Rivalries, War, and Trade

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Motivation

International relations matter!

- Relations between countries can have a significant impact on trade flows
- Most research focuses on how 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?

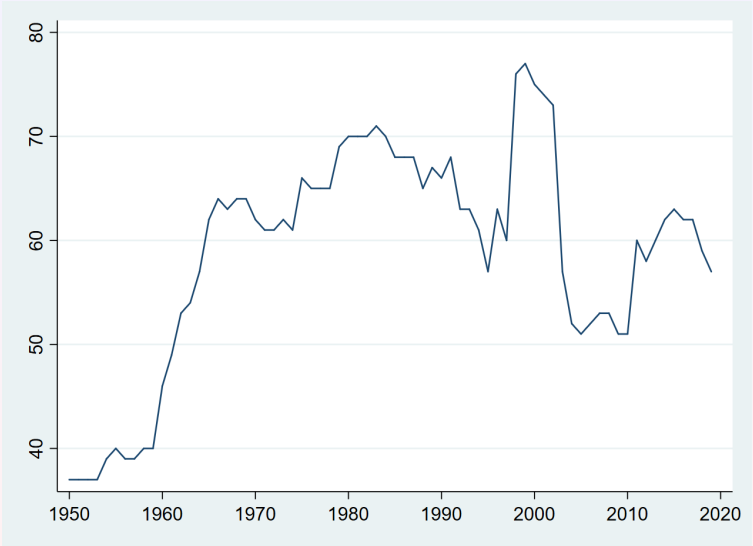
What is a strategic rivalry?

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 decison-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

Rivalries over time



Existing literature

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, Russet, 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), Bosone and Stamato 2024 (UN voting disagreement)
- Only Long (2008) has previously studied how bilateral rivalries impact trade

What we find

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 17%
- We find large, statistically significant effects for:
  - more extensive rivalries that cover multiple dimensions (from -30% to -67%)
  - rivalries that have ideological (-45%), spatial (-31%), or interventionary (-36%) dimensions in particular
  - longstanding rivalries when they hit the 10 year mark (-25%)
  - rivalries during the Cold War era (-75%)
- Rivalries explain about 35% of the estimated effect of conflict.

What we find

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 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

More details on data

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): 195 countries from 1950-2019
- NBER-UN / COMTRADE (industry category trade): 1962 onwards

Other covariates:

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

More details on data

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*

Rivalries vs. conflicts: some statistics

Frequency

- Both wars and rivalries are rare, but rivalries are less rare:
  - 0.05% of observations in our data are associated with active conflicts
  - 0.5% 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 0.03%.
- However, most pairs that have had a rivalry (61%) have never had an active conflict

Baseline specification

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

- y_{ijt} is exports from i to j in year t
- α_{it}, γ_{jt}, and η_{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	0.126***	0.126***	0.124***	0.122***	0.121***	0.123***	0.123***	0.120***	0.120***
	(0.021)	(0.021)	(0.021)	(0.021)	(0.021)	(0.021)	(0.021)	(0.021)	(0.021)
GATT / WTO	-0.084	-0.101*	-0.091	-0.080	-0.084	-0.089	-0.094	-0.088	-0.087
	(0.066)	(0.062)	(0.061)	(0.061)	(0.061)	(0.061)	(0.060)	(0.060)	(0.060)
Current colony	0.386*	0.385*	0.385*	0.374*	0.376*	0.385*	0.385*	0.376*	0.376*
	(0.210)	(0.209)	(0.210)	(0.206)	(0.206)	(0.210)	(0.210)	(0.206)	(0.206)
Active conflict		-0.647***	-0.506***	-0.509***	-0.514***	-0.396***	-0.359***	-0.373***	-0.390***
		(0.112)	(0.116)	(0.116)	(0.115)	(0.101)	(0.094)	(0.093)	(0.097)
Rivalry			-0.187**	-0.194**	-0.190**		0.404**	0.382*	
			(0.090)	(0.090)	(0.090)		(0.205)	(0.204)	
Rivalry extent (0-4)						-0.166***	-0.390***	-0.377***	
						(0.042)	(0.108)	(0.107)	
Defense alliance				0.408***	0.348***			0.347***	0.347***
				(0.060)	(0.059)			(0.059)	(0.059)
Eastern bloc					1.216***			1.200***	1.193***
					(0.177)			(0.178)	(0.178)
Extent=1									-0.004
									(0.111)
Extent=2									-0.348***
									(0.079)
Extent=3									-1.018***
									(0.264)
Extent=4									-0.406
									(0.637)
N	1849208	1849208	1849208	1849208	1849208	1849208	1849208	1849208	1849208

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

Different types of rivalry

Alternate specification - Rivalry extent

Exploiting another feature of the rivalry data, we estimate:

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

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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The 4 possible rivalry dimensions are:

1. Positional rivalries: states competing for influence and/or prestiage
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	37	62.1%	67.6%	29.7%	35.1%
1960	46	63.0%	65.2%	39.1%	37.0%
1970	62	54.8%	64.5%	43.5%	45.2%
1980	70	50.0%	60.0%	42.9%	48.6%
1990	66	50.0%	60.6%	27.3%	51.5%
2000	75	38.7%	45.3%	14.7%	65.3%
2010	51	51.0%	54.9%	19.6%	54.9%

Results for full sample

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GATT / WTO	-0.084	-0.101*	-0.091	-0.080	-0.084	-0.089	-0.094	-0.088	-0.087
	(0.066)	(0.062)	(0.061)	(0.061)	(0.061)	(0.061)	(0.060)	(0.060)	(0.060)
Current colony	0.386*	0.385*	0.385*	0.374*	0.376*	0.385*	0.385*	0.376*	0.376*
	(0.210)	(0.209)	(0.210)	(0.206)	(0.206)	(0.210)	(0.210)	(0.206)	(0.206)
Active conflict		-0.647***	-0.506***	-0.509***	-0.514***	-0.396***	-0.359***	-0.373***	-0.390***
		(0.112)	(0.116)	(0.116)	(0.115)	(0.101)	(0.094)	(0.093)	(0.097)
Rivalry			-0.187**	-0.194**	-0.190**		0.404**	0.382*	
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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	0.126***	0.126***	0.124***	0.122***	0.121***	0.123***	0.123***	0.120***	0.120***
	(0.021)	(0.021)	(0.021)	(0.021)	(0.021)	(0.021)	(0.021)	(0.021)	(0.021)
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Rivalry			-0.187**	-0.194**	-0.190**		0.404**	0.382*	
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									(0.079)
Extent=3									-1.018***
									(0.264)
Extent=4									-0.406
									(0.637)
Rivalry + 1×Extent							0.013	0.005	
Rivalry + 2×Extent							-0.377***	-0.373***	
Rivalry + 3×Extent							-0.767***	-0.750***	
Rivalry + 4×Extent							-1.158***	-1.127***	
N	1849208	1849208	1849208	1849208	1849208	1849208	1849208	1849208	1849208

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	(8) GDP Asym.
FTA	0.121***	0.121***	0.120***	0.121***	0.121***	0.121***	0.121***	0.120***
	(0.021)	(0.021)	(0.021)	(0.021)	(0.021)	(0.021)	(0.021)	(0.022)
GATT / WTO	-0.084	-0.087	-0.085	-0.088	-0.088	-0.085	-0.084	-0.074
	(0.061)	(0.061)	(0.060)	(0.061)	(0.061)	(0.061)	(0.061)	(0.067)
Current colony	0.376*	0.376*	0.376*	0.376*	0.376*	0.376*	0.376*	0.212
	(0.206)	(0.206)	(0.206)	(0.206)	(0.206)	(0.206)	(0.206)	(0.168)
Active conflict	-0.514***	-0.393***	-0.388***	-0.336***	-0.539***	-0.496***	-0.465***	-0.302**
	(0.115)	(0.107)	(0.099)	(0.111)	(0.122)	(0.120)	(0.126)	(0.128)
Rivalry	-0.190**	-0.359***	-0.072	-0.159	-0.141	-0.214**	-0.118	-0.119
	(0.090)	(0.095)	(0.106)	(0.097)	(0.096)	(0.108)	(0.101)	(0.090)
Defensive Alliance	0.348***	0.349***	0.348***	0.349***	0.348***	0.349***	0.348***	0.323***
	(0.059)	(0.059)	(0.059)	(0.059)	(0.059)	(0.059)	(0.059)	(0.062)
Eastern Bloc	1.216***	1.216***	1.216***	1.214***	1.199***	1.216***	1.218***	1.403***
	(0.177)	(0.176)	(0.177)	(0.176)	(0.178)	(0.176)	(0.176)	(0.242)
Positional rivalry		0.190						
		(0.135)						
Spatial rivalry			-0.292**					
			(0.120)					
Interventionary rivalry				-0.282*				
				(0.149)				
Ideological rivalry					-0.460***			
					(0.176)			
Principal rivalry						0.081		
						(0.142)		
Asymmetric rivalry							-0.141	
							(0.141)	
Asymmetry in GDP								0.002
								(0.019)
Rivalry × Asymmetry in GDP								-0.666*
								(0.391)
Combined coefficient	-	-0.169*	-0.364***	-0.441***	-0.601***	-0.133	-0.259**	-0.785**
		(0.098)	(0.088)	(0.115)	(0.146)	(0.117)	(0.126)	(0.388)
N	1849208	1849208	1849208	1849208	1849208	1849208	1849208	1313214

Poisson PML with three-way (exporter-time, importer-time, and exporter-importer) fixed effects. Standard errors clustered by exporter-importer pair. * $p < 0.10$, ** $p < .05$, *** $p < .01$. Asymmetry in GDP is an indicator equal to 1 if absolute difference in log GDPs is larger than the observed median absolute difference in log GDPs.

Results for **different eras**

	(1) All years 1950-2019	(2) Cold War 1950-1989	(3) Early Cold War 1950-1971	(4) Late Cold War 1972-1989	(5) Post Cold War 1990-2019	(6) End Cold War 1985-1995	(7) War on Terror 2001-2019
FTA	0.121***	0.304***	0.336***	0.220***	0.068***	0.255***	0.084***
	(0.021)	(0.045)	(0.057)	(0.037)	(0.022)	(0.039)	(0.021)
GATT / WTO	-0.084	-0.050	-0.163***	-0.098*	0.106*	-0.040	0.111**
	(0.061)	(0.053)	(0.045)	(0.053)	(0.063)	(0.045)	(0.054)
Current colony	0.376*	1.179***	0.589***	0.368	0.096		
	(0.206)	(0.139)	(0.078)	(0.315)	(0.085)		
Active conflict	-0.514***	-0.326*	-0.522***	0.030	-0.558***	-0.162	-0.625***
	(0.115)	(0.187)	(0.173)	(0.229)	(0.128)	(0.132)	(0.139)
Rivalry	-0.190**	-1.388***	-0.809***	-1.056***	-0.040	-0.315***	0.158*
	(0.090)	(0.234)	(0.256)	(0.215)	(0.080)	(0.107)	(0.084)
Defensive alliance	0.348***	0.067	0.360***	-0.034	0.287***	0.270***	0.005
	(0.059)	(0.060)	(0.101)	(0.050)	(0.060)	(0.074)	(0.148)
Eastern bloc	1.216***	1.892***	3.594***	-0.061	0.305	0.683***	
	(0.177)	(0.537)	(0.540)	(0.146)	(0.361)	(0.142)	
Add interaction with rivalry extent							
Rivalry	0.382*	0.342	2.392***	-2.221***	0.321	-0.262	0.727***
	(0.204)	(0.672)	(0.517)	(0.592)	(0.213)	(0.344)	(0.212)
Extent (0-4)	-0.377***	-0.926***	-1.392***	0.777**	-0.256**	-0.025	-0.420***
	(0.107)	(0.306)	(0.245)	(0.304)	(0.116)	(0.175)	(0.118)
N	1849208	704691	250742	367806	993529	249845	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) 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
Main sample										
FTA	0.111***	0.050*	0.041	0.126***	0.035	0.111***	0.045*	0.099*	-0.072	-0.089
	(0.020)	(0.029)	(0.041)	(0.029)	(0.028)	(0.027)	(0.024)	(0.053)	(0.075)	(0.067)
GATT / WTO	-0.227***	-0.225**	0.090	-0.111	-0.328***	-0.330***	-0.433***	-0.158	1.073**	-0.332
	(0.069)	(0.105)	(0.083)	(0.078)	(0.078)	(0.101)	(0.121)	(0.116)	(0.432)	(0.236)
Colony	0.398**	0.393	0.566***	0.136	0.421**	0.539***	0.508**	0.930***	1.247***	0.326**
	(0.164)	(0.274)	(0.161)	(0.116)	(0.168)	(0.123)	(0.228)	(0.159)	(0.394)	(0.155)
Active conflict	-0.450***	-0.776***	-0.283	-0.288***	-0.581***	-0.229*	-0.402***	-0.589	-1.409**	-0.709**
	(0.116)	(0.151)	(0.173)	(0.099)	(0.142)	(0.138)	(0.106)	(0.369)	(0.617)	(0.280)
Rivalry	-0.181**	0.145	-0.158**	-0.175**	-0.137	-0.068	-0.016	-0.255	0.313	-0.572*
	(0.089)	(0.104)	(0.080)	(0.075)	(0.096)	(0.090)	(0.096)	(0.329)	(0.375)	(0.311)
Defense treaty	0.196***	0.183***	0.224***	0.315***	0.251***	0.419***	0.149*	0.067	0.728***	0.204
	(0.064)	(0.067)	(0.065)	(0.057)	(0.066)	(0.064)	(0.078)	(0.227)	(0.222)	(0.184)
Eastern bloc	0.326	1.700***	0.866***	0.185	1.174***	0.184	1.010***	0.448	3.447***	3.462***
	(0.200)	(0.355)	(0.228)	(0.175)	(0.288)	(0.204)	(0.333)	(0.292)	(0.894)	(0.968)
Main sample - with rivalry extent										
Rivalry	0.352*	0.140	0.065	0.363*	0.095	0.396	-0.056	0.964	1.071	2.083***
	(0.195)	(0.226)	(0.208)	(0.196)	(0.241)	(0.265)	(0.239)	(0.685)	(0.714)	(0.339)
Extent (0-4)	-0.355***	0.004	-0.154	-0.344***	-0.154	-0.291*	0.027	-0.859**	-0.726*	-1.573***
	(0.106)	(0.136)	(0.110)	(0.104)	(0.137)	(0.159)	(0.136)	(0.377)	(0.393)	(0.186)

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
Main sample										
FTA	0.111***	0.050*	0.041	0.126***	0.035	0.111***	0.045*	0.099*	-0.072	-0.089
	(0.020)	(0.029)	(0.041)	(0.029)	(0.028)	(0.027)	(0.024)	(0.053)	(0.075)	(0.067)
GATT / WTO	-0.227***	-0.225**	0.090	-0.111	-0.328***	-0.330***	-0.433***	-0.158	1.073**	-0.332
	(0.069)	(0.105)	(0.083)	(0.078)	(0.078)	(0.101)	(0.121)	(0.116)	(0.432)	(0.236)
Colony	0.398**	0.393	0.566***	0.136	0.421**	0.539***	0.508**	0.930***	1.247***	0.326**
	(0.164)	(0.274)	(0.161)	(0.116)	(0.168)	(0.123)	(0.228)	(0.159)	(0.394)	(0.155)
Active conflict	-0.450***	-0.776***	-0.283	-0.288***	-0.581***	-0.229*	-0.402***	-0.589	-1.409**	-0.709**
	(0.116)	(0.151)	(0.173)	(0.099)	(0.142)	(0.138)	(0.106)	(0.369)	(0.617)	(0.280)
Rivalry	-0.181**	0.145	-0.158**	-0.175**	-0.137	-0.068	-0.016	-0.255	0.313	-0.572*
	(0.089)	(0.104)	(0.080)	(0.075)	(0.096)	(0.090)	(0.096)	(0.329)	(0.375)	(0.311)
Defense treaty	0.196***	0.183***	0.224***	0.315***	0.251***	0.419***	0.149*	0.067	0.728***	0.204
	(0.064)	(0.067)	(0.065)	(0.057)	(0.066)	(0.064)	(0.078)	(0.227)	(0.222)	(0.184)
Eastern bloc	0.326	1.700***	0.866***	0.185	1.174***	0.184	1.010***	0.448	3.447***	3.462***
	(0.200)	(0.355)	(0.228)	(0.175)	(0.288)	(0.204)	(0.333)	(0.292)	(0.894)	(0.968)
Main sample - with rivalry extent										
Rivalry	0.352*	0.140	0.065	0.363*	0.095	0.396	-0.056	0.964	1.071	2.083***
	(0.195)	(0.226)	(0.208)	(0.196)	(0.241)	(0.265)	(0.239)	(0.685)	(0.714)	(0.339)
Extent (0-4)	-0.355***	0.004	-0.154	-0.344***	-0.154	-0.291*	0.027	-0.859**	-0.726*	-1.573***
	(0.106)	(0.136)	(0.110)	(0.104)	(0.137)	(0.159)	(0.136)	(0.377)	(0.393)	(0.186)

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
Cold War										
Active conflict	0.089	-0.233	-0.307*	0.223	-0.059	0.146	0.001	0.428**	-0.551**	-0.924**
Rivalry	-0.922***	-1.415***	-1.012***	-0.999***	-0.984***	-0.973***	-1.030**	-0.157	-2.531***	-0.294
Defense treaty	-0.177**	-0.011	-0.116**	-0.100	-0.057	-0.040	0.010	-0.164	0.468	-0.007
Early Cold War										
Active conflict	-0.236	-0.302	-0.031	-0.361*	-0.281**	-0.226	-0.428**	-0.198	-3.770***	-1.055
Rivalry	-0.258**	0.209	-0.309***	-0.240**	-0.162	-0.104	-0.013	0.654	0.313	0.842**
Defense treaty	0.045	0.067	0.198**	0.149	0.210**	0.329***	0.093	-0.163	-0.771*	-0.806**
Late Cold War										
Active conflict	0.069	-0.488**	-0.301*	0.103	-0.141	-0.022	-0.140	0.486**	-0.381	-0.580*
Rivalry	-0.840***	-1.509***	-0.819***	-0.913***	-0.945***	-0.904***	-1.007**	-0.197	-2.576**	-0.354
Defense treaty	-0.176**	0.009	-0.075	-0.083	-0.026	-0.023	-0.002	-0.232	0.469	0.011
Post Cold War										
Active conflict	-0.431***	-0.878***	-0.207	-0.367***	-0.602***	-0.290**	-0.408***	-0.798**	-0.971	-0.820***
Rivalry	-0.040	0.223**	-0.112	-0.052	-0.097	0.077	0.067	-0.002	0.479	-0.478
Defense treaty	0.229***	0.124	0.199**	0.315***	0.191**	0.415***	0.070	0.285*	1.292***	0.445**
End Cold War										
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
War on terror										
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: Rivalry Duration and Active Conflict Timing

	(1)	(2)	(3)	(4)	(5)	(6)
FTA	0.121***	0.121***	0.114***	0.114***	0.121***	0.120***
	(0.021)	(0.021)	(0.021)	(0.021)	(0.021)	(0.021)
GATT / WTO	-0.084	-0.097	-0.079	-0.079	-0.086	-0.079
	(0.061)	(0.059)	(0.061)	(0.061)	(0.061)	(0.061)
Colony	0.376*	0.376*	0.375*	0.375*	0.376*	0.366*
	(0.206)	(0.207)	(0.206)	(0.206)	(0.206)	(0.204)
Active conflict	-0.487***	-0.743***	-0.625***	-0.625***	-0.480***	-0.558***
	(0.139)	(0.191)	(0.123)	(0.123)	(0.117)	(0.126)
Recent conflict (within 10 years)	0.189					
	(0.224)					
Rivalry	-0.195**	-0.192**	-0.042	-0.049	-0.235**	-0.179**
	(0.091)	(0.090)	(0.076)	(0.154)	(0.103)	(0.088)
Defensive alliance	0.346***	0.352***	0.350***	0.350***	0.349***	0.339***
	(0.059)	(0.059)	(0.059)	(0.059)	(0.059)	(0.058)
Eastern bloc	1.217***	1.217***	1.213***	1.213***	1.214***	1.159***
	(0.177)	(0.177)	(0.177)	(0.177)	(0.177)	(0.169)
Future conflict (within 10 years)		-0.317**				
		(0.146)				
Longstanding rivalry (after 10 year mark)			-0.249***	-0.249***		
			(0.056)	(0.056)		
Rivalries that last at least 10 years				0.007		
				(0.170)		
Renewed rivalry					0.180	
					(0.133)	
Trade sanction: complete						-1.267***
						(0.193)
Trade sanction: partial						-0.119***
						(0.021)
N	1849208	1849208	1849208	1849208	1849208	1423585

Poisson PML with three-way (exporter-time, importer-time, and exporter-importer) fixed effects. Sanctions variables from GSDB v. 4 (Yalcin, Felbermayr, Kariem, Kirilakha, Kwon, and Yotov 2025). Standard errors clustered by exporter-importer pair. * $p < 0.10$, ** $p < .05$, *** $p < .01$.

Possible mechanisms

We investigate how much of the estimated rivalry effect can be explained by:

1. Sanctions (Felbermayr, Kirilakha, Syropoulos, Yalcin, and Yotov 2020):
   - formal bans and other restrictions on trade for strategic/geopolitical reasons
   - we also considered non-trade sanctions (in appendix)
2. Differences in UN voting (Bailey, Strezhnev, and Voeten 2017):
   - reflecting changes in geopolitical alignment
   - also a potential counfounder

We find the estimated rivalry effect remains mostly intact after taking into account these factors.

More results: Sanctions

	(1)	(2)	(3)	(4)	(5)	(6)
FTA	0.121***	0.121***	0.114***	0.114***	0.121***	0.120***
	(0.021)	(0.021)	(0.021)	(0.021)	(0.021)	(0.021)
GATT / WTO	-0.084	-0.097	-0.079	-0.079	-0.086	-0.079
	(0.061)	(0.059)	(0.061)	(0.061)	(0.061)	(0.061)
Colony	0.376*	0.376*	0.375*	0.375*	0.376*	0.366*
	(0.206)	(0.207)	(0.206)	(0.206)	(0.206)	(0.204)
Active conflict	-0.487***	-0.743***	-0.625***	-0.625***	-0.480***	-0.558***
	(0.139)	(0.191)	(0.123)	(0.123)	(0.117)	(0.126)
Recent conflict (within 10 years)	0.189					
	(0.224)					
Rivalry	-0.195**	-0.192**	-0.042	-0.049	-0.235**	-0.179**
	(0.091)	(0.090)	(0.076)	(0.154)	(0.103)	(0.088)
Defensive alliance	0.346***	0.352***	0.350***	0.350***	0.349***	0.339***
	(0.059)	(0.059)	(0.059)	(0.059)	(0.059)	(0.058)
Eastern bloc	1.217***	1.217***	1.213***	1.213***	1.214***	1.159***
	(0.177)	(0.177)	(0.177)	(0.177)	(0.177)	(0.169)
Future conflict (within 10 years)		-0.317**				
		(0.146)				
Longstanding rivalry (after 10 year mark)			-0.249***	-0.249***		
			(0.056)	(0.056)		
Rivalries that last at least 10 years				0.007		
				(0.170)		
Renewed rivalry					0.180	
					(0.133)	
Trade sanction: complete						-1.267***
						(0.193)
Trade sanction: partial						-0.119***
						(0.021)
N	1849208	1849208	1849208	1849208	1849208	1849208

Poisson PML with three-way (exporter-time, importer-time, and exporter-importer) fixed effects. Sanctions variables from GSDB v. 4 (Yalcin, Felbermayr, Kariem, Kirilakha, Kwon, and Yotov 2025). Standard errors clustered by exporter-importer pair. * $p < 0.10$, ** $p < .05$, *** $p < .01$.

More results: UN voting

	(1)	(2)	(3)	(4)	(5)	(6)
FTA	0.148***	0.147***	0.146***	0.144***	0.146***	0.145***
	(0.021)	(0.020)	(0.020)	(0.020)	(0.020)	(0.020)
GATT / WTO	-0.096	-0.098	-0.099	-0.101	-0.098	-0.100
	(0.072)	(0.072)	(0.073)	(0.072)	(0.073)	(0.072)
Colony	1.014***	1.013***	0.992***	0.992***	0.993***	0.993***
	(0.162)	(0.162)	(0.169)	(0.169)	(0.170)	(0.170)
Active conflict	-0.540***	-0.425***	-0.536***	-0.419***	-0.532***	-0.419***
	(0.115)	(0.098)	(0.114)	(0.097)	(0.113)	(0.097)
Rivalry	-0.149*	0.286	-0.150*	0.289	-0.148*	0.283
	(0.086)	(0.203)	(0.086)	(0.204)	(0.086)	(0.203)
Rivalry extent (0-4)		-0.291***		-0.294***		-0.288***
		(0.111)		(0.111)		(0.110)
Defensive alliance	0.311***	0.311***	0.300***	0.299***	0.304***	0.304***
	(0.064)	(0.064)	(0.064)	(0.064)	(0.064)	(0.064)
Eastern bloc	1.230***	1.220***	1.133***	1.119***	1.188***	1.179***
	(0.179)	(0.180)	(0.183)	(0.184)	(0.179)	(0.180)
UN Voting: ideal point distance			-0.023*	-0.024*		
			(0.013)	(0.013)		
UN Voting: high IP distance					-0.034***	-0.034***
					(0.012)	(0.012)
N	1435421	1435421	1435421	1435421	1435421	1435421

Poisson PML with three-way (exporter-time, importer-time, and exporter-importer) fixed effects. UN voting measures from Bailey, Strezhnev, and Voeten (2017). Our sample for these results includes UN members only. Standard errors clustered by exporter-importer pair. * $p < 0.10$, ** $p < .05$, *** $p < .01$.

More results: UN voting

	(1)	(2)	(3)	(4)	(5)	(6)
FTA	0.148***	0.147***	0.146***	0.144***	0.146***	0.145***
	(0.021)	(0.020)	(0.020)	(0.020)	(0.020)	(0.020)
GATT / WTO	-0.096	-0.098	-0.099	-0.101	-0.098	-0.100
	(0.072)	(0.072)	(0.073)	(0.072)	(0.073)	(0.072)
Colony	1.014***	1.013***	0.992***	0.992***	0.993***	0.993***
	(0.162)	(0.162)	(0.169)	(0.169)	(0.170)	(0.170)
Active conflict	-0.540***	-0.425***	-0.536***	-0.419***	-0.532***	-0.419***
	(0.115)	(0.098)	(0.114)	(0.097)	(0.113)	(0.097)
Rivalry	-0.149*	0.286	-0.150*	0.289	-0.148*	0.283
	(0.086)	(0.203)	(0.086)	(0.204)	(0.086)	(0.203)
Rivalry extent (0-4)		-0.291***		-0.294***		-0.288***
		(0.111)		(0.111)		(0.110)
Defensive alliance	0.311***	0.311***	0.300***	0.299***	0.304***	0.304***
	(0.064)	(0.064)	(0.064)	(0.064)	(0.064)	(0.064)
Eastern bloc	1.230***	1.220***	1.133***	1.119***	1.188***	1.179***
	(0.179)	(0.180)	(0.183)	(0.184)	(0.179)	(0.180)
UN Voting: ideal point distance			-0.023*	-0.024*		
			(0.013)	(0.013)		
UN Voting: high IP distance					-0.034***	-0.034***
					(0.012)	(0.012)
N	1435421	1435421	1435421	1435421	1435421	1435421

Poisson PML with three-way (exporter-time, importer-time, and exporter-importer) fixed effects. UN voting measures from Bailey, Strezhnev, and Voeten (2017). Our sample for these results includes UN members only. Standard errors clustered by exporter-importer pair. * $p < 0.10$, ** $p < .05$, *** $p < .01$.

More results

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	Bias corrected		Drop active conflicts		Clean controls		Lead variables	
Contemporaneous variables								
FTA	0.124***	0.122***	0.121***	0.120***	0.116***	0.116***	0.091***	0.091***
	(0.023)	(0.023)	(0.021)	(0.021)	(0.025)	(0.025)	(0.019)	(0.019)
GATT / WTO	-0.066	-0.069	-0.092	-0.094	-0.101	-0.102	-0.113**	-0.116**
	(0.067)	(0.066)	(0.061)	(0.061)	(0.069)	(0.069)	(0.048)	(0.048)
Colony	0.387	0.388	0.377*	0.377*	0.365	0.365	0.495***	0.495***
	(0.273)	(0.272)	(0.206)	(0.206)	(0.387)	(0.387)	(0.159)	(0.159)
Active conflict	-0.509***	-0.365***			-0.466**	-0.326**	-0.355***	-0.189**
	(0.135)	(0.110)			(0.184)	(0.150)	(0.101)	(0.082)
Rivalry	-0.189*	0.386*	-0.171*	0.333	-0.203*	0.383	-0.230***	0.328
	(0.099)	(0.229)	(0.090)	(0.208)	(0.108)	(0.279)	(0.088)	(0.201)
Extent		-0.377***		-0.336***		-0.383**		-0.376***
		(0.126)		(0.110)		(0.156)		(0.111)
Defense alliance	0.355***	0.355***	0.348***	0.346***	0.371***	0.372***	0.378***	0.373***
	(0.063)	(0.063)	(0.060)	(0.060)	(0.065)	(0.066)	(0.059)	(0.059)
Eastern bloc	1.228***	1.213***	1.218***	1.205***	1.128***	1.127***	1.349***	1.345***
	(0.189)	(0.191)	(0.177)	(0.179)	(0.177)	(0.177)	(0.208)	(0.206)
Lead (2 period ahead) variables								
FTA							0.039*	0.036*
							(0.021)	(0.020)
GATT / WTO							0.048	0.046
							(0.056)	(0.056)
Colony							-0.139	-0.138
							(0.185)	(0.184)
Active conflict							-0.173**	-0.193***
							(0.075)	(0.066)
Rivalry							0.080***	0.167***
							(0.026)	(0.059)
Extent								-0.054
								(0.038)
Defense alliance							-0.053***	-0.050**
							(0.019)	(0.020)
Eastern bloc							0.224***	0.222***
							(0.061)	(0.061)
N	1849208	1849208	1845052	1845052	1849208	1849208	1806244	1806244

Conclusion

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 about 35% of the effect of an active conflict
- Other notable findings:
  - Defense treaties promote trade
  - Larger negative effects for parts and accessories, consumer goods, energy-related trade, semi-conductors