Diplomatic Relations and Conflict Management: A Dynamic Analysis

Brenton Kenkel

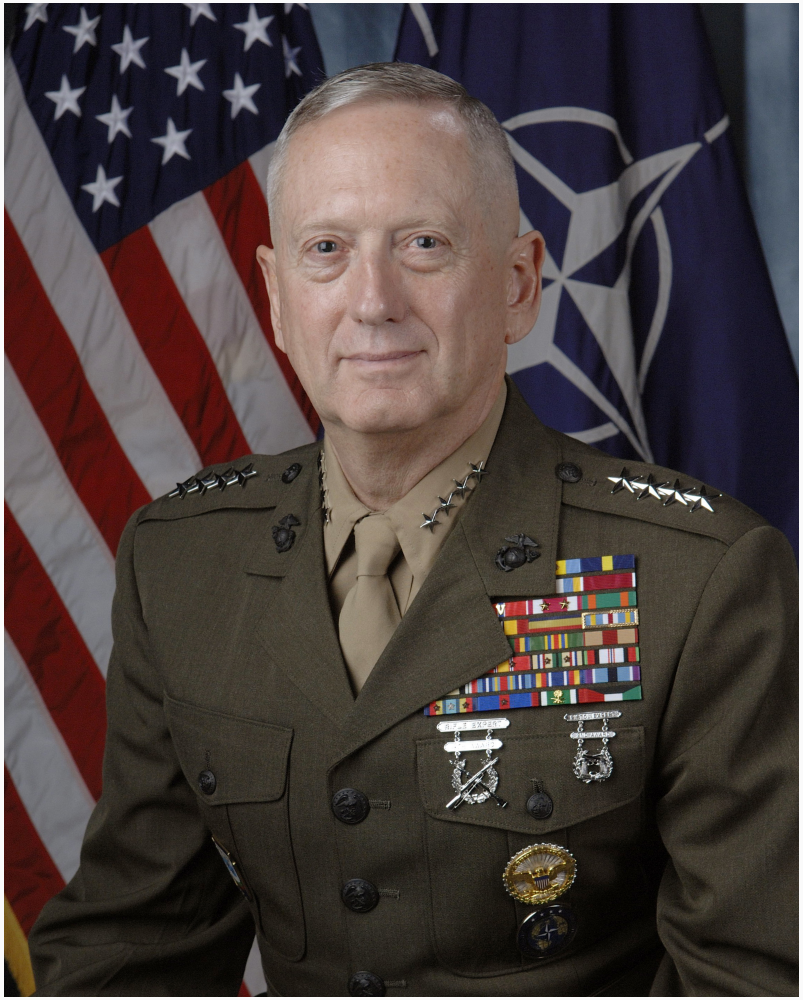
April 10, 2018

Vanderbilt University/University of Rochester

Central Question

How, if at all, do diplomatic relations affect the onset and termination of international disputes?

Do Diplomatic Relations Matter?



"If you don't fund the State Department fully, then I'm going to need to buy more ammunition ultimately."
—Gen. James Mattis, 2013, to the Senate Armed Services Committee

Do Diplomatic Relations Matter?

Formal models of “cheap talk” diplomacy:

- Diplomacy ineffective due to incentives to misrepresent (Fearon 1995)
- Communication *increases* overall chance of war (Sartori 2002, Ramsay 2011)
- Diplomacy as effective only in peculiar bargaining environments (Trager 2010, Bils and Spaniel 2017)

Dearth of systematic empirical evidence.

My Approach

I estimate the reciprocal relationship between formal diplomatic ties and international disputes.

- Collect data on timing of changes in US diplomatic ties
- Model diplomacy and conflict as interdependent, dynamic decision problem
- Estimate parameters of the formal model
  - Effect of relations on dispute initiation and termination, and vice versa
  - Short- versus long-run mechanisms
  - Influence of covariates on payoffs, choices, and long-run outcomes

Main Findings

From data on American diplomatic relations and dispute involvement, 1816–2007:

- Diplomacy does matter
  - Small negative effect on dispute initiation
  - Larger positive effect on dispute termination
  - Reverse causality too: dispute *vastly* increases chance relations are cut off
- Why these effects?
  - Ongoing costs of maintaining relations during dispute
  - Diplomatic relations as potential commitment device
  - No evidence of short-term incentive to "send a message"
  - No *direct* effect of diplomatic relations on incentives to take peaceful actions (if anything, the opposite)

Related Literature

- Determinants of diplomatic ties
  - Russett and Lamb 1969, Neumayer 2008, Kinne 2014
  - Do not consider effects on conflict management
- Effects of diplomatic actions
  - Goldsmith and Horiuchi 2009, Trager and Vavreck 2011, Hall and Yarhi-Milo 2012, McManus 2014, Lebovic and Saunders 2016
  - Focus mainly on political actors, not professionals
- Structural models of conflict
  - Signorino 1999, Lewis and Schultz 2003, Signorino and Tarar 2006, Carter 2010, McLean and Whang 2010, Kurizaki and Whang 2015, Crisman-Cox and Gibilisco 2017
  - Do not analyze diplomatic ties or (usually) dynamics

Roadmap

From here:

1. Develop a sparse formal model of diplomatic relations and crisis management
2. Highlight substantively relevant parameters of the model
3. Derive corresponding statistical model
4. Collect new data on diplomacy, combine with existing data on disputes to estimate model parameters

Formal Model

Basic ingredients:

- Interaction between US and another country
- Infinite horizon $t = 0, 1, \ldots, \infty$
- Constant discount factor $\delta \in (0, 1)$

Only modeling the US's decision-making.

Key tradeoff is between present and future payoffs.

Formal Model: State

Each period characterized by *state* of diplomatic relations and military hostility.

- Relations $R_t \in \{0, 1\}$ (no, yes)
- Dispute $D_t \in \{0, 1\}$ (no, yes)
- Collected in $S_t = (R_t, D_t)$

Initial state $S_0 = (R_0, D_0)$ exogenous.

Future states S_t depend on US actions at $t - 1$.

Formal Model: Actions

In each period, the US takes *actions* on diplomatic relations and military disputes.

- Relations $r_t \in \{0, 1\}$
- Dispute $d_t \in \{0, 1\}$
- Collected in $a_t = (r_t, d_t)$

Sole constraint: can't establish new relations during dispute. (Never occurs in data.)

Formal Model: Transitions

Distribution over next state S_{t+1} is a function of (S_t, a_t).

- $R_{t+1} = r_t$ with probability one
- D_{t+1} probabilistic function of D_t and d_t ▸ Details
  - Other country may initiate dispute or back down from an ongoing one

Markov property: S_{t+1} depends on states/actions before t only through S_t.

Formal Model: Static Utilities

US's immediate payoff each period depends on the current state and its actions.

$$u(S_t, a_t) = \underbrace{f_{state}(S_t)}_{\text{state payoff}} + \underbrace{f_{rel}(r_t \mid S_t) + f_{disp}(d_t \mid S_t)}_{\text{state-dependent action payoffs}}$$

Goal of statistical analysis is to estimate the components of this *static utility* function.

- State payoffs — long-run influences
  - Sunk cost/benefit at time of action choice
- Action payoffs — short-run influences

Statistical Model

The formal model is sparse by construction.

Want to find the specification of the model that best conforms to the observed data.

Will use that specification to analyze choice probabilities and counterfactuals.

Estimate via nested fixed point algorithm (Rust 1987). ▸ Details

Statistical Model: Observations

- Interactions between US and other countries, $m = 1, \ldots, M$
- Observed from $t = 0, 1, \ldots, T_m$
    - Time horizon for decision-making still assumed infinite
- Vector of covariates x_m that differ across countries
- Same discount factor δ in each time series
    - I fix $\delta = 0.95$ throughout the analysis

Statistical Model: State Payoffs

State payoff function:

$$f_{state}(S_t) = \underbrace{(x_m \cdot \beta_R)R_t}_{(1)} + \underbrace{(x_m \cdot \beta_D)D_t}_{(2)} + \underbrace{\beta_{rel \times disp} R_t D_t}_{(3)}$$

1. β_R: covariate influence on net benefit of relations
2. β_D: covariate influence on net benefit of dispute
3. $\beta_{rel \times disp}$: ongoing material or political cost of maintaining relations during dispute

Statistical Model: Relations Action Payoffs

R_t	r_t	Utility from r_t
0	0	0
0	1	$\theta_{establish}$
1	0	$\theta_{cutoff} + \theta_{cutoff \times disp} D_t$
1	1	0

- $\theta_{establish}, \theta_{cutoff}$: immediate net benefits of respective actions in peacetime
- $\theta_{cutoff \times disp}$: effect of dispute on benefit of cutting off
    - Interpret as symbolic/position-taking effect

Statistical Model: Dispute Action Payoffs

D_t	d_t	Utility from d_t
0	0	0
0	1	$\theta_{init} + \theta_{init \times rel} R_t$
1	0	$\theta_{backdown} + \theta_{backdown \times rel} R_t$
1	1	0

- $\theta_{init}, \theta_{backdown}$: immediate net benefits when no relations
- $\theta_{init \times rel}, \theta_{backdown \times rel}$: direct effect of diplomatic relations on short-run incentives
    - Diplomats as peacemakers

Data

- Unit of observation: country–month
- US actions toward $M = 205$ other countries
- Time frame 1816–2007
- 154,768 country–month observations

Data: Diplomatic Relations

Collected new data on exact timing of changes in US diplomatic representation abroad, 1776–2016.

$R_t = 1$ if and only if US had legation, embassy, or equivalent level of permanent representation throughout month t.

Data: Diplomatic Relations

Establishment of the British Legation in the U.S., 1791.

The first British envoy to the United States was George Hammond who became Minister to the United States of America on July 5, 1791.

Interruption of Relations, 1812.

The United States broke relations with the United Kingdom of Great Britain and Ireland when it declared war against its former colonial ruler on June 18, 1812, although Chargé d'Affaires Jonathan Russell did not close the legation until July 29, 1812.

Re-establishment of Relations, 1815.

Future President John Quincy Adams, son of John Adams, was appointed Envoy Extraordinary and Minister Plenipotentiary, to the United Kingdom on February 28, 1815, and presented his credentials in London on August 8, 1815.

Elevation of Legation to Embassy, 1893.

The U.S. legation in London became the U.S. Embassy in London when Ambassador Thomas Bayard presented his credentials to the Court of St. James on June 22, 1893.

Coded from narratives at `https://history.state.gov/`.

Data: Disputes

$D_t = 1$ when there is a Militarized Interstate Dispute, according to new codings by Gibler, Miller, and Little (2016).

Data: Covariates

- Relative power of US
- Distance from US
- Major power status
- S-score with US (alliance portfolio similarity)
- Polity score

For time-varying characteristics, use the average across the sample period.

- Have to do this to keep state space manageable
- Robustness checks: re-run model on substantively important subsamples

Descriptive Statistics: Dispute Actions

R_t	D_t	$d_t = 0$	$d_t = 1$
0	0	99.7%	0.3%
1	0	99.9%	0.1%
0	1	6.0%	94.0%
1	1	17.1%	82.9%

Clear positive association with dispute termination. Less clear negative association with initiation.

Descriptive Statistics: Diplomatic Actions

R_t	D_t	$r_t = 0$	$r_t = 1$
0	0	99.2%	0.8%
0	1	100%	
1	0	0.04%	99.96%
1	1	1.4%	98.6%

Negative association between ongoing hostility and the probability of initiating or maintaining diplomatic relations.

Structural Estimation: Reciprocal Effects

Average estimated effect of state variables on US choices.

Effect	Absolute	Relative
Relations $\Rightarrow$ Initiation	-0.002	-0.7
	$[-0.003, -0.001]$	$[-0.8, -0.6]$
Relations $\Rightarrow$ Termination	0.11	1.3
	$[0.07, 0.14]$	$[0.8, 1.8]$
Dispute $\Rightarrow$ Sever relations	0.012	30.6
	$[0.006, 0.021]$	$[12.5, 56.9]$

Structural Estimation: Static Utility Components

Parameter	Estimate	Std. Error	$p < 0.05$?
Long-run state payoff			
$\beta_{rel \times disp}$	−0.5	0.06	✓
Immediate diplomatic action payoff			
$\theta_{establish}$	−5.4	1.5	✓
θ_{cutoff}	−7.3	1.5	✓
$\theta_{cutoff \times disp}$	−0.8	0.8	
Immediate dispute action payoff			
θ_{init}	−8.7	1.9	✓
$\theta_{init \times rel}$	3.4	0.8	✓
$\theta_{backdown}$	0.4	1.9	
$\theta_{backdown \times rel}$	−3.6	0.7	✓

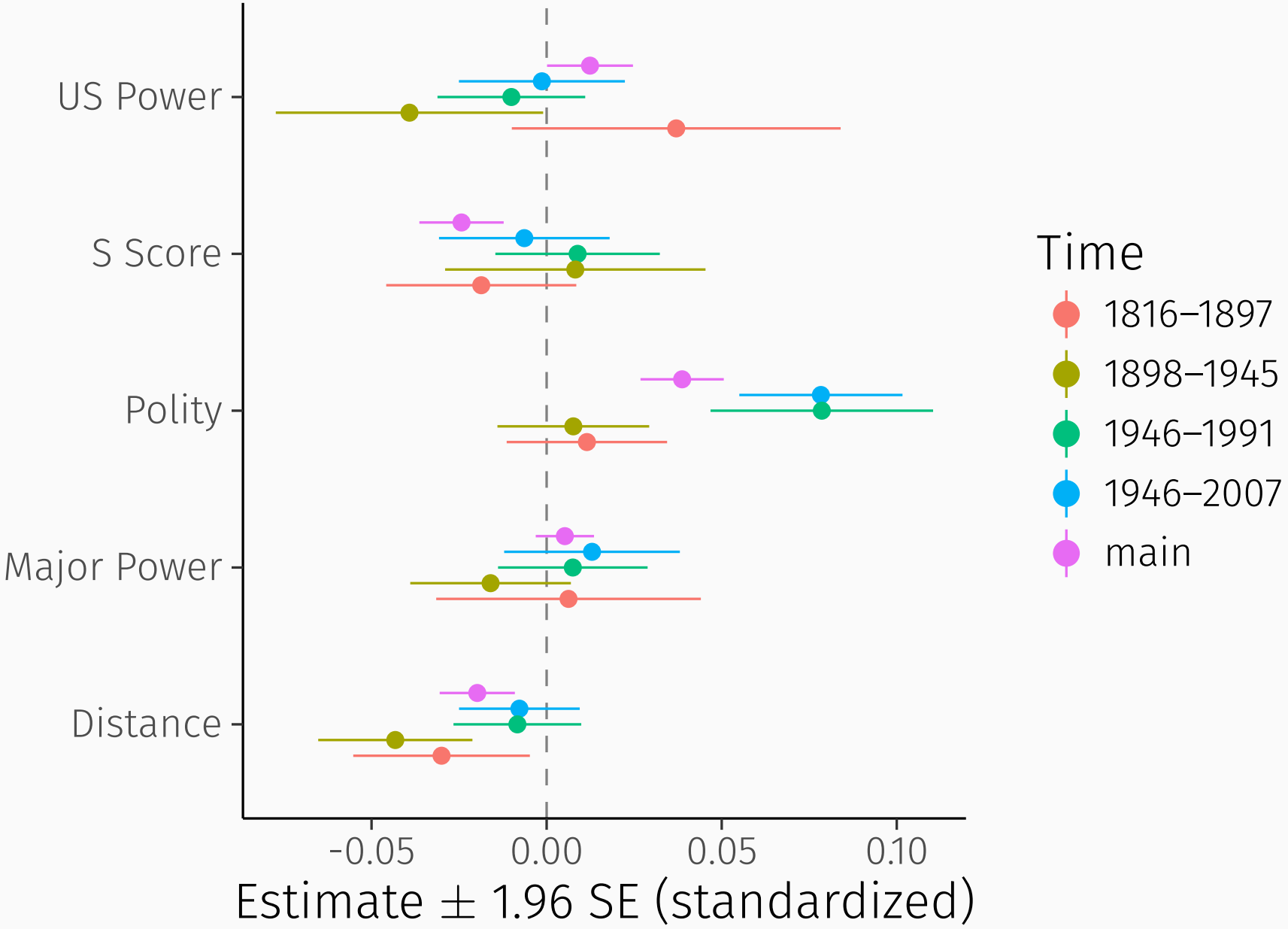
Structural Estimation: Interpretation

- Overall, diplomacy has pacific effects
- Effects mainly arise from incentive to avoid ongoing cost of maintaining relations during crisis
- Short-run effects of diplomatic relations are the *opposite* of what diplomats-as-peacemakers would predict
- No evidence of symbolic benefit from cutting off relations in time of crisis

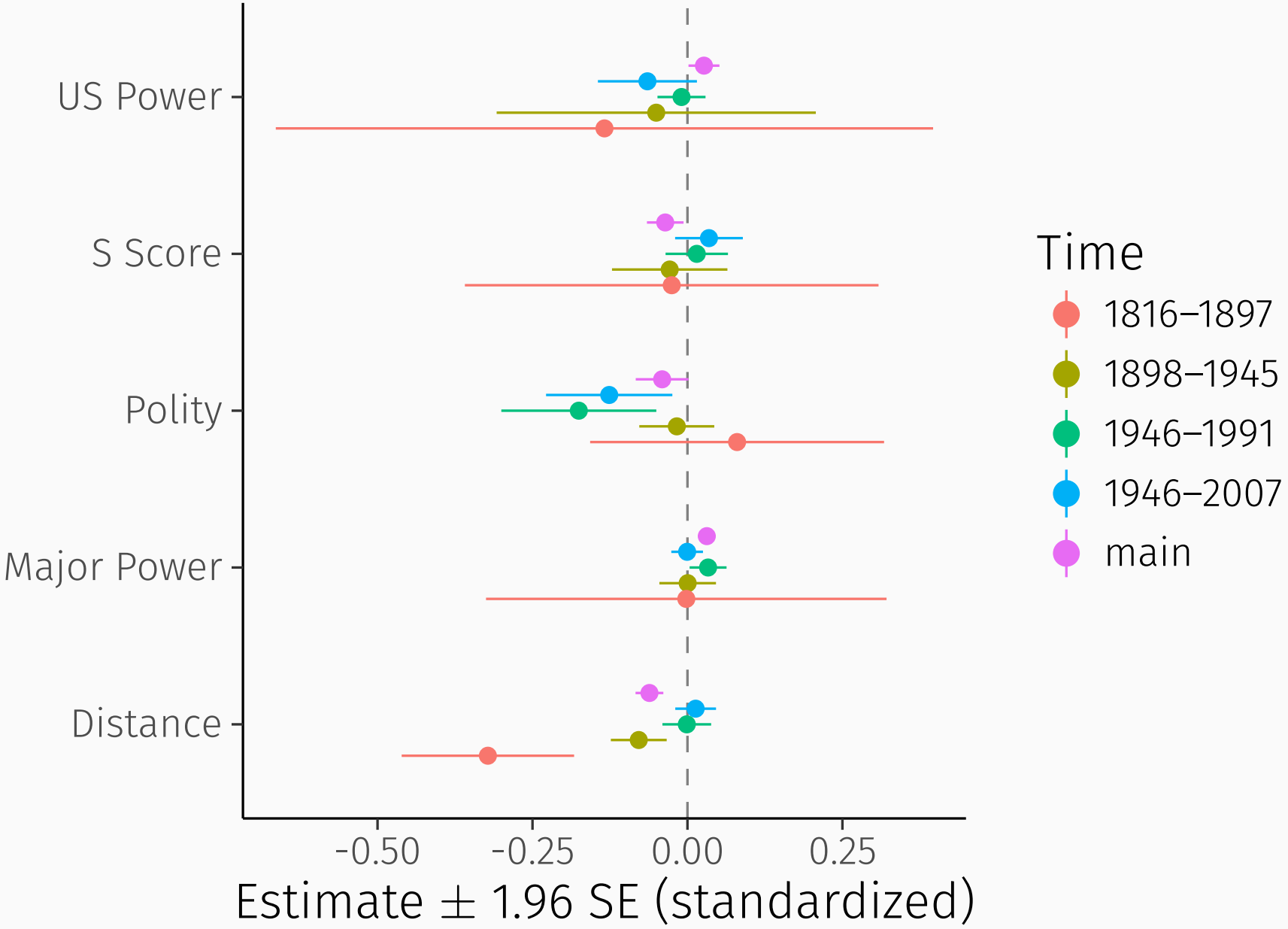
Structural Estimation: Interpretation

Real political costs for diplomatic presence in time of crisis.

Structural Estimation: Covariate Influence on Relations Payoffs



Structural Estimation: Covariate Influence on Dispute Payoffs



Conclusions

What I've done:

- Collected new data to estimate a structural model of diplomacy and conflict management
- Found evidence that formal diplomatic ties reduce chances of conflict
- Identified the long-run costs of maintaining relations during a dispute as the main source of the pacific effect

Conclusions

Directions for future work:

- Extend scope of analysis — how much does US case generalize?
- Incorporate strategic interdependence
- Richer theory and evidence about why it is especially costly to maintain relations during disputes

Thank you!

Feedback:

brenton.kenkel@vanderbilt.edu

Formal and Statistical Model: Transitions

If $D_t = 0$ and $d_t = 1$, then $D_{t+1} = 1$.

Probability other country initiates crisis even if $D_t = d_t = 0$:

$$\Pr(D_{t+1} = 1 \,|\, D_t = 0, d_t = 0) = \frac{1}{1 + \exp(-z_m \cdot \gamma_{init})}.$$

Probability other country backs down even if $D_t = d_t = 1$:

$$\Pr(D_{t+1} = 0 \,|\, D_t = 1, d_t = 1) = \frac{1}{1 + \exp(-z_m \cdot \gamma_{backdown})}.$$

Structural Estimation: Transition Function

Parameter	Estimate	Std. Error	$p < 0.05$?
Other country initiates			
γ_{init}: Intercept	−1.7	0.9	
γ_{init}: US Power	−7.8	1.3	✓
Other country backs down			
$\gamma_{backdown}$: Intercept	−2.9	1.6	
$\gamma_{backdown}$: US Power	−1.4	2.3	

◂ Formal Model: Transitions

Formal Model: Decision Problem

In each period, the US chooses a_t to solve:

$$\max_a \left[\underbrace{u(S_t, a)}_{\text{static utility}} + \underbrace{\epsilon_t(a)}_{\text{random shock}} + \underbrace{\delta EV(S_t, a)}_{\text{continuation value}} \right]$$

- Random shocks ensure all feasible actions are chosen with positive probability in all states.
- Continuation values found by solving fixed-point problem, as in Rust (1987). Unique optimal decision plan.

Continuation Value Functional Equation

$EV(\cdot, \cdot)$ is the unique solution to the functional equation

$$EV(S, a) = \sum_{S'} E\left[\max_{a'} \left\{u(S', a') + \epsilon(a') + \delta EV(S', a')\right\}\right] \pi(S' \mid S, a)$$

where π is the state transition function,

$$\pi(S' \mid S, a) = \Pr(S_{t+1} = S' \mid S_t = S, a_t = a).$$

Per Rust (1987), if each $\epsilon_t(a)$ is i.i.d. Type 1 Extreme Value, the functional equation becomes

$$EV(S, a) = \sum_{S'} \left[\sum_{a'} \exp(u(S', a') + \delta EV(S', a'))\right] \pi(S' \mid S, a).$$

◂ Statistical Model