2004).

In reality, trade creates winners and losers with opposing interests in the maintenance of trade. For example, the Stolper-Samuelson model (Stolper and Samuelson 1941) predicts political

conflict between holders of different factors of production (e.g., land, labor, or capital; or educated, high-skilled labor vs. low-skilled labor). Holders of an abundant factor benefit from open trade and so support liberal trade policy. Holders of a scarce factor of production are harmed by open trade and so support protectionist trade policy (Rogowski 1987). Alternatively, the Ricardo-Viner model predicts political conflict between industry sectors that benefit from or are harmed by exposure to international trade, particularly when factor mobility—i.e., the ability to employ one's factor of production within a different industry—is low (Hiscox 2001). Both of these models predict that individual economic self-interest drives trade policy preferences; and studies have found support for this proposition (Fordham and Kleinberg 2012), particularly when individuals are informed regarding the winners and losers of trade policy (Rho and Tomz 2017). Other studies suggest that political competition over trade policy could stem from cultural divides, for example by race and gender (Guisinger 2017, also see Mansfield, Mutz and Silver 2015 on gender), or from in-group favoritism and nationalism (Mansfield and Mutz 2009; Mutz and Kim 2017).

Research finds that groups harmed by open trade are also more likely to perceive trade partners as threats (Kleinberg and Fordham 2013). Thus, domestic groups that are opposed to open trade are unlikely to disapprove of aggressive foreign policy merely because such actions put trade ties at risk. To the extent that leaders make policy on behalf of non-trading and trade-competing interests (Peterson and Zeng 2021), the welfare gains from trade would fail to curb leaders' aggressive impulses; opportunity costs could fail to promote restraint. Similarly, costly signaling would fail if the target of a demand understands that the leader issuing the threat is not accountable to the domestic interests that would lose given a reduction in trade. The solution to this complication, sometimes left unstated, is the key assumption that leaders prioritize national-level welfare. Trade is welfare enhancing at the state level, and holds tangible benefits for all consumers who see lower prices relative to the counterfactual case of autarky. If leaders value these aggregate welfare gains, then, to the extent that conflict or the expectation thereof reduces trade (Long 2008), we would expect more hesitance to engage in (particularly

irresolute) aggressive behavior as trade increases.

The models discussed above stand in contrast to a similarly large literature on trade dependence, vulnerability, and coercion leading to conflict.¹ Rather than promoting foreign policy restraint, these studies view trade as a source of foreign policy leverage (e.g., Hirschman 1945; Keohane and Nye 1977; Farrell and Newman 2019; Peterson 2020; Akoto, Peterson and Thies 2020). This perspective has facilitated research into the role of symmetry of trade dependence in conditioning the link between trade and conflict, as the leaders in less trade-dependent states could attempt to coerce their more dependent trade partners; and anticipation of this behavior could incentivize the initiation of armed conflict by leaders of the more trade-dependent states (Barbieri 1996; Peterson 2014).² The idea that trade can be leveraged towards coercive ends is not in complete contrast to peace-through-trade models discussed above because sanctions are a lesser form of conflict; sanctioning could be an alternative to full-blown armed conflict (Baldwin 1985). In practice, however, research suggests that states use sanctions when they expect future conflict (Drezner 1998), and that sanctioning ties leaders' hands, leading directly to future escalation (Lektzian and Sprecher 2007).

While nothing in the dependence and coercion literature contradicts the assumption that interests benefiting from trade would oppose aggressive foreign policy actions that threaten those trade gains, these studies are premised on the idea that, at least under some conditions, leaders disregard the preferences of interests wishing to preserve trade ties. Some studies examine how the preferences of trade-opposed groups or the broader public can facilitate the use of sanctions (Kaempfer and Lowenberg 1988; McLean and Whang 2014; Heinrich, Kobayashi and Peterson 2017). More common, however, is the strategic approach (Kobayashi 2018): a focus on (as-if) unitary actor decision-making in which leaders could consider the possible loss of trade ties to be

¹A study by Copeland (2015) synthesizes the realist view of the relationship between trade and conflict with the liberal views discussed above, arguing that whether trade promotes peace or conflict depends on leaders' expectations regarding future trade rather than on current trade relationships.

²Alternatively, asymmetry might promote "cheap" threats that fail to inform (Gartzke and Westerwinter 2016).

worthwhile if their actions secure some other, more highly-valued, foreign policy objective (Ang and Peksen 2007).

3 Trade and International Politics: The Role of Domestic Institutions and State Capabilities

We argue that the structural assumptions in various models linking trade to conflict are more usefully considered as variables. More specifically, we contend that domestic political institutions, particularly within democracies, affect the degree to which leaders consider the gains from trade holistically rather than narrowly, while state capabilities affect leader prioritization of preserving trade relative to furthering other state interests. We begin with the assumption that, in essentially all states, there are winners and losers to trade. We further assume that winners to trade will be more likely to support peace and cooperation with trade partners out of self-interest, while the losers will lack this preference—and in some cases might even support conflict, or at least reduced cooperation, with trade partners. And critically, we assume that leaders who make policy decisions regarding international conflict and cooperation are accountable to at least some of their citizens (Bueno de Mesquita et al. 2004). Finally, we assume that leaders of more militarily powerful states face more opportunity to link trade to other state interests.

3.1 Institutional Determinants of National Representation

As noted above, the opportunity cost and costly signaling models assume that leaders are responsive to trading interests, which are (sometimes implicitly) considered in terms of the broad state level. In reality, leaders do not necessarily think in terms of what is best for their citizens as a whole; narrow interests could affect policy at times. Yet, there is variation in domestic institutions with direct relevance regarding the constituency to which leaders are responsive. We contend that leader behavior comes closest to what unitary actor models predict when leaders are more responsive to something approaching a broadly national constituency. This condition is better met when institutions facilitate greater national *representation* of citizens.

National representation is enhanced when citizen preferences are more directly channeled to leaders through elections. Among democracies, we expect proportional representation (PR) to be associated with leaders selected from a group that looks more like the national population (Powell 2000; Lijphart 1999). Diverse interests may exist in PR, yet the potential for greater party and preference diversity suggests that broader coalitions will form. At the very least, minority groups will less likely be excluded from government, suggesting that more compromise with and accommodation of their preferences will result, relative to single-member district plurality (SMDP) electoral systems. PR legislatures might be more likely to engage in embedded liberalism (Ruggie 1982) to reduce opposition to open trade (Hayes, Ehrlich and Peinhardt 2005). As a result, redistribution within PR might reduce the prevalence of groups strictly opposed to open trade, creating a shared national stake in the continuation of trade relationships. Furthermore, PR reduces the likelihood that small groups of losers to trade exposure might nonetheless dominate policy following from empowerment via unrepresentative districting (e.g., gerrymandering) common in SMDP systems.³

Taking the consideration of national representativeness a step further, we expect that leaders are more likely to consider the costs and benefits of foreign policy in a holistic fashion when institutions broadly empower ordinary citizens rather than privileged elites. Elites often attempt to co-opt institutions to enrich themselves while passing on costs (whether financial, environmental, etc.) to the broader population. In previous work, Joshi, Maloy and Peterson (2015; 2019) identify institutional features that enable or constrain elite domination. These authors develop an indicator

³Notably, our theoretical argument is that institutional representativeness at the national level *moderates* the tradeconflict relationship. One might counter that the institutional determinants of the trade-conflict relationship is *mediated* because institutions affect trade policy, which in turn affects conflict-proneness. However, previous research shows that PR has no independent impact on level of trade protectionism (Ehrlich 2007).

of *institutionalized popular inclusion* that incorporates formal rules that maximize participation (universal suffrage, automatic voter registration, and compulsory voting), along with electoral systems that promote greater representation of diverse interests (proportional representation, as discussed above), and structures that limit elite veto power (unicameralism). The authors note that these features work as an ensemble to maximize representation, and together compose an under-studied dimension of variation in democratic regimes. We contend that these features would accordingly promote a broadly national constituency that enhances the pacifying impact of trade.

Critically, for representation to foster a more negative effect of trade on conflict does not require that citizens support openness to trade, nor that they are well informed regarding the benefits thereof (Destler 2005; Hiscox 2006). Leaders working within more nationally representative institutions are relatively better incentivized to promote welfare for the state as a whole. Few scholars would dispute the fact that it was an international *elite* consensus that fostered the emergence of the neoliberal trade regime beginning in the latter half of the 20th century. Our contention is that leaders working within more nationally representative institutions will not enable these elites to capture all of the resulting profits while allowing ordinary citizens to suffer.⁴ Indeed, for states with less nationally representative institutions, the fact that elites ushered in liberalism despite opposition (or inattention) by ordinary citizens creates a tension that could threaten the pacifying impact of trade unless pro-globalization elites maintain tight control on leaders. Recent years have seen a rise in anti-globalization sentiment that has mobilized groups standing to benefit from political conflict with trade partners (Truman 1952; Munger 2004). While this phenomenon appears (nearly) universal among developed democracies, our argument suggests that these effects should be relatively weakest when trade is conducted under the most nationally representative democratic institutions.

⁴Why would such leaders allow globalization at all? We contend that the prospect of aggregate welfare gains would incentivize (at least some degree of) globalization regardless of representation.

Within democracies, our logic relies on the idea that trade is nationally welfare-enhancing and thus should be more pacifying when institutions promote national representation. However, comparing democracies to authoritarian regimes raises caveats. Given that welfare gains from trade arguably constitute a public good, one might assume that democratic leaders would secure and protect trade gains relatively more than authoritarian leaders who are responsive to a smaller winning coalition (Bueno de Mesquita et al. 2004). However, a key distinction exists in the fact that democratic leaders in most cases are separate from trading interests on whose behalf they (might) advocate; authoritarian leaders are better able, on average, to extract rents from trade to enrich themselves directly. An authoritarian leader who enriches herself through trade might avoid conflict to preserve that direct source of income. In this case, the authoritarian leader is responsive to trading interests because she is one; national representation is irrelevant in this case.

Finally, it is important to note that the argument above does not imply that holistic, nationallevel constituencies promote a stronger trade-cooperation relationship. While one might initially assume that the conflict-precluding mechanisms discussed above should also be cooperationpromoting, it is not clear that the opportunity cost and costly signaling mechanisms do in fact extend to cooperation. For example, failure to increase cooperation (e.g., via alliance formation) would not result in the loss of expected trade revenue. While cooperation could facilitate increased trade volume, there is likely uncertainly regarding how such trade gains would be realized, which could introduce variation into any leader incentives to achieve greater political cooperation.

Our first hypothesis follows:

Hypothesis 1 Within democracies, institutional features fostering a broadly national constituency to which leaders are responsive are associated with a relatively more negative association between trade and conflict

3.2 Capabilities and the Balance of State Interests

A key feature distinguishing the opportunity costs and costly signaling models from theories of dependence and coercion is that the latter focus on scenarios in which leaders view the maintenance of trade to be less important than the pursuit of some other state interests. While, all else equal, the retention of trade gains is in a state's interest, all else is not equal with respect to state roles in the international system. As military power grows, leader incentives expand beyond survival and prosperity towards international influence (Holsti 1970; Thies 2009). Leaders recognizing their comparative advantage in military power will be more likely to see the military as a means of achieving state objectives. This militaristic mindset extends to non-military phenomena such as trade, which is thus more likely to be used as a lever of coercion to achieve foreign policy goals. China has increasingly engaged in this kind of behavior as its military has grown, for example, in 2020 banning imports of coal from Australia after Australia criticized China's management of the coronavirus outbreak (ABC News 2020). However, even within democracies, greater military power can change the perception of leaders and the public to which they respond. For example, within the United States, policy-makers use economic sanctions as a means of responding to public demand for action against foreign states engaging in proscribed behavior (Whang 2011).⁵

We argue that leaders in more powerful states are more likely to link trade to other issues and view trade relationships as a means to advance other, often security-related, state interests (Farrell and Newman 2019). As a result, holding constant the scope of the domestic constituency, increasing state capabilities will lead state leaders to become relatively less responsive to domestic interests favoring the maintenance of trade because they weigh the national benefit thereof as increasingly less important than other policy goals. If trade has a generally pacifying impact, then greater capabilities would serve to reduce the magnitude of this effect. Furthermore, given that

⁵According to the Threat and Imposition of Economic Sanctions (TIES) data (Morgan, Bapat and Kobayashi 2014), the US is a sender in more than half all sanctions episodes initiated between 1946 and 2005. Out of 1,246 TIES cases, the United States is the primary sender in 681 (54%). Indeed, a small number of senders—many of which are among the most powerful states—are responsible for most sanctions episodes.

this mechanism centers on issue linkage, leaders have more flexibility in how they leverage trade to advance various foreign policy goals. In addition to threatening and imposing trade restrictions, states could offer aid, seek alliances, or form other cooperative agreements with trade partners. As such, we expect that the trade-conflict *and* trade-cooperation associations will become more positive as state capabilities increase.

Our second hypothesis follows:

Hypothesis 2 Greater state capabilities are associated with a relatively more positive association between trade and conflict, as well as trade and cooperation

4 Research Design

We test our hypotheses in two steps. First, using data at the directed dyad level of analysis spanning 1994-2012,⁶ and specifying linear mixed effects models, we estimate country-specific slopes for the relationship between trade and political interactions. We then use these estimates as dependent variables in subsequent regressions at the state level of analysis.⁷ This two-step approach more directly reflects our theory, examining state-level expectations within state-level statistical analyses.⁸

⁶Though data availability limits us to a relatively short time span, these years are useful to isolate a relatively comparable period—post-Cold War, beginning right as the World Trade Organization emerged.

⁷These slopes are estimated with uncertainty; this uncertainty is incorporated into the error term of the state-level regressions.

⁸Further, to address our expectations in a single step would add considerable complexity to specification and interpretation, as it would require the inclusion of numerous multiplicative interaction terms. We did specify models to test our hypotheses in a single step, finding generally consistent results. These results are reported in the appendix.

4.1 Estimating Varying Trade-Politics Relationships

For our linear mixed effects models examining political interactions.⁹ we use directed dyad year data spanning 1994-2012.¹⁰ We code two dependent variables capturing the intensity of *initiation* of dyadic conflict and initiation of dyadic cooperation. To code these DVs, we use the Integrated Conflict Early Warning System (ICEWS) events data (Lautenschlager, Shellman and Ward 2015). The ICEWS proprietary algorithm codes a wide variety of dyadic events using English and foreign language news stories, identifying the actor that initiated the event as well as the target of the action. In order to identify the intensity of cooperative and conflictual events by dyad-year, we sum the Goldstein-weighted directed government-to-government events for each directed dyad vear (Goldstein 1992).¹¹ and then take the natural log (first adding 0.01 to avoid taking the log of 0).¹² This weighting scale comes from expert survey and accounts for frequency and severity of both cooperation and conflict behavior. A full-blown military clash is coded as a -10 on this scale, while a less severe event such as the expulsion of an organization or group is coded -4.9, and the issue of a formal complaint is coded -2.4. Regarding cooperation, the extension of military assistance is the largest weight, at 8.3. Less severe examples of cooperation includes the promise of future support (4.5) and an official state visit (1.9). Both dependent variables are coded for the year t+1 in order to prevent simultaneity bias and reduce the potential for reversed causation.¹³

⁹We estimate these models using the Ime4 package version 1.1-23 in R version 4.0.2. Linear mixed effects models are useful to account for unit heterogeneity that could violate the critical assumptions that observations are independent. Indeed, we leverage the unit-specific correlation in order to measure state specific associations.

¹⁰State 1 is the potential initiator and state 2 is the potential target. We include all states as potential initiators and targets, irrespective of regime type. While hypothesis 1 applies specifically to democracies, we prefer to include non-democracies as initiators in order to use the full breadth of data available to us. Non-democracies provide a useful baseline from which to compare the influence of more or less nationally representative democratic institutions. Results look similar if we omit all non-democratic regimes as potential initiators.

¹¹We take the absolute value of summed conflict in order to obtain a positive indicator.

¹²Previous work warns that the clustering of incidents could lead to inflated event totals (Pevehouse 2004). However, by logged the bilateral sum, we account for this clustering by specifying an order-of-magnitude scale.
¹³While some might question the use of (logged) expert weights over the alternative of counting events (e.g., Schrodt 2017, who advocates against the Goldstein scale), our approach has the advantage of parsimony in that

it produces two dependent variables instead of four that would be required if we counted material cooperation and conflict separately from verbal conflict and cooperation. See Peterson and Zeng (2021) for further justification of this coding decision.

4.1.1 Bilateral model key explanatory variables

The primary explanatory variables in our linear mixed effects models capture the importance of bilateral trade to the initiator and target in the directed dyad. We measure bilateral trade using data from the UN Comtrade database.¹⁴ We include two variables for trade as a proportion of the initiator's and target's GDP. To estimate the varying relationship between trade and the initiation of political interactions, we specify a random initiator-specific slope for trade/initiator GDP. We also include a random target-specific slope for trade/target GDP, as well as random intercepts for both initiator and target. We assume covariation between the random intercepts and slopes, and thus estimate their correlation.¹⁵

4.1.2 Bilateral model control variables

We control for gravity covariates from CEPII (Mayer and Zignago 2011), which could correlate with overall opportunity for interaction. For both initiator and target, we include (logged) GDP per capita, (logged) population, (logged) land area in miles, membership in GATT/WTO, and membership in the European Union. We also include dyadic indicators of (logged) average distance and (dichotomous) indicators of direct contiguity, common language, current/former colony status, and joint membership in at least one preferential trade agreement. See the appendix for summary statistics.¹⁶

We estimate the dyadic, linear mixed effects models in two ways. First, we pool all years and include year-fixed effects to estimate two equations (one for conflict and one for cooperation). Second, we estimate separate conflict and cooperation models for each year. These alternate methods are useful given that our primary explanatory variables for domestic institutions vary across states but change very little over time, whereas capabilities vary considerably more year-

¹⁴We downloaded data updated as of February 2018.

¹⁵We do not use target random slopes nor either states' random intercepts in subsequent, state-level models, but rather to improve model fit in these preliminary models. Future work could benefit from using these estimates.
¹⁶Given that GATT/WTO variable and PTA joint membership could be influenced by domestic institutions, we

replicated all results omitting these variables. All results were consistent.

to-year for any given state. Given space considerations, regression output for all dyadic models can be found in the appendix.

Extracting the random component of the initiator-specific slopes for trade (as a proportion of initiator GDP) from the dyadic models, we find strong evidence that the relationship between trade and conflict, as well as trade and cooperation, varies across states. The pooled random slopes are presented in Figure 1.¹⁷ We present the 19 yearly random slope figures (mirroring Figure 1) in the appendix. However, Figure 2 aggregates yearly estimates for a selection of states¹⁸ demonstrating the variation we observe across space and over time. Again, we see considerable variation across states. We also see some variation within states over time, though this tends to be modest in most cases.

4.2 State-level Models

We use the random slopes for initiation of conflict and cooperation as dependent variables in a second set of linear, state-level models. Formal institutional rules are slow-moving; hence we specify cross-sectional (state-level) models that pool all years in a cross-sectional analysis. However, other important variables—particularly capabilities—can vary by year. As such, we also present times-series cross-sectional (state-year) models. We include year fixed effects in the tscs models such that we are examining within-year, between-country variation. In the cross-sectional models, all explanatory variables are coded for the first year in our data (1993) in order to avoid a scenario in which an explanatory variable might be measured subsequent to the dependent variable (which incorporate data spanning all years in our data).

¹⁷We present estimates and confidence bounds using standard errors obtained by specifying conditional variances associated with the random component of state-specific slopes.

¹⁸We chose states with the largest and smallest values from the pooled estimates, along with random selections from throughout the distributions.



Figure 1: Random trade/initiator GDP slope estimates with 95% confidence bounds for pooled bilateral models

4.2.1 State-level key explanatory variables

Our first explanatory variable categorizes regime type along with electoral systems. Among democracies, we distinguish proportional representation (PR) from majoritarian (SMDP) electoral systems using data from Varieties of Democracy (VDEM) version 8 (Coppedge et al. 2017).¹⁹ Although our theoretical mechanism explains variation in the trade-conflict relationship primarily

¹⁹We include intermediate electoral systems such as two-round run-off systems and single-transferable vote systems along with SMDP in this simpler, dichotomous distinction in democratic regime types.



Figure 2: Random trade/initiator GDP slope estimates with 95% confidence bounds for a selection of states in yearly bilateral models. Note: blue indicates cooperation; red indicates conflict

between classes of democracy, we contend that it is useful also to compare democracies to authoritarian regimes in order to utilize data on all states and to put democratic variation in perspective. As such, we use the same VDEM data to identify authoritarian regimes, specifically including closed autocracies and electoral autocracies in this category.

In alternate models, we omit the trichotomous regime type/electoral system variable in favor of the measure of institutionalized popular inclusion from Joshi, Maloy and Peterson (2019). This IRT-estimated variable, which the authors call the Institutional Democracy Index (IDI), captures and ensemble of indicators capturing participation (universal suffrage, automatic voter registration, and compulsory voting), limits on elite veto players (unicameralism), and a more fine-grained indicator of electoral system.²⁰ However, this indicator is available only for 49 democratic states and only until 2010;²¹ thus we lose some observations both in the cross-sectional and tscs models. While eliminating the comparison with authoritarian regimes, these alternate models potentially also reduce the prospect of omitted variable bias, providing evidence that our causal mechanisms function specifically within (relatively more similar) consolidated democratic states. Indeed, as our theoretical mechanisms are clearest for variation within democracies, these restricted analyses provide a particularly good fit between theory and data.²²

Our final primary explanatory variable is (the natural log of) military capabilities, specifically its (logged) Composite Index of National Capabilities (CINC) score (Singer, Bremer and Stuckey 1972). This score incorporates information on population, urban population, military expenditure, military personnel, coal and steel production, and energy consumption.

²⁰This measure incorporates a 5-category ordinal indicator of electoral system. The five categories, from least nationally representative to most, are: SMD; two-round systems with run-off elections or an alternative vote system; mixed or parallel systems (combining non-interactive PR and SMD elections) or a single non-transferable vote; PR-dominant systems with an average district magnitude less than 8; PR with average district magnitude equal to 8 or more.

²¹The 49 states are those maintaining at least an 8 on the Polity combined score since 1960/their independence, specifically: Argentina, Australia, Austria, Belgium, Bolivia, Brazil, Bulgaria, Canada, Cape Verde, Chile, Costa Rica, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, India, Ireland, Israel, Italy, Jamaica, Japan, Latvia, Lithuania, Luxembourg, Mauritius, Mongolia, Netherlands, New Zealand, Norway, Panama, Philippines, Poland, Portugal, Slovakia, Slovenia, South Africa, Spain, Sweden, Switzerland, Trinidad and Tobago, UK, USA, and Uruguay.

²²The appendix includes models including the simpler PR-vs.-SMD indicator for the subset of democratic states, returning substantively very similar results.

4.2.2 State-level control variables

Given that our causal mechanism focuses on *national* representation, we include a measure of unitary governments in all state-level models. We capture unitary governments by reversing the scale of the VDEM federalism variable, which measures the presence and strength of local and regional government. The inclusion of this control helps us to distinguish our key concept of national representativeness from centralization. Within democracies, decentralization of power away from the national government might reduce the degree to which decisions reflect a holistic, national-level constituency.²³ Further, centralization does not guarantee national representation. Indeed, authoritarian regimes on average score highly on the measure of unitary government.

Similarly, given our discussion of variation in public goods provision within states of varying regime type and electoral system, we also include in all models a variable that identifies the degree to which states provide public goods rather than engage in clientelism—i.e., distributing private or club goods in exchange for political support. Indeed, clientelism occurs even within democracies of various electoral systems. We use a variable from VDEM, coded using a Bayesian IRT measurement model on expert survey data. Higher values indicate relatively more public goods provision. Unlike our other institutional variables, where variation is most common between states, the public goods index demonstrates more variation within states over time.

In both pooled and yearly models, we include a variable for the count of states sharing a contiguous border with the observed state, using data from CEPII. This variable captures opportunity to engage—in peace or conflict—particularly with nearby states. This variable is important given that more isolated states—for example, islands such as New Zealand or Iceland might see trade-conflict and trade-cooperation slopes closer to zero simply because there are fewer states in range of any kind of interaction. In yearly models, we further include a variable for GDP growth rate, from the World Development Indicators (World Bank 2016), We also control for

²³However, the influence of local and regional governments on foreign policy is often indirect; federalism might instead foster the growth in political power of regional interests that could then attempt to affect policy at the national level.

active rivalry—operationalized as a dichotomous variable equal to one if the state maintains a Peace Scale score below 0.5 with at least one other state (Klein, Goertz and Diehl 2008). Together, the GDP growth and rivalry variables identify threats that might make states view trade partners as useful prospects for cooperation (e.g., during good economic times or when facing external threats) or hostility (e.g., when facing economic downturns, which might be blamed on trade partners). The supplemental appendix also presents models including minimal control variables to guard against the possibility of post-treatment bias that could occur if our primary variables affect some of these controls.

5 Analysis

We find support that more nationally representative domestic institutions—particularly proportional electoral systems and institutionalized popular inclusion—facilitate a relatively more pacifying impact of trade. We also find strong evidence that greater military capabilities (in terms of higher logged CINC scores) foster a more positive association between trade and both conflict and cooperation. As such, both of our hypotheses receive empirical support. Table 1 presents coefficients with 95% confidence bounds for Models 1-4, where dependent variables are random slopes taken from pooled bilateral models.²⁴ Models 1 and 2 examine the trade-conflict random slope as a dependent variable, while Models 3 and 4 examine the trade-cooperation random slope. Models 1 and 3 use the three-category regime type/electoral system variable to examine all states, while Models 2 and 4 utilize the indicator of institutionalized popular inclusion that limits the analysis to 45 stable, primarily long-standing democracies.²⁵

In Model 1, the coefficient for PR-democracy is negative and significant ($p \le 0.001$), indicating that, relative to majoritarian democracies (the reference category), a proportional electoral

²⁴In these models, all explanatory variables are measured for the year 1993, the first year in our data.

²⁵Though the authors estimate a measure of institutionalized popular inclusion for 49 states, some of these are post-Communist states that became democratic after 1993. As such, we lose a few observations.

Table 1: Coefficients and 95 percent confidence bounds examining structural determinants of the relationship between trade on politics, pooled models.

	Trade-Conflict		Trade-Cooperation	
	Model 1	Model 2	Model 3	Model 4
Democracy-PR	-0.17***		-0.09	
-	(-0.27, -0.07)		(-0.25, 0.07)	
Authoritarian	0.19***		0.19**	
	(-0.30, -0.09)		(-0.36, -0.02)	
Institutional popular inclusion		-0.06*		0.02
		(-0.13, 0.00)		(-0.07, 0.10)
log CINC	0.09***	0.14***	0.13***	0.15***
	(0.07, 0.11)	(0.08, 0.20)	(0.10, 0.16)	(0.08, 0.22)
Unitary govt	-0.02	0.10	0.17	0.23
	(-0.16, 0.12)	(-0.30, 0.49)	(-0.05, 0.39)	(-0.25, 0.72)
Public goods index	-0.03*	-0.08	-0.08***	-0.23***
	(-0.06, 0.00)	(-0.19, 0.02)	(-0.13, -0.02)	(-0.36, -0.10)
Count of contiguous states	-0.01	-0.01	-0.01	-0.00
	(-0.02, 0.01)	(-0.06, 0.03)	(-0.04, 0.02)	(-0.06, 0.05)
Constant	0.78***	1.19***	1.19***	1.53***
	(0.56, 1.00)	(0.59, 1.78)	(0.84, 1.54)	(0.81, 2.26)
Observations	145	45	145	45
Adjusted R^2	0.44	0.51	0.35	0.45
Residual Std. Error	0.21	0.28	0.33	0.34
F Statistic	20.14***	10.34***	13.69***	8.17***

* p less than 0.1, ** p less than 0.05, *** p less than 0.01

system is associated with a more strongly negative trade-conflict relationship. Substantively, the association is meaningful, as a 0.17 lower predicted trade-conflict slope is more than half as large as the standard devision of the DV (0.266). Interestingly, the coefficient for authoritarian regime type is also negative and significant in Model 1, which could suggest that the pacifying impact of trade is relatively stronger for authoritarian states than SMDP democracies. This finding could stem from the fact that authoritarian leaders extract rents from trade and thus enrich themselves directly. Unlike democratic states, there is consequentially no gap between individual trading interests and policy-makers that must be bridged. However, it is also worth noting that, according to Model 3, authoritarian regimes are also associated with a relatively more negative trade-cooperation slope relative to SMDP democracies, whereas PR democracies show no statistically significant deviation from SMDP democracies with respect to the trade-cooperation relationship. As such, the overall association between authoritarianism and overall political interactions is ambiguous.

Similarly, the coefficient for institutionalized popular inclusion is negative and statistically

significant in Model 2 (p \leq 0.07), further supporting hypothesis 1.²⁶ Substantively, a standard deviation increase in this variable would be associated with a -0.12 change in the predicted trade-conflict slope—nearly half as large as its standard deviation. The institutionalized popular inclusion coefficient is positive in Model 4, which might indicate more representation also facilitating a stronger trade-cooperation link; however, this coefficient is not statistically significant.

The coefficient for logged CINC score is positive and significant across all four models in Table 1 ($p \le 0.001$ in each), suggesting as predicted by hypothesis 2 that states with more military capabilities link trade to political actions broadly; their state-specific slopes for the trade-conflict and trade-cooperation relationships become more strongly positive. Substantively, a standard deviation increase in CINC is associated with between a 0.20 (Model 1) and 0.31 (Model 2) higher trade-conflict slope, and with between a 0.29 (Model 3) and 0.34 (Model 4) higher trade-cooperation slope.²⁷ Also notable in Table 1, unitary government is not significant in any model, while results for public goods provision are mixed. Specifically, the coefficient for public goods provision is negative and significant in Model 1 ($p \le 0.08$), but not statistically significant in Model 2.

We further illustrate the substantive magnitude of our predictions with Figure 3. The top plot in this figure illustrates the predicted random slopes (trade-conflict in red and trade-cooperation in blue) for the three institutional configurations: authoritarian, SMDP-democracy, and PR-democracy. We repeat these configurations three times, holding CINC scores at three levels: its first quartile, median, and third quartile. All other variables are held at their group-specific medians (i.e., their median by regime type/electoral system).²⁸ We draw a solid horizontal line

 $^{^{26}}$ Given that our pooled models incorporate 145 (Models 1 and 3) and 45 (Models 2 and 4) observations, we consider statistical significance at the 0.1 level. In the yearly models, we use the higher threshold of p ≤ 0.05 to indicate statistical significance.

 $^{^{27}}$ While the impact appears larger with respect to trade-cooperation, it is worth noting that this DV also has greater variation: sd = 0.399

²⁸We do not use the overall median because the resulting values are not realistic. For example, it makes little sense to assume that an authoritarian regime would provide public goods to the same extent as a democratic regime.



Figure 3: Predictions and 95% confidence intervals from Models 1-4. The solid horizontal line indicates no deviation from the fixed effect

at 0, which represents the fixed effect—i.e, the association shared by all states—of the variable for trade as a proportion of initiator GDP. As such, any 95% confidence intervals that cross this line are associated with an estimate that is not statistically distinct from the fixed effect.

However, we can compare institutional configurations and capability values relative to each other and find statistical significance even if one or more of these values are not statistically distinct from the fixed effect. Overall, the figure shows that PR is associated with a trade-conflict slope that is substantially more negative than SMDP across all three levels of military power, while authoritarian regimes fall somewhere in between, though closer to PR democracies. The plot also shows that all slopes increase as CINC scores are held at higher levels. Interestingly, the predicted slopes for trade-cooperation and trade-conflict tend to look similar within each regime/electoral system and power classification.

Table 2: Coefficients and 95 percent confidence bounds examining structural determinants of the relationship between trade on politics, yearly models. Note: all models include year fixed effects (coefficients not presented).

	Trade-Conflict		Trade-Cooperation	
	Model 5	Model 6	Model 7	Model 8
Democracy-PR	-0.13***		-0.05***	
	(-0.16, -0.10)		(-0.08, -0.02)	
Authoritarian	-0.09***		-0.04*	
	(-0.12, -0.06)		(-0.08, -0.01)	
Institutional popular inclusion		-0.06***		0.03***
		(-0.07, -0.04)		(0.02, 0.05)
log CINC	0.07***	0.14***	0.10***	0.14***
	(0.06, 0.08)	(0.12, 0.16)	(0.09, 0.10)	(0.12, 0.15)
Unitary govt	-0.12^{***}	0.14	-0.02	0.14*
	(-0.15, -0.08)	(-0.00, 0.28)	(-0.06, 0.02)	(0.03, 0.25)
Public goods index	-0.01	-0.06***	-0.03***	-0.17^{***}
	(-0.02, 0.00)	(-0.10, -0.03)	(-0.04, -0.02)	(-0.20, -0.14)
Active rivalry	0.12***	0.17***	0.16***	0.15***
	(0.10, 0.15)	(0.11, 0.23)	(0.14, 0.19)	(0.09, 0.20)
GDP growth	-0.00	0.00	0.00	0.01**
	(-0.00, 0.00)	(-0.00, 0.01)	(-0.00, 0.00)	(0.00, 0.02)
Count of contiguous states	-0.01^{*}	-0.01*	-0.00	-0.01
	(-0.01, -0.00)	(-0.03, -0.00)	(-0.01, 0.00)	(-0.02, 0.00)
Constant	0.48***	1.07***	0.67***	1.25***
	(0.40, 0.56)	(0.83, 1.31)	(0.58, 0.76)	(1.05, 1.45)
Observations	2,835	822	2,835	822
Adjusted R ²	0.31	0.44	0.36	0.49
Residual Std. Error	0.27	0.34	0.30	0.28
F Statistic	49.97***	28.37***	61.82***	34.22***

* p less than 0.1, ** p less than 0.05, *** p less than 0.01

The bottom plot in Figure 3 uses estimates from Models 2 and 4, largely replicating the top plot except that there are only two institutional configurations (as authoritarian states are excluded): low-representation considers institutionalized popular inclusion at its 5th percentile

(approximately equal to the value for Finland). High representation holds institutionalized popular inclusion at its 95th percentile (approximately equal to the value for the US). All other variables are held at their medians.²⁹ Results again suggest that more nationally representative democracies see relatively more negative relationships between trade and conflict at all levels of capabilities. Indeed, the most popular-inclusive institutions also show a higher trade-cooperation slope than trade-conflict slope. And, again, all predicted slopes for trade-conflict and trade-cooperation increase as capabilities increase.

Table 2 presents Models 5-8, which largely mirror Models 1-4 with the key difference that these are time-series, cross-sectional specifications examining yearly variation in predicted random slopes. Yearly models are useful given that we see considerable yearly variation in CINC scores and in some control variables. However, given that the institutional features are much more slowlymoving within countries (indeed, invariant in most), we include year fixed effects in Models 5-8 to focus on within-year, between-country variation.³⁰ Once again, we find that PR-democracies have relatively more negative trade-conflict slopes than SMDP-democracies (from Model 5). We also find that higher levels of institutionalized popular inclusion are associated both with more negative trade-conflict slopes (from Model 6) and higher trade-cooperation slopes (from Model 8). As such institutionalized popular inclusion might bolster a conflict-preventing effect of trade while simultaneously facilitating a stronger link between trade and increased cooperation. We once again find that the coefficient for military capabilities is positive and strongly statistically significant in all four models in Table 2. We find mixed evidence for unitary government in these models, as the coefficient is negative and significant in Model 5 but not significant in Model 6. This inconsistency could result from the fact that the influence of local and regional governments on foreign policy is weak or noisy. Findings for the public goods index similarly are mixed, with

²⁹We use the overall median given that our key variables are held at a specific level rather than categorized into groups, and because there are no authoritarian states included in these models.

³⁰The supplemental appendix further presents models in which we remove year-FE and instead specify an autoregressive residual structure.



a negative and significant coefficient in Model 6, but non-significance in Model 5.

Figure 4: Predictions and 95% confidence intervals from Models 5-8. The solid horizontal line indicates no deviation from the fixed effect

Figure 4 duplicates Figure 3 using the results from Table 2. Predictions in this figure again show support for our main hypotheses. More nationally representative democracies (PR rela-

tive to SMDP, and states with higher values of institutionalized popular inclusion) have more negative trade-conflict slopes at all levels of capabilities; and all predicted trade-conflict and trade-cooperation slopes increase as CINC scores increase. Predictions in Figure 4 tend to have tighter 95% confidence intervals than those in Figure 3, which is unsurprising given that we have 19 years worth of data in Models 5-8, whereas Models 1-4 were cross-sectional, incorporating far fewer observations. One interesting distinction emerges in the bottom plot of Figure 3: less popular-inclusive (i.e., more elite-exclusive) institutions are associated with relatively higher trade-conflict slopes than trade cooperation slopes, while more popular-inclusive institutions see much higher trade-cooperation slopes than trade-conflict slopes.

6 Implications and Conclusion

We find that structural factors condition the relationship between bilateral trade and the initiation of political interactions. Our study advances the understanding of this long-studied phenomenon by scrutinizing potentially divergent assumptions. We find utility in reconsidering the unitary actor assumption instead as a variable with consequences for the expected association between trade and politics. Similarly, we explore military capabilities as a factor affecting the degree to which states use trade as a means to achieve other state interests, building from the insights of studies on dependence and coercion that are typically ignored in peace-through-trade models.

Our theory and findings hold important implications for the understanding of contemporary international politics, particularly the populist backlash against globalization with which (particularly Western) states are grappling. Given the massive expansion of global trade since World War II, peace-through-trade models predict decreasing prospects for armed conflict. While major interstate war is relatively rare, recent years have witnessed rising political tensions between trade partners, resulting in a trade war between the United States and China under the Trump administration, as well as the withdrawal of the United Kingdom from the European Union. In both of

these cases, political conflict has resulted at least in part from leader responsiveness to domestic interests opposed to continued open trade. Notably, the US and UK both maintain an SMDP electoral system, which we argue better enables narrow interests to influence foreign policy on conflict and cooperation.

The US-China trade war and Brexit are useful cases with which to compare our argument to that of the capitalist peace (Mousseau 2000; Gartzke 2007; McDonald 2009). Both the US and UK enacted increasingly liberal trade policies in the years after World War II. And while domestic interests engaging in international trade likely support continued cooperation and peace, citizens opposing open trade have been able to dominate policy-making in recent years. Arguably, the liberalization of policy contributed to the resentments of citizens left behind, despite the fact that national welfare increased. Regardless of electoral system, most democracies have liberalized since World War II. Yet, Germany—which maintains national electoral institutions featuring proportional representation—has seen relatively less hostility towards trade partners. It is probably no coincidence that Germany has resisted international calls to ban Huawei—a Chinese telecommunications company with strong government ties—given its desire to maintain strong trade ties to China. Italy, another PR-democracy with strong China trade ties, has similarly resisted the ban. This behavior stands in contrast to that of SMDP-democracies such as the US, UK, and Australia, all of which have instituted the ban.

Future research might consider possible mediators of the conditioning factors we identify. For example, more nationally representative or popular-inclusive domestic institutions might lead to more redistributive policy, reducing opposition to trade exposure among those who lose amid foreign competition. Furthermore, these same institutional features might affect the number of trade partners states maintain, and the composition of trade with each. When narrow interests have more influence on policy, it is possible that states could be more likely to develop trading relationships with partners more likely to become future adversaries. Indeed, one interpretation of contemporary events is that narrow interests in favor of broadly liberal policy successfully affected policy only to cause an eventual backlash.

Future work could also benefit from applying our argument to the study of the US-led liberal international order. Ikenberry (2011) describes US "liberal hegemony" as a leadership style incorporating coercion as well as cooperation. Our focus on the role of military capabilities might help explain how such leadership could arise. And our institutional argument could help explain domestic pressures supporting the recent US retreat from its leadership role (Cooley and Nexon 2020). Given that domestic interests and international power both influence US behavior, further research is necessary to predict how the future of US leadership might unfold.

Finally, future research can explore variation in authoritarian regime types. We consolidated multiple authoritarian regimes simply as a comparison category given that our theoretical expectations were clearer for the PR vs. SMDP distinction—and because space here is limited. However, growing evidence suggests that variation in authoritarian regimes have consequences for policy—including signaling during international bargaining (Weeks 2008). These regime characteristics similarly could condition consequences of trade for political relationships. An understanding of how regime type matters is particularly important given that China continues to use economic coercion to further its strategic goals as its military power grows.

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