

Kantian Dynamics Revisited: Time Varying Analyses of Dyadic IGO-Conflict Relationships

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Kantian Tripod for Peace

- Three legs of the Kantian tripod for peace (Russett and Oneal 2001)
 - Democracy
 - Republican forms of government domestically
 - International Organizations
 - Federation of free states
 - Economic Interdependence/Trade
 - Universal hospitality & a spirit of commerce

Dyadic Empirical Evidence

- Democratic peace
 - Strong evidence for dyadic democratic peace
 - Jointly democratic dyads are less likely to have militarized disputes/wars than autocratic/mixed dyads
- Economic peace
 - Mixed evidence for dyadic economic peace
 - Problem with missing data
- IGO peace
 - Mixed findings for this leg of the tripod

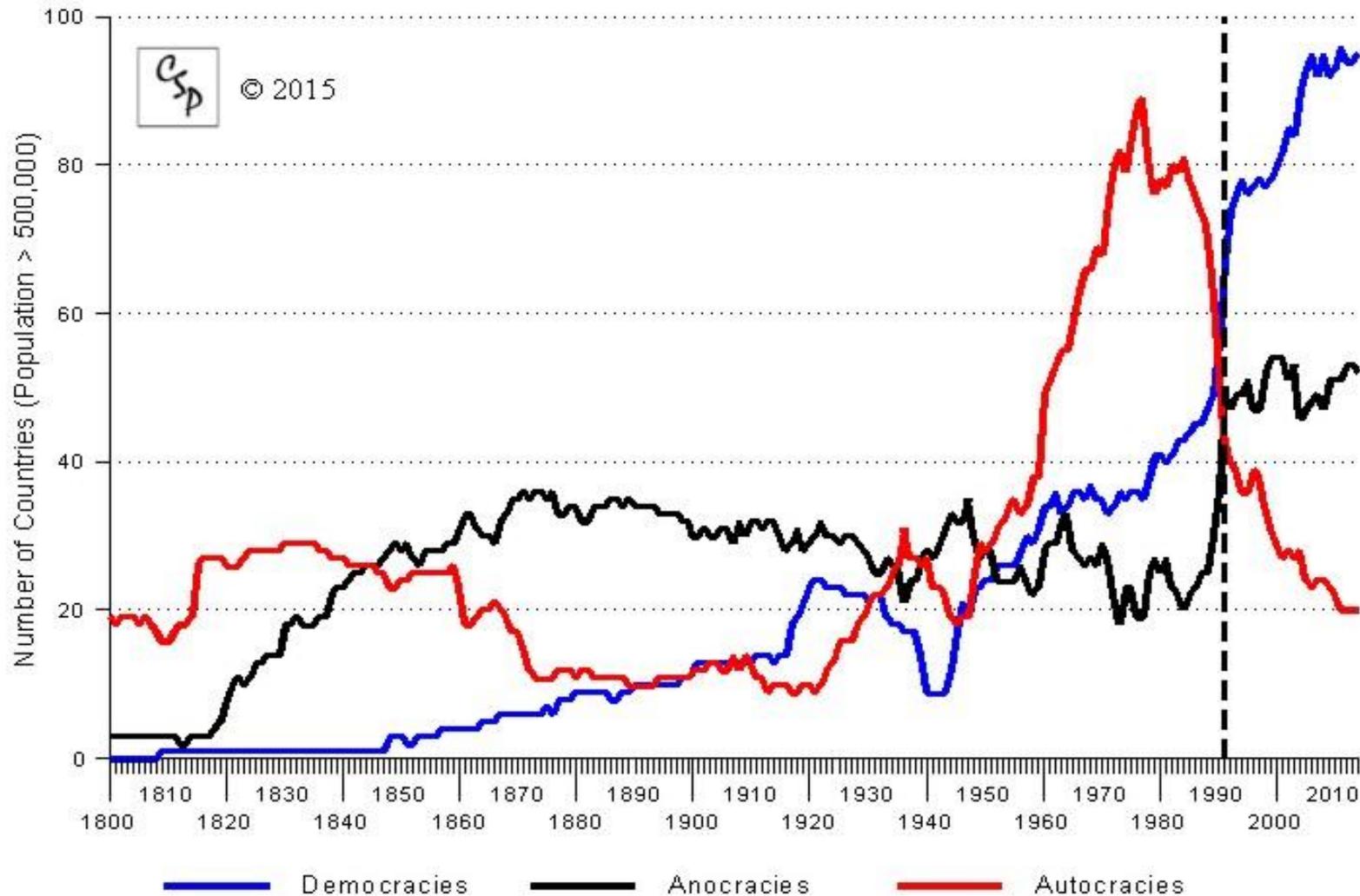
IGOs and Dyadic Conflict

- Higher shared number of dyadic IGO memberships reduces risk of dyadic conflict
 - Russett, Oneal, and Davis (1998); Russett and Oneal (2001); Oneal, Russett, and Berbaum (2003); Crescenzi (2007)
- Higher shared number of dyadic IGO memberships increases risk of dyadic conflict
 - Kinsella and Russett (2002); Boehmer et al (2004); Chan (2005); Fausett and Volgy (2010)
- No significant relationship between IGOs and dyadic conflict onset
 - Goldsmith (2007); Gleditsch et al (2008); Shannon et al (2010)

Accounting for Mixed Results

- IGOs may have varying effects depending on their characteristics.
 - Interventionist/security based IGOs better suited to promote peace
 - Densely democratic IGOs more strongly promote peace among members
 - IGOs with mechanisms for conflict management (e.g. courts) may promote peace better.
- Time varying relationships: the effect of IGOs on conflict could vary over time.
 - Static models would produce varying effects depending on the time period analyzed.
 - Let's consider the evolution of the democratic peace.

Global Trends in Governance, 1800-2014



Source: <http://www.systemicpeace.org/polity/polity1.htm>

TVP Example: Democratic Peace

- Systemic level: as proportion of democracies increases, proportion of states fighting wars decreases; the pacifying effect increases over time (Mitchell, Gates, & Hegre 1999).
- Dyadic level: the pacifying effect of joint democracy on dyadic conflict gets stronger over time (Cederman and Rao 2001).

Systemic Example: Mitchell, Gates, and Hegre (1999)

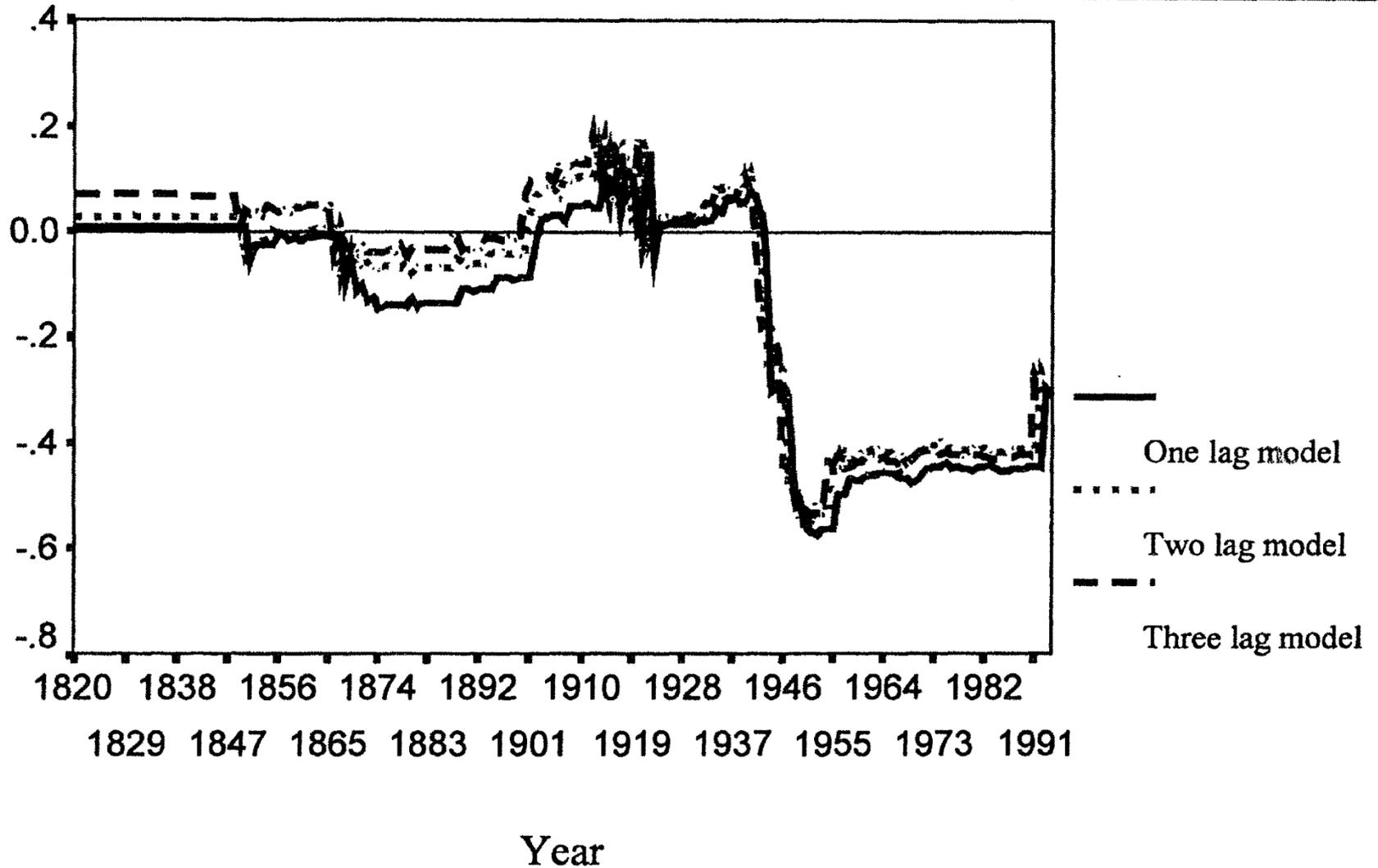


Figure 2: The Impact of Democracy on War (lag 1) Varying the Model Specification

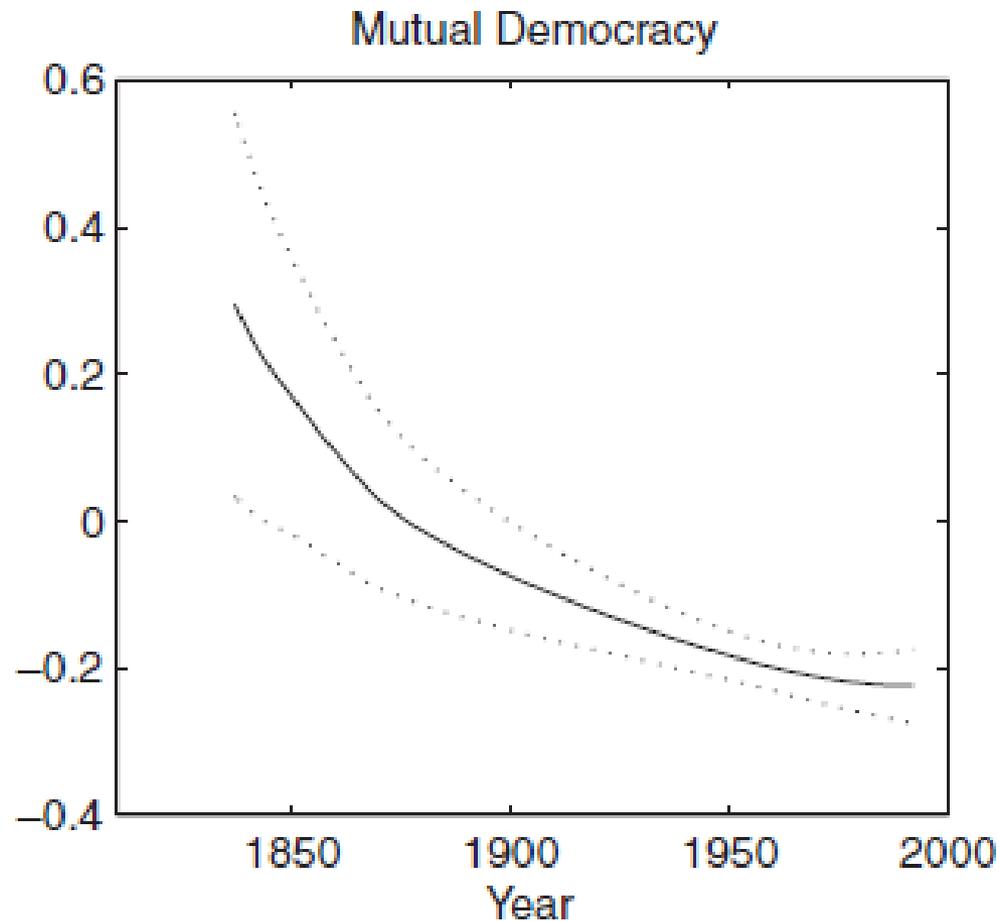


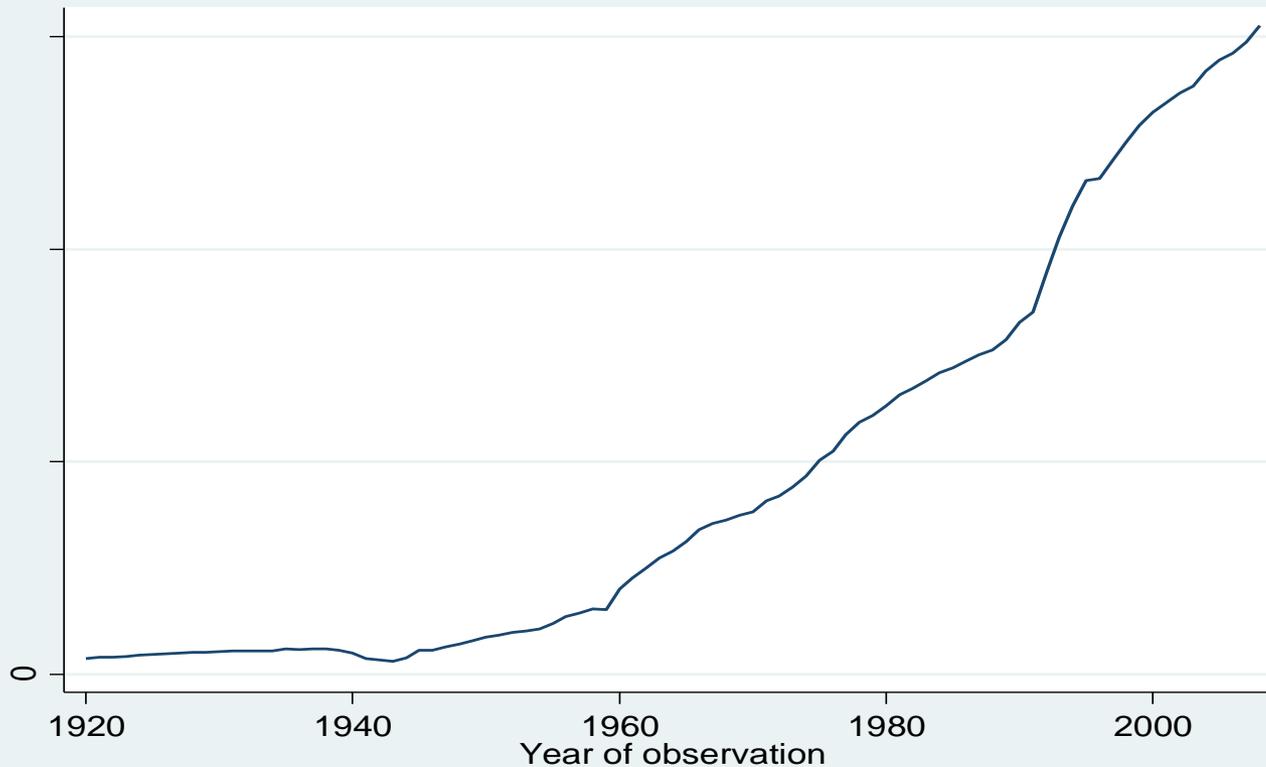
Figure 1: The Dynamic Effect of Democracy on Militarized Interstate Disputes

NOTE: Bivariate varying coefficient logit results of militarized interstate disputes from 1837 to 1992, excluding world wars. Dotted lines are the estimated functions plus or minus twice-estimated standard errors. The results indicate that democracy has an *increasingly* negative effect on interstate conflict over time.

Research Question

- How does the dyadic effect of shared IGO memberships influence the chances for dyadic militarized conflict? How does this vary over time?

Sum of shared dyadic IGO ties, 1920-2008; COW IGO dataset



Theoretical Assumptions

- IGOs promote a rule for the *preservation of peace*.
 - League of Nations emphasized peaceful dispute resolution, reduction in states' armaments, coordinated responses to aggression
 - United Nations identified several mechanisms for peaceful dispute resolution
 - Regional IGOs call for peaceful dispute settlement (e.g. OAS, Chapter V; ASEAN, Chapter VIII, Arab League, Article V)
- IGOs can enforce their rules through coercion, self-interest, and legitimacy (Hurd 1999).

Promoting Peace via Coercion

- IGOs are often created following large wars in the construction of post-war orders by major powers (Ikenberry 2001).
- Major powers benefit from these institutions by creating rules that favor their power and preferences.
- IGOs can bind weaker states to a set of rules and institutions, yet maintain hegemonic independence.
 - Example: Congress of Vienna
- Coercive systems collapse over time if weaker states become dissatisfied with the order and institutional rules shift against the dominant power as its capabilities decline.
 - Examples: collapse of the League of Nations, CACJ

Promoting Peace via Self-Interest

- Neoliberal institutionalists argue that major powers have more benign intentions when establishing IGOs.
- IGOs are created to solve coordination problems and states design institutions to maximize their self-interests.
- IGOs promote cooperation by (e.g. Keohane 1984; Abbott & Snidal 1998):
 - Establishing patterns of legal accountability, lowering costs of negotiations
 - Reducing transaction costs
 - Lengthening shadow of future
 - Providing forums for regular meetings and negotiations
 - Increasing flow of information among members, reducing effects of asymmetric information in bargaining
 - Raising reputational costs for non-compliance

Promoting Peace via Self-Interest

- Some IGOs are better suited to promote peace among members.
 - Institutionalization: resources/tools for conflict management and information provision (Boehmer et al 2004)
 - Density of democratic states: socializes non-democratic members into democratic practices of non-violent dispute resolution (Mitchell 2002)
- Interventionist/democratic IGOs may promote peace more effectively than other types of IGOs (Pevehouse & Russett 2006).

Promoting Peace via Legitimacy

- Constructivist theories emphasize the constitutive effects of IGOs
 - Members come to view each other's security as their own security (Wendt 1999).
 - IGOs have complex bureaucracies that generate new agendas and norms (Barnett & Finnemore 1993)
 - Sociologists make similar arguments when viewing IGOs as a mechanism for building world society (Meyer 2010; Brechin and Ness 2013)
 - IGOs produce a convergence in state behavior and preferences over time (Schimmelfennig 2003; Hooghe 2005; Bearce and Bondanella 2007)

Promoting Peace via Legitimacy

- Increasing frequency of IGOs should promote dyadic peace more effectively as IGO #'s grow:
 - IGOs coerce norm breakers via collective security
 - IGOs actively mediate members' conflicts
 - IGOs increase information in dyadic bargaining
 - IGOs socialize states into peaceful conflict management practices (e.g. 3rd party tools)
 - Convergence in IGOs members' preferences
- Legitimacy expectation: dyadic effect of shared IGO memberships should be negative & increasingly larger as the # of IGOs increases over time

Dynamic IGO-Conflict Relationships

- Most IGO theories assume the relationship between IGOs and conflict is static.
 - Example: neoliberal institutionalists argue that IGOs focused on security with highly institutionalized procedures for dispute settlement should be more effective for preserving peace among members.
 - However, no consideration of whether this effect is stronger or weaker in 2016 relative to 1946.
 - Although, separation of historical periods/regions.
- This is a bit surprising given that the Kantian DP literature has considered the evolutionary relationship between democracy and war/MIDs.

The Dynamic IGO Peace: Coercion

- Victors of recent major wars have been democracies. IGOs created in post-war order have become more democratic as well.
 - Changes in IGO voting rules (Blake and Payton 2014): major powers prefer weighted rules, but IGOs have become more likely to use unanimity & majoritarian rules
 - Increases in IGO independence (Haftel and Thompson 2006; Lundgren 2015): more active bureaucracies; IGO creation of new IGOs that are less influenced by states; increasing compulsory jurisdiction of courts
 - Increasing number of multilateral IGOs, which increases potential for collective action problems
- Prediction: effect of shared IGO ties on MIDs should weaken over time as major powers' influence declines

The Dynamic IGO Peace: Self-Interest

- Highly institutionalized IGOs focused on dispute settlement are best suited to mitigate conflict risks.
- Increasing independence and density of IGOs improves the supply of mediation/arbitration/adjudication.
- IGOs can also screen out conflict-prone members (Donno et al 2014).
- States have developed more informal IGOs to provide more flexibility in bargaining (Vabulus and Snidal 2013).
- Prediction: IGOs with dispute settlement procedures should have consistent negative effects on MIDs over time; effects could weaken as non-democratic countries join Kantian IGO network.

The Dynamic IGO Peace: Legitimacy

- Kantian & constructivist logics anticipate that the effect of IGOs on conflict should be increasingly negative over time, much like the democracy-conflict relationship.
- Higher density of IGOs increases frequency of peaceful dispute settlement (Mitchell et al 2008)
- IGO members should be more accepting of the peace rule the longer they have been members of IGOs & share more similar FP preferences.
- Prediction: the effect of shared IGO ties on MIDs should become increasingly negative over time.

TVEM Model

- Several ways to model time varying parameters
 - Rolling regression
 - Kalman filter
 - Multilevel/Hierarchical models
 - TVP estimated by creating a series of deviation scores from a within unit average
 - Most models assume the association between the outcome and covariate changes linearly over time.
- We utilize a time-varying effect model (TVEM) to allow for non-linear changes in the time varying effects (Tan et al 2011).
 - Assumes only that the relationship changes in a smooth fashion (no sudden jumps/break points)

TVEM Model

- For a single time varying covariate:
 - $y_{ij} = \beta_0(t_{ij}) + \beta_1(t_{ij}) \cdot x_{ij} + \varepsilon_{ij}$
- TVEM partitions time into smaller intervals with knots placed at equally spaced quantiles of all observations.
 - $\beta_0 = \hat{a}_0 + \hat{a}_1 t + \hat{a}_2 t^2 + \sum_{j=1}^K \hat{a}_{2+j} (t - \tau_j)^2$
 - $\beta_1 = \hat{b}_0 + \hat{b}_1 t + \hat{b}_2 t^2 + \sum_{j=1}^K \hat{b}_{2+j} (t - \tau_j)^2$
 - K is the number of intervals, τ_K is the knots for each of these intervals.
- The model uses a penalized spline (P-spline) to smooth the effects across time intervals.

TVEM Model

- The number of knots is selected by fitting a variety of models and selecting the one with the smallest AIC/BIC.
 - For our data, six knots is best.
- We can include multiple time varying variables.
- We can also assume some variables have static effects.
- In our model, we assume that the IGO variable is the only one with a time varying effect.
 - Yet, we also estimate models where IGOs and democracy have time varying parameters.

Data

- Dyad year dataset, 1948-2000 (all dyads)
- Dependent Variables
 - MID: 1 if states threatened, displayed, or used military force against each other, 0 otherwise
 - Fatal MID: 1 if the conflict resulted in at least one battle related fatality, 0 otherwise
- Independent variables
 - Shared IGOs: count of number of IGOs that both states in a dyad jointly belong to (Dorussen & War 2008)
 - Interventionist IGOs: count of number of shared IGO memberships for most institutionalized IGOs (Boehmer et al 2004)
 - MTOPS: count of number of shared IGO memberships for organizations that call for peaceful dispute settlement in charter (Hensel)

Data

- Control variables
 - Polity IV democracy - autocracy score of the least democratic state in dyad
 - Dyadic trade to GDP ratio for least dependent state in dyad
 - Non-contiguity
- In the static logit model, temporal dependence addressed with a peace years variable & cubic splines (Beck, Katz, & Tucker)

Table 1: Static Logit Model of MID Occurrence, 1950-2000

| | |
|---------------------------------|----------------------|
| <i>Shared IGOs</i> | 0.0322** (0.0026) |
| <i>Trade Dependence</i> | -30.568** (8.762) |
| <i>Democracy</i> | -0.085** (0.006) |
| <i>Non-Contiguity</i> | -3.263** (0.067) |
| <i>Peace Years</i> | -0.657** (0.020) |
| <i>Constant</i> | -1.579*** (0.094) |
| <i>N</i> | 469,517 |
| <i>Pseudo R²</i> | 0.40 |
| <i>Wald χ^2</i> | 8527.05** |

* p<0.05, ** p<0.01

Shared IGOs have a positive & significant effect on MID occurrence in the static parameter logit model.

Figure 1: Time Varying Effect of Shared IGO Memberships (ALL) on MIDs

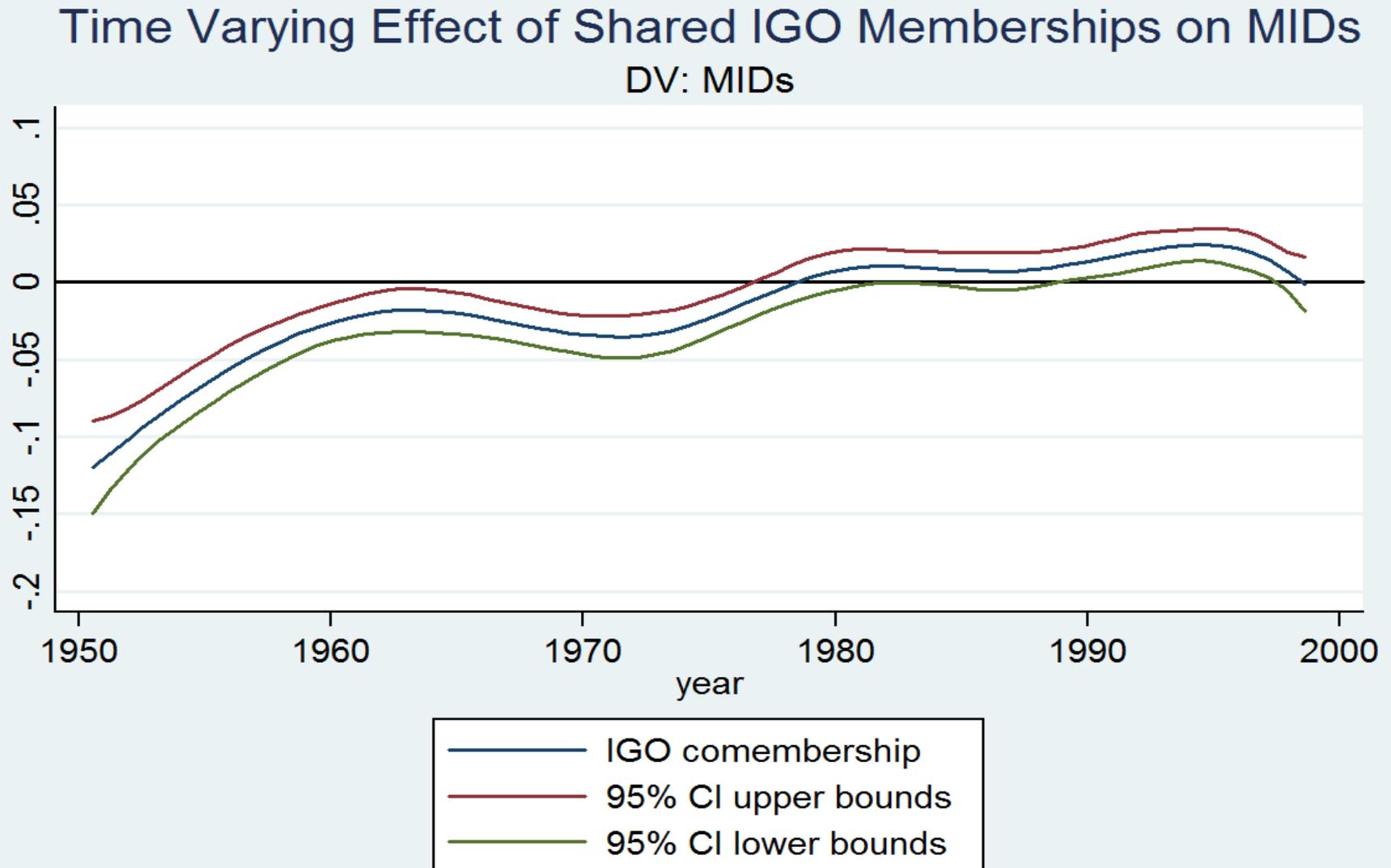
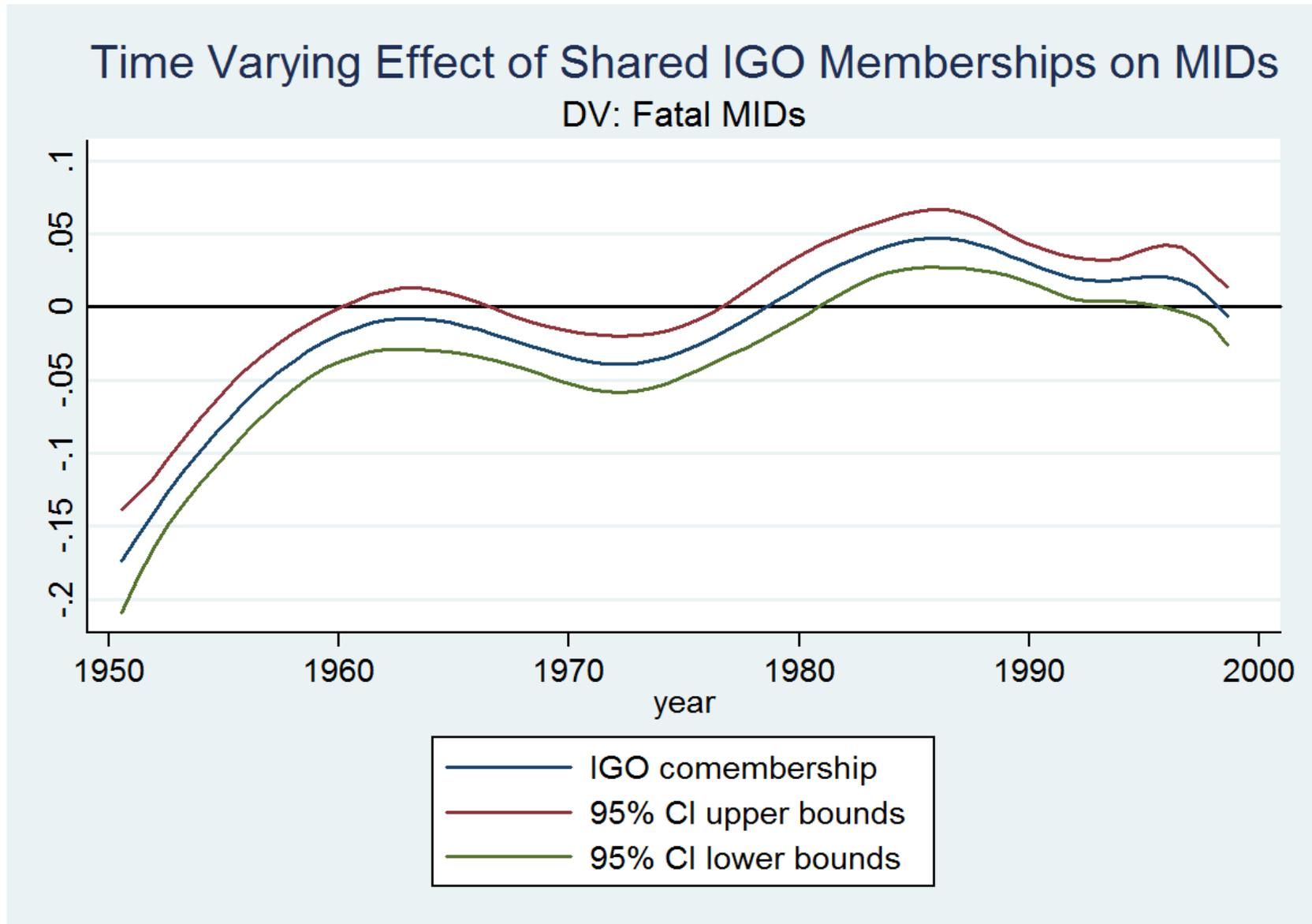


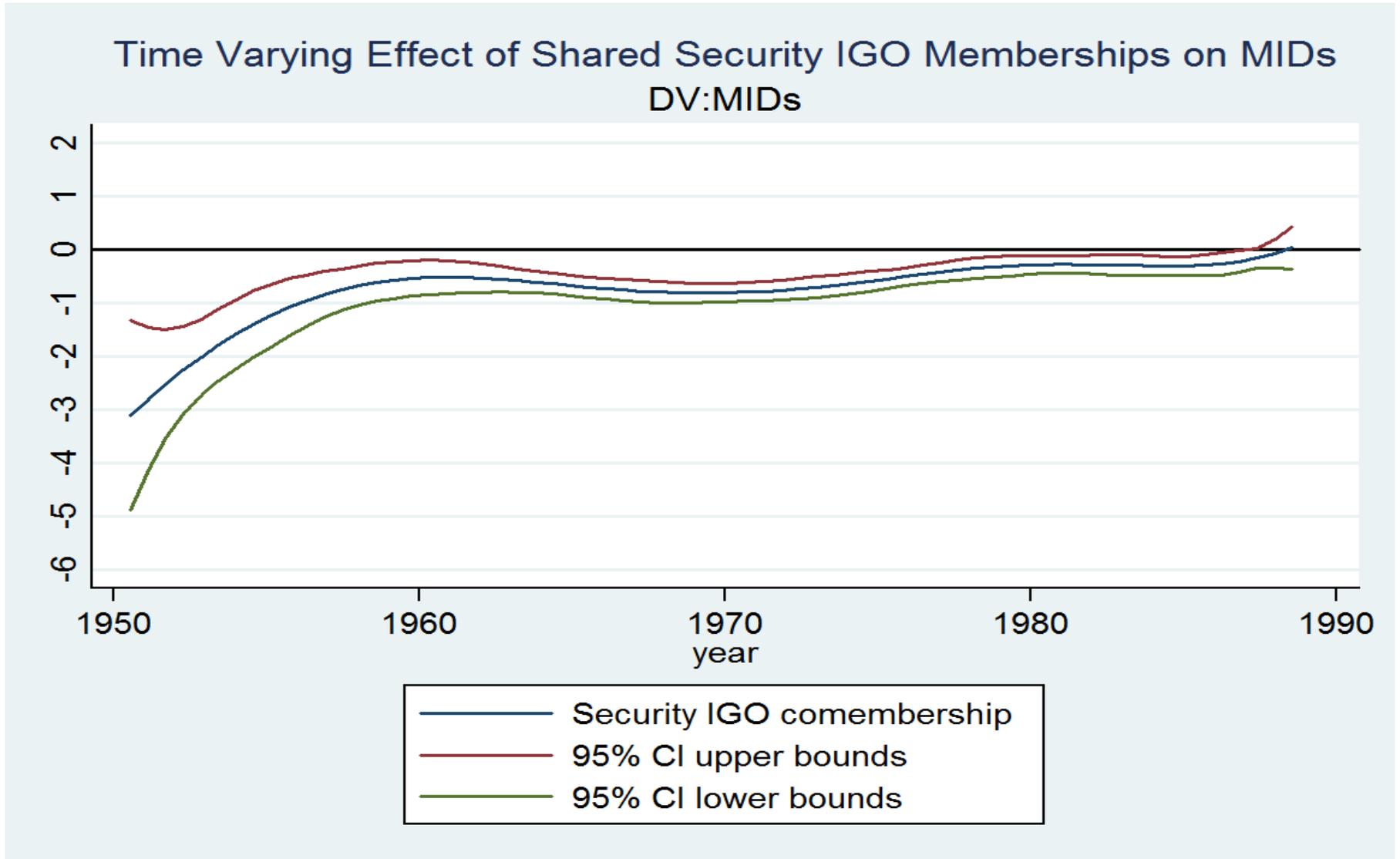
Figure 3: Time Varying Effect of Shared IGO Memberships (ALL) on Fatal MIDs



Empirical Results for all IGOs

- Relationship is negative (and substantively strongest) in the early decades of the Cold War, not-significant towards the end of the Cold War, and becomes positive in the post-Cold War period; same pattern for fatal MIDs
- Results are consistent with *coercion* mechanism whereby loss of hegemonic control over IGOs has weakened their effects on preventing conflicts between member states.
- Time varying parameters show why estimation of static logit models can miss temporal variation in these relationships.

Figure 2: Time Varying Effect of Shared Interventionist IGO Memberships on MIDs



Empirical Results for Highly Institutionalized/Peace Promoting IGOs

- Interventionist IGOs have a more consistently negative effect on MIDs than all IGOs
- Results are consistent with the *self-interest* mechanism, whereby the design of IGOs influences their success in mitigating conflicts between members.
 - Substantive effects of security IGOs on MID onset are much stronger, which is important given that states belong to fewer of these organizations (mean of 1 vs. 19 for all IGOs)
- Little support for *legitimacy* mechanism given the weakening effect of IGOs on conflict, even for those most active in peaceful dispute settlement.

Conclusions

- The relationship between IGOs and militarized conflict is dynamic, which helps explain why empirical findings in the literature are so mixed.
- IGOs' ability to promote a rule to preserve peace through coercion, self-interest, and legitimacy varies over time.
- Security IGOs with interventionist features to settle members' disputes are best positioned to preserve peace.
- IGO leg of the Kantian tripod does not have a systemic accumulating effect like we see for democracy.

Future Analyses

- Explore other design features of IGOs
 - How democratic the members are
 - How many members there are
 - Weight IGOs by importance/longevity
- Consider endogenous relationship between IGOs and conflict
- Look at the sequencing of IGO joining & conflict patterns more carefully
 - Analyses I have done in W.H. suggest states have many (newly) disputed territorial issues after joining OAS and they are more likely to militarize them the longer they have been in the OAS.

Table 3: Negative Binomial Analysis of the Militarized Management of Contentious Issue Claims, Western Hemisphere, 1816-2001

| Dependent Variable: Number of Militarized Disputes over Issue | MODEL 5 | MODEL 6 | MODEL 7 | MODEL 8 |
|---|----------------------|----------------------|----------------------|----------------------|
| One State in OAS | 0.419* (0.235) | 0.270 (0.228) | -0.107 (0.213) | 0.118 (0.220) |
| Both States in OAS | 0.807*** (0.159) | ----- | ----- | |
| Shared Time in OAS | ----- | 0.012*** (0.003) | ----- | |
| Challenger State Time in OAS | ----- | ----- | 0.017*** (0.004) | |
| Target State Time in OAS | ----- | ----- | ----- | 0.020*** (0.005) |
| One State in ICJ | 0.037 (0.173) | 0.141 (0.161) | 0.113 (0.161) | 0.207 (0.163) |
| Both States in ICJ | -0.323 (0.227) | ----- | ----- | |
| Shared Time in ICJ | ----- | -0.002 (0.003) | ----- | |
| Challenger State Time in ICJ | ----- | ----- | 0.004 (0.005) | |
| Target State Time in ICJ | ----- | ----- | ----- | -0.005 (0.004) |
| Issue Salience | 0.197*** (0.031) | 0.193*** (0.031) | 0.194*** (0.031) | 0.194*** (0.031) |
| Recent Militarized Conflict | 0.487*** (0.038) | 0.492*** (0.038) | 0.497*** (0.038) | 0.499*** (0.039) |
| Power Parity | 0.510** (0.213) | 0.415* (0.220) | 0.368 (0.229) | 0.368* (0.217) |
| Territorial Issue | 0.409** (0.175) | 0.410** (0.173) | 0.375** (0.171) | 0.379** (0.177) |
| River Issue | -0.551 (0.468) | -0.523 (0.468) | -0.490 (0.469) | -0.541 (0.469) |
| Constant | -5.615*** (0.308) | -5.553*** (0.292) | -5.509*** (0.291) | -5.488*** (0.292) |
| α | 0.036 (0.313) | 0.015 (0.302) | 0.020 (0.301) | 0.071 (0.315) |

* $p < .10$, ** $p < .05$, *** $p < .01$; Unit of analysis is dyad-year; N = 774