

# Rivalries, War, and Trade

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## **International relations matter!**

- ▶ Relations between countries can have a significant impact on trade flows
- ▶ Most research focuses on discrete conflict events impact trade
- ▶ But events are often a culmination of many years of developing or deteriorating relationships

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## **What we study: strategic rivalries and trade**

- ▶ “Strategic rivalry”: a mutually felt antagonistic relationship, possible precursor to conflict
- ▶ Rivalries emerge for a variety of reasons, may be precursors to conflict but not necessarily
- ▶ How much of the measured effect of conflict can be explained by mutual antagonism as opposed to the conflict itself?

## What is a strategic rivalry?

We rely on the categorization of Thompson, Sakuwa, and Hosur Sohas (2022), extending an earlier database by Thompson (2001):

*“The first time two states collide over some mutual interest, it is simply a conflict. Allow the conflict to go unresolved or to fester over time and decision-makers will begin to perceive their adversary as a persistent problem. Add some sense of **potential military clash** over the persistent problem and you have a rivalry” (Thompson et al 2022, p. 2)*

*More simply, they determine rivalries based on “who decision-makers perceive to be their adversaries” (p. 3)*

Some examples: Cambodia-Vietnam 1970-1983, Iran-USA 1982-present, Honduras-Nicaragua 1980-1987, Cuba-South Africa 1975-1988



Our investigation complements the existing literature by focusing on “rivalry” isolates the effects of **being enemies**.

Prior related work focuses mainly on the effects of actual battlefield conflicts:

- ▶ Martin, Mayer, and Thoenig (2008) find that war reduces trade by 22%. Using a longer period, Glick and Taylor find the effect is 90%.  
(also: Anderton and Carter 2001, Mansfield and Bronson 1997, Kesht, Pollins, and Reuveny 2004, Morrow, Siverson, and Taberes 1998, Mansfield and Pevehouse 2000, Russett & Oneal 2001, Oneal, Russett, and Berbaum 2003)
- ▶ Effects of defensive alliances on trade: Long (2008), Halm (2016), Li, Ge, and Lin (2024), Jackson and Shepotylo (2024)
- ▶ Effects of the Iron Curtain: Campos, Heid, and Timini (2024)
- ▶ Lower levels of “conflict”: Taralashvili 2024 (“soft conflict”), Heilman 2016 (boycotts), Gopinath, Gourinchas, Presbitero, and Topolova 2025 (rival geopolitical blocs)
- ▶ Only Long (2008) has previously studied how bilateral rivalries impact trade

## Our data

- ▶ Aggregate trade data: IMF-DOTS for the post-war period, supplemented with Gleditsch (2002) trade data for non-market economies
- ▶ Industry category data for 1962 onwards constructed from NBER UN data + COMTRADE
- ▶ Strategic rivalries from Thompson et al; other covariates from standard sources

## Summary of our findings

- ▶ For the full sample, rivalries estimated to reduce trade by 16%, marginally significant
- ▶ We find large, statistically significant effects for:
  - ◊ more **extensive** rivalries that cover multiple dimensions (from -30% to -67%)
  - ◊ rivalries that have **ideological** (-44%), **spatial** (-29%), or **interventionary** (-37%) dimensions in particular
  - ◊ **longstanding** rivalries when they hit the 10 year mark (-24%)
  - ◊ rivalries **during the Cold War era** (-69%)
- ▶ Rivalries explain about 40% of the estimated effect of conflict.

## Our data

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- ▶ Industry category data for 1962 onwards constructed from NBER UN data + COMTRADE
- ▶ Strategic rivalries from Thompson et al; other covariates from standard sources

## Summary of findings, continued:

- ▶ At the industry level, larger effects found for:
  - ◊ semiconductor trade, parts and accessories, energy-related trade
  - ◊ (when the Cold War ends) capital goods, R&D-intensive and computer-intensive trade, aircraft and aircraft parts

Otherwise results tend to be broadly consistent across industry categories



### **Rivalries:** from Thompson et al (2022)

- ▶ Data spans 19th century to 2022
- ▶ Includes information on if a rivalry is *positional*, *spatial*, *ideological*, and/or *interventionary*.
  - ◊ 57% of rivalries fit more than one of these categories.

### **Trade:**

- ▶ IMF-DOTS / Gleditsch (aggregate bilateral trade): 218 countries from 1950-2019
- ▶ NBER-UN / COMTRADE (industry category trade): 1962 onwards

### **Other covariates:**

- ▶ FTAs from Baier-Bergstrand (NSF-Kellogg) database
- ▶ Conflict data from PRIO
- ▶ Alliances (defense treaties) from COW
- ▶ Gravity variables from CEPII database

### More on rivalries

Rivalries are:

- ▶ bilateral (need to be mutual)
- ▶ between states that are comparable / “in the same league”
  - ◊ otherwise they may be enemies but not “rivals”
- ▶ do not require active conflict
- ▶ *strategic*

## Frequency

- ▶ Both wars and rivalries are rare, but rivalries are less rare:
  - ◊ 0.06% of observations in our data are associated with active conflicts
  - ◊ 0.39% are associated with strategic rivalries
- ▶ For pairs (cross-section only):
  - ◊ 0.97% pairs have had at least one conflict
  - ◊ 0.81% have had at least one rivalry

## Overlap

- ▶ Conditional on having a rivalry, the probability of observing conflict is 6%
- ▶ Conditional on *not* having a rivalry, the probability is 0.04%.
- ▶ However, most pairs that have had a rivalry (66.7%) have never had an active conflict

$$y_{ijt} = \exp(\alpha_{it} + \gamma_{jt} + \eta_{ij} + X_{ijt}\beta + \delta RIVAL_{ijt}) \times \varepsilon_{ijt}$$

- ▶  $y_{ijt}$  is exports from  $i$  to  $j$  in year  $t$
- ▶  $\alpha_{it}$ ,  $\gamma_{jt}$ , and  $\eta_{ij}$  are exporter-year, importer-year, and exporter-importer fixed effects
- ▶  $X_{ijt}$ : controls (FTA, WTO, colonial relationship, active military conflict, defense treaty)
- ▶  $RIVAL$  is a binary variable equal to 1 if the two countries have a rivalry
- ▶ Estimate using PPML

# Results for full sample

	Dependent variable: Aggregate Bilateral Trade Flows, 1950-2019								
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
FTA	0.127*** (0.021)	0.127*** (0.021)	0.126*** (0.021)	0.123*** (0.021)	0.122*** (0.021)	0.125*** (0.021)	0.121*** (0.021)	0.121*** (0.021)	0.121*** (0.021)
GATT / WTO	-0.087 (0.067)	-0.104 (0.063)	-0.094 (0.063)	-0.082 (0.062)	-0.085 (0.062)	-0.091 (0.062)	-0.083 (0.062)	-0.088 (0.062)	-0.087 (0.062)
Current colony	0.386* (0.210)	0.385* (0.210)	0.385* (0.210)	0.375* (0.206)	0.376* (0.206)	0.385* (0.210)	0.376* (0.206)	0.377* (0.206)	0.376* (0.206)
Active conflict		-0.622*** (0.118)	-0.496*** (0.123)	-0.496*** (0.124)	-0.496*** (0.124)	-0.390*** (0.110)	-0.391*** (0.110)	-0.352*** (0.102)	-0.363*** (0.104)
Rivalry			-0.165* (0.091)	-0.173* (0.091)	-0.172* (0.091)			0.377* (0.209)	
Rivalry extent (0-4)						-0.151*** (0.044)	-0.154*** (0.044)	-0.368*** (0.112)	
Defense alliance				0.386*** (0.062)	0.332*** (0.061)		0.333*** (0.060)	0.330*** (0.060)	0.329*** (0.060)
Eastern bloc					1.473*** (0.213)		1.472*** (0.213)	1.475*** (0.213)	1.475*** (0.213)
Extent=1									0.005 (0.112)
Extent=2									-0.345*** (0.082)
Extent=3									-0.987*** (0.373)
Extent=4									-0.375 (0.633)
N	1842261	1842261	1842261	1842261	1842261	1842261	1842261	1842261	1842261

Poisson PML with three-way (exporter-time, importer-time, and exporter-importer) fixed effects. Standard errors clustered by exporter-importer pair. \*  $p < 0.10$ , \*\*  $p < .05$ , \*\*\*  $p < .01$ .

### Alternate specification - Rivalry extent

Exploiting another feature of the rivalry data, we estimate:

$$y_{ijt} = \exp(\alpha_{it} + \gamma_{jt} + \eta_{ij} + X_{ijt}\beta + \delta_1 RIVAL_{ijt} + \delta_2 EXTENT_{ijt}) \times \varepsilon_{ijt},$$

where  $EXTENT_{ijt}$  is a **0-4** variable for the number of dimensions a rivalry covers.

Idea: Rivalries spanning more than one dispute dimension may be perceived as more difficult to resolve peacefully and/or quickly

- ▶ Hypothesized in Thompson et al.
- ▶ Possible expectations channel
- ▶ May also reflect rivalry intensity

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Exploiting another feature of the rivalry data, we estimate:

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where  $EXTENT_{ijt}$  is a **0-4** variable for the number of dimensions a rivalry covers.

The 4 possible rivalry dimensions are:

1. **Positional** rivalries: states competing for influence and/or prestige
2. **Spatial** rivalries: states competing for control over some sort of territory
3. **Ideological** rivalries: states contest the relative virtues of different belief systems (political, economic, societal, religious)
4. **Interventionary** rivalries: a state intrudes into the internal affairs of the other in order to gain influence or reduce threat

57% of rivalries have at least 2 of these attributes. For example, Armenia-Azerbaijan 1991-present is both spatial and interventionary.

## Different types of rivalry

Year	Number of rivalries	Positional	Spatial	Ideological	Interventionary
1950	36	63.9%	66.7%	27.8%	36.1%
1960	44	61.4%	65.9%	38.6%	34.0%
1970	60	53.3%	65.0%	43.3%	43.3%
1980	70	50.0%	60.0%	42.9%	48.6%
1990	66	50.0%	60.6%	27.2%	51.5%
2000	74	39.2%	44.6%	14.9%	64.9%
2010	49	53.1%	55.1%	20.4%	53.1%



# Results for full sample

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FTA	0.127*** (0.021)	0.127*** (0.021)	0.126*** (0.021)	0.123*** (0.021)	0.122*** (0.021)	0.125*** (0.021)	0.121*** (0.021)	0.121*** (0.021)	0.121*** (0.021)
GATT / WTO	-0.087 (0.067)	-0.104 (0.063)	-0.094 (0.063)	-0.082 (0.062)	-0.085 (0.062)	-0.091 (0.062)	-0.083 (0.062)	-0.088 (0.062)	-0.087 (0.062)
Current colony	0.386* (0.210)	0.385* (0.210)	0.385* (0.210)	0.375* (0.206)	0.376* (0.206)	0.385* (0.210)	0.376* (0.206)	0.377* (0.206)	0.376* (0.206)
Active conflict		-0.622*** (0.118)	-0.496*** (0.123)	-0.496*** (0.124)	-0.496*** (0.124)	-0.390*** (0.110)	-0.391*** (0.110)	-0.352*** (0.102)	-0.363*** (0.104)
Rivalry			-0.165* (0.091)	-0.173* (0.091)	-0.172* (0.091)			0.377* (0.209)	
Rivalry extent (0-4)						-0.151*** (0.044)	-0.154*** (0.044)	-0.368*** (0.112)	
Defense alliance				0.386*** (0.062)	0.332*** (0.061)		0.333*** (0.060)	0.330*** (0.060)	0.329*** (0.060)
Eastern bloc					1.473*** (0.213)		1.472*** (0.213)	1.475*** (0.213)	1.475*** (0.213)
Extent=1									0.005 (0.112)
Extent=2									-0.345*** (0.082)
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Poisson PML with three-way (exporter-time, importer-time, and exporter-importer) fixed effects. Standard errors clustered by exporter-importer pair. \*  $p < 0.10$ , \*\*  $p < .05$ , \*\*\*  $p < .01$ .

# Results for full sample

Dependent variable: Aggregate Bilateral Trade Flows, 1950-2015									
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
FTA	0.127*** (0.021)	0.127*** (0.021)	0.126*** (0.021)	0.123*** (0.021)	0.122*** (0.021)	0.125*** (0.021)	0.121*** (0.021)	0.121*** (0.021)	0.121*** (0.021)
GATT / WTO	-0.087 (0.067)	-0.104 (0.063)	-0.094 (0.063)	-0.082 (0.062)	-0.085 (0.062)	-0.091 (0.062)	-0.083 (0.062)	-0.088 (0.062)	-0.087 (0.062)
Current colony	0.386* (0.210)	0.385* (0.210)	0.385* (0.210)	0.375* (0.206)	0.376* (0.206)	0.385* (0.210)	0.376* (0.206)	0.377* (0.206)	0.376* (0.206)
Active conflict		-0.622*** (0.118)	-0.496*** (0.123)	-0.496*** (0.124)	-0.496*** (0.124)	-0.390*** (0.110)	-0.391*** (0.110)	-0.352*** (0.102)	-0.363*** (0.104)
Rivalry			-0.165* (0.091)	-0.173* (0.091)	-0.172* (0.091)			0.377* (0.209)	
Rivalry extent (0-4)						-0.151*** (0.044)	-0.154*** (0.044)	-0.368*** (0.112)	
Defense alliance				0.386*** (0.062)	0.332*** (0.061)		0.333*** (0.060)	0.330*** (0.060)	0.329*** (0.060)
Eastern bloc					1.473*** (0.213)		1.472*** (0.213)	1.475*** (0.213)	1.475*** (0.213)
Extent=1									0.005 (0.112)
Extent=2									-0.345*** (0.082)
Extent=3									-0.987*** (0.373)
Extent=4									-0.375 (0.633)
Rivalry + 1×Extent								0.009	
Rivalry + 2×Extent								-0.359***	
Rivalry + 3×Extent								-0.727***	
Rivalry + 4×Extent								-1.095***	
N	1842261	1842261	1842261	1842261	1842261	1842261	1842261	1842261	1842261

Poisson PML with three-way (exporter-time, importer-time, and exporter-importer) fixed effects. Standard errors clustered by exporter-importer pair. \*  $p < 0.10$ , \*\*  $p < .05$ , \*\*\*  $p < .01$ .

# Results by type of rivalry

	(1) Base	(2) Positional	(3) Spatial	(4) Interventionary	(5) Ideology	(6) Principal	(7) Asym
FTA	0.122*** (0.021)	0.122*** (0.021)	0.121*** (0.021)	0.122*** (0.021)	0.122*** (0.021)	0.122*** (0.021)	0.122*** (0.021)
GATT / WTO	-0.085 (0.062)	-0.089 (0.062)	-0.085 (0.062)	-0.090 (0.062)	-0.089 (0.063)	-0.086 (0.063)	-0.085 (0.063)
Current colony	0.376* (0.206)	0.376* (0.206)	0.376* (0.206)	0.376* (0.206)	0.376* (0.206)	0.376* (0.206)	0.376* (0.206)
Active conflict	-0.496*** (0.124)	-0.342*** (0.110)	-0.367*** (0.107)	-0.283** (0.113)	-0.518*** (0.129)	-0.481*** (0.129)	-0.444*** (0.135)
Rivalry	-0.172* (0.091)	-0.379*** (0.096)	-0.057 (0.107)	-0.136 (0.098)	-0.134 (0.096)	-0.192* (0.109)	-0.095 (0.101)
Defensive Alliance	0.332*** (0.061)	0.332*** (0.061)	0.331*** (0.060)	0.332*** (0.061)	0.332*** (0.060)	0.332*** (0.061)	0.332*** (0.061)
Eastern Bloc	1.473*** (0.213)	1.473*** (0.213)	1.475*** (0.213)	1.472*** (0.213)	1.472*** (0.213)	1.472*** (0.213)	1.473*** (0.213)
Positional rivalry		0.233* (0.137)					
Spatial rivalry			-0.288** (0.121)				
Interventionary rivalry				-0.324** (0.149)			
Ideological rivalry					-0.437** (0.189)		
Principal rivalry						0.067 (0.145)	
Asymmetric rivalry							-0.147 (0.142)
<b>Combined coefficient</b>	-	-0.146 (0.099)	-0.345*** (0.090)	-0.460*** (0.114)	-0.571*** (0.160)	-0.125 (0.120)	-0.242* (0.127)
N	1842261	1842261	1842261	1842261	1842261	1842261	1842261

Poisson PML with three-way (exporter-time, importer-time, and exporter-importer) fixed effects. Standard errors clustered by exporter-importer pair. \*  $p < 0.10$ , \*\*  $p < .05$ , \*\*\*  $p < .01$ .

## Results for different eras

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
	All years 1950-2019	Cold War 1950-1989	Early Cold War 1950-1971	Late Cold War 1972-1989	Post Cold War 1990-2019	End Cold War 1985-1995	War on Terror 2001-2019
FTA	0.122*** (0.021)	0.321*** (0.045)	0.355*** (0.054)	0.223*** (0.038)	0.069*** (0.022)	0.272*** (0.041)	0.084*** (0.021)
GATT / WTO	-0.085 (0.062)	-0.137*** (0.047)	-0.121*** (0.046)	-0.117** (0.056)	0.116* (0.063)	-0.043 (0.045)	0.111** (0.054)
Current colony	0.376* (0.206)	1.167*** (0.139)	0.565*** (0.076)	0.360 (0.315)	0.097 (0.086)		
Active conflict	-0.496*** (0.124)	-0.124 (0.171)	-0.171 (0.182)	0.021 (0.231)	-0.556*** (0.127)	-0.140 (0.135)	-0.625*** (0.139)
Rivalry	-0.172* (0.091)	-1.156*** (0.201)	-0.410** (0.191)	-1.054*** (0.221)	-0.034 (0.081)	-0.467*** (0.119)	0.158* (0.084)
Defensive alliance	0.332*** (0.061)	0.024 (0.057)	0.391*** (0.094)	-0.008 (0.051)	0.278*** (0.060)	0.214*** (0.078)	0.005 (0.148)
Eastern bloc	1.473*** (0.213)	1.111** (0.446)	2.819*** (0.427)	-0.251 (0.250)	1.328*** (0.231)	0.929*** (0.199)	
<i>Add interaction with rivalry extent</i>							
Rivalry	0.377* (0.209)	-0.240 (0.696)	1.721*** (0.464)	-2.249*** (0.600)	0.332 (0.215)	0.482** (0.213)	0.727*** (0.212)
Extent (0-4)	-0.368*** (0.112)	-0.526 (0.364)	-1.022*** (0.238)	0.798*** (0.308)	-0.260** (0.117)	-0.538*** (0.131)	-0.420*** (0.118)
N	1842261	693590	246049	362390	997798	250903	636229

Poisson PML with three-way (exporter-time, importer-time, and exporter-importer) fixed effects. Standard errors clustered by exporter-importer pair. \*  $p < 0.10$ , \*\*  $p < .05$ , \*\*\*  $p < .01$ .

# Results by industry category

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
	UN data (all trade)	Capital goods	Consumer Goods	Parts & Accessories	Computer-intensive	"Proprietary capital"-intensive	R&D-intensive	Energy-related trade	Aerospace trade	Semiconductor trade
<i>Main sample</i>										
FTA	0.129*** (0.023)	0.057* (0.033)	0.114*** (0.027)	0.123*** (0.024)	0.071** (0.032)	0.118*** (0.031)	0.035 (0.028)	0.070 (0.056)	-0.318*** (0.111)	-0.006 (0.063)
GATT / WTO	-0.193*** (0.074)	-0.169 (0.111)	-0.025 (0.077)	-0.089 (0.080)	-0.293*** (0.077)	-0.250** (0.098)	-0.368*** (0.128)	-0.205* (0.122)	1.261*** (0.249)	-0.232 (0.220)
Colony	0.399*** (0.143)	0.329 (0.272)	0.546*** (0.167)	0.171 (0.106)	0.368* (0.188)	0.383*** (0.140)	0.477** (0.213)	0.912*** (0.165)	1.653*** (0.294)	0.292*** (0.100)
Active conflict	-0.276** (0.133)	-0.191 (0.131)	-0.087 (0.208)	-0.189** (0.091)	-0.298*** (0.091)	-0.090 (0.100)	-0.402*** (0.119)	-0.227 (0.306)	-1.278 (0.809)	0.131 (0.337)
Rivalry	-0.113 (0.092)	0.133 (0.095)	-0.101 (0.076)	-0.129 (0.080)	-0.087 (0.093)	-0.072 (0.096)	0.020 (0.099)	-0.188 (0.331)	0.015 (0.348)	-0.635** (0.299)
Defense treaty	0.208*** (0.063)	0.158** (0.067)	0.217*** (0.063)	0.314*** (0.056)	0.211*** (0.067)	0.414*** (0.064)	0.162** (0.072)	0.094 (0.233)	0.725*** (0.226)	0.100 (0.179)
Eastern bloc	0.570*** (0.213)	1.721*** (0.387)	0.777*** (0.229)	1.328*** (0.209)	1.328*** (0.289)	0.275 (0.226)	1.278*** (0.334)	0.533 (0.465)	6.204*** (1.087)	3.612*** (0.769)
<i>Main sample - with rivalry extent</i>										
Rivalry	0.336* (0.199)	-0.016 (0.185)	0.083 (0.179)	0.410* (0.219)	0.033 (0.222)	0.355 (0.287)	-0.093 (0.233)	0.944 (0.700)	0.743 (0.812)	1.831*** (0.305)
Extent (0-4)	-0.308*** (0.114)	0.102 (0.111)	-0.130 (0.106)	-0.350*** (0.121)	-0.081 (0.131)	-0.270 (0.181)	0.078 (0.132)	-0.814** (0.401)	-0.713 (0.566)	-1.434*** (0.170)

Poisson PML with three-way (exporter-time, importer-time, and exporter-importer) fixed effects. Standard errors clustered by exporter-importer pair. \*  $p < 0.10$ , \*\*  $p < .05$ , \*\*\*  $p < .01$ .

# Results by industry category

	(1) UN data (all trade)	(2) Capital goods	(3) Consumer Goods	(4) Parts & Accessories	(5) Computer- intensive	(6) "Proprietary capital"- intensive	(7) R&D-intensive	(8) Energy-related trade	(9) Aerospace trade	(10) Semiconductor trade
<i>Main sample</i>										
FTA	0.129*** (0.023)	0.057* (0.033)	0.114*** (0.027)	0.123*** (0.024)	0.071** (0.032)	0.118*** (0.031)	0.035 (0.028)	0.070 (0.056)	-0.318*** (0.111)	-0.006 (0.063)
GATT / WTO	-0.193*** (0.074)	-0.169 (0.111)	-0.025 (0.077)	-0.089 (0.080)	-0.293*** (0.077)	-0.250** (0.098)	-0.368*** (0.128)	-0.205* (0.122)	1.261*** (0.249)	-0.232 (0.220)
Colony	0.399*** (0.143)	0.329 (0.272)	0.546*** (0.167)	0.171 (0.106)	0.368* (0.188)	0.383*** (0.140)	0.477** (0.213)	0.912*** (0.165)	1.653*** (0.294)	0.292*** (0.100)
Active conflict	-0.276** (0.133)	-0.191 (0.131)	-0.087 (0.208)	-0.189** (0.091)	-0.298*** (0.091)	-0.090 (0.100)	-0.402*** (0.119)	-0.227 (0.306)	-1.278 (0.809)	0.131 (0.337)
Rivalry	-0.113 (0.092)	0.133 (0.095)	-0.101 (0.076)	-0.129 (0.080)	-0.087 (0.093)	-0.072 (0.096)	0.020 (0.099)	-0.188 (0.331)	0.015 (0.348)	-0.635** (0.299)
Defense treaty	0.208*** (0.063)	0.158** (0.067)	0.217*** (0.063)	0.314*** (0.056)	0.211*** (0.067)	0.414*** (0.064)	0.162** (0.072)	0.094 (0.233)	0.725*** (0.226)	0.100 (0.179)
Eastern bloc	0.570*** (0.213)	1.721*** (0.387)	0.777*** (0.229)	0.267 (0.209)	1.328*** (0.289)	0.275 (0.226)	1.278*** (0.334)	0.533 (0.465)	6.204*** (1.087)	3.612*** (0.769)
<i>Main sample - with rivalry extent</i>										
Rivalry	0.336* (0.199)	-0.016 (0.185)	0.083 (0.179)	0.410* (0.219)	0.033 (0.222)	0.355 (0.287)	-0.093 (0.233)	0.944 (0.700)	0.743 (0.812)	1.831*** (0.305)
Extent (0-4)	-0.308*** (0.114)	0.102 (0.111)	-0.130 (0.106)	-0.350*** (0.121)	-0.081 (0.131)	-0.270 (0.181)	0.078 (0.132)	-0.814** (0.401)	-0.713 (0.566)	-1.434*** (0.170)

Poisson PML with three-way (exporter-time, importer-time, and exporter-importer) fixed effects. Standard errors clustered by exporter-importer pair. \*  $p < 0.10$ , \*\*  $p < .05$ , \*\*\*  $p < .01$ .

# Results by industry category

	(1) UN data (all trade)	(2) Capital goods	(3) Consumer Goods	(4) Parts & Accessories	(5) Computer-intensive	(6) "Proprietary capital"-intensive	(7) R&D-intensive	(8) Energy-related trade	(9) Aerospace trade	(10) Semiconductor trade
<i>Cold War</i>										
Active conflict	0.107	-0.242	-0.293*	0.258	-0.058	0.165	0.002	0.433**	-0.549**	-0.926**
Rivalry	-0.923***	-1.432***	-1.025***	-1.014***	-0.993***	-1.008***	-1.040**	-0.160	-2.593***	-0.295
Defense treaty	-0.144*	0.011	-0.087	-0.044	-0.051	0.007	0.039	-0.164	0.789**	-0.008
<i>Early Cold War</i>										
Active conflict	-0.249	-0.305	-0.060	-0.376*	-0.286**	-0.263*	-0.455**	-0.207	-3.767***	-1.053
Rivalry	-0.250**	0.210	-0.315***	-0.237**	-0.174	-0.095	-0.005	0.621	0.347	0.842**
Defense treaty	0.053	0.074	0.203**	0.158*	0.214**	0.330***	0.095	-0.161	-0.766*	-0.805**
<i>Late Cold War</i>										
Active conflict	0.075	-0.501***	-0.299*	0.098	-0.144	-0.023	-0.142	0.493**	-0.382	-0.581*
Rivalry	-0.836***	-1.524***	-0.826***	-0.921***	-0.955***	-0.942***	-1.016**	-0.201	-2.614***	-0.354
Defense treaty	-0.145*	0.028	-0.045	-0.030	-0.021	0.021	0.026	-0.232	0.802**	0.010
<i>Post Cold War</i>										
Active conflict	-0.238**	-0.200*	0.158	-0.274***	-0.271***	-0.143*	-0.432***	-0.399	0.500	0.291
Rivalry	-0.002	0.203**	-0.067	-0.007	-0.053	0.060	0.096	0.115	0.149	-0.551*
Defense treaty	0.238***	0.094	0.194**	0.305***	0.147	0.419***	0.080	0.338**	1.185***	0.287
<i>End Cold War</i>										
Active conflict	-0.108	-0.073	-0.016	-0.052	-0.072	0.008	0.034	-0.244	0.424	-0.212
Rivalry	-0.585***	-0.773***	-0.451**	-0.419**	-0.791***	-0.496**	-0.794***	-1.042***	-3.488***	-0.699**
Defense treaty	0.046	0.168	0.158	-0.076	0.027	0.073	0.159*	-0.186	0.393	-0.191
<i>War on terror</i>										
Active conflict	-0.294**	-0.308**	-0.047	-0.290**	-0.368***	-0.186**	-0.468***	-0.319	-0.440	-0.876***
Rivalry	0.234***	0.344***	0.331**	0.145	0.222***	0.132	0.242**	0.153	1.359***	1.043***
Defense treaty	-0.159	-0.727***	-0.129	0.115	0.092	0.015	-0.378**	-0.234	0.172	-2.020***

Poisson PML with three-way (exporter-time, importer-time, and exporter-importer) fixed effects. Standard errors clustered by exporter-importer pair. \*  $p < 0.10$ , \*\*  $p < .05$ , \*\*\*  $p < .01$ .

## More results

	(1)	(2)	(3)	(4)	(5)
FTA	0.122*** (0.021)	0.122*** (0.021)	0.115*** (0.021)	0.115*** (0.021)	0.122*** (0.021)
GATT / WTO	-0.085 (0.063)	-0.098 (0.061)	-0.080 (0.063)	-0.080 (0.063)	-0.087 (0.063)
Colony	0.376* (0.206)	0.376* (0.207)	0.376* (0.207)	0.376* (0.207)	0.376* (0.206)
Active conflict	-0.456*** (0.151)	-0.738*** (0.201)	-0.606*** (0.132)	-0.606*** (0.132)	-0.464*** (0.127)
Recent conflict (within 10 years)	0.277 (0.224)				
Rivalry	-0.178* (0.092)	-0.174* (0.091)	-0.028 (0.077)	-0.025 (0.156)	-0.215** (0.105)
Defensive treaty	0.331*** (0.060)	0.335*** (0.060)	0.334*** (0.061)	0.334*** (0.061)	0.332*** (0.060)
Eastern bloc	1.475*** (0.213)	1.470*** (0.213)	1.473*** (0.213)	1.473*** (0.213)	1.472*** (0.213)
Future conflict (within 10 years)		-0.326** (0.144)			
Longstanding rivalry (after 10 year mark)			-0.245*** (0.056)	-0.245*** (0.056)	
Rivalries that last at least 10 years				-0.002 (0.173)	
Renewed rivalry					0.168 (0.134)
N	1842261	1842261	1842261	1842261	1842261

Poisson PML with three-way (exporter-time, importer-time, and exporter-importer) fixed effects. Standard errors clustered by exporter-importer pair. \*  $p < 0.10$ , \*\*  $p < .05$ , \*\*\*  $p < .01$ .



# More results

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
<i>Contemporaneous variables</i>								
FTA	0.122*** (0.021)	0.121*** (0.021)	0.100*** (0.022)	0.102*** (0.023)	0.111*** (0.020)	0.109*** (0.020)	0.112*** (0.020)	0.111*** (0.020)
GATT / WTO	-0.085 (0.062)	-0.088 (0.062)	-0.055 (0.064)	-0.058 (0.063)	-0.103** (0.051)	-0.104** (0.051)	-0.103** (0.051)	-0.104** (0.051)
Colony	0.376* (0.206)	0.377* (0.206)	-0.099 (0.172)	-0.098 (0.171)	0.464*** (0.170)	0.465*** (0.170)	0.464*** (0.170)	0.465*** (0.170)
Active conflict	-0.496*** (0.124)	-0.352*** (0.102)	-0.486*** (0.125)	-0.297*** (0.107)	-0.500*** (0.128)	-0.352*** (0.104)	-0.523*** (0.130)	-0.380*** (0.107)
Rivalry	-0.172* (0.091)	0.377* (0.209)	-0.144 (0.092)	0.485** (0.196)	-0.207** (0.092)	0.357* (0.207)	-0.178* (0.092)	0.338* (0.204)
Defense treaty	0.332*** (0.061)	0.330*** (0.060)	0.304*** (0.061)	0.300*** (0.060)	0.371*** (0.060)	0.370*** (0.060)	0.371*** (0.060)	0.370*** (0.060)
Eastern bloc	1.473*** (0.213)	1.475*** (0.213)	1.396*** (0.213)	1.388*** (0.212)	1.357*** (0.206)	1.358*** (0.206)	1.358*** (0.206)	1.358*** (0.206)
Extent		-0.368*** (0.112)		-0.427*** (0.114)		-0.379*** (0.111)		-0.351*** (0.109)
<i>Lead (n period ahead) variables</i>								
FTA					0.025* (0.015)	0.024 (0.015)	0.025* (0.015)	0.024 (0.015)
GATT / WTO					0.042 (0.064)	0.040 (0.064)	0.040 (0.064)	0.038 (0.064)
Active conflict					-0.248*** (0.061)	-0.245*** (0.064)	-0.249*** (0.061)	-0.246*** (0.063)
Colony					-0.143 (0.184)	-0.143 (0.184)	-0.143 (0.184)	-0.143 (0.184)
Rivalry					0.136*** (0.027)	0.146** (0.070)	0.138*** (0.026)	0.144** (0.070)
Defense treaty					-0.081*** (0.021)	-0.083*** (0.022)	-0.082*** (0.021)	-0.084*** (0.022)
Eastern bloc					0.190** (0.080)	0.192** (0.080)	0.190** (0.080)	0.193** (0.080)
Extent						-0.005 (0.045)		-0.003 (0.044)
Gravity variables × time trend	no	no	yes	yes	no	no	no	no
Lead variables	no	no	no	no	4 years	4 years	3 years	3 years
N	1842261	1842261	1806702	1806702	1842261	1842261	1842261	1842261

**What we investigate:** Does being “rivals” / “enemies” affect trade independently of an active conflict?

**What we find:**

- ▶ Rivalries tend to reduce trade
- ▶ Rivalries can have large effects
  - ◇ Largest effects for rivalries that are more “extensive” or are more “ideological” in nature
  - ◇ Larger negative effect during Cold War versus present day
- ▶ Accounting for the effects of rivalries can explain up to 40% of the effects of an active conflict
- ▶ Other notable findings:
  - ◇ Defense treaties promote trade
  - ◇ Larger effects for parts and accessories, energy-related trade, semi-conductors