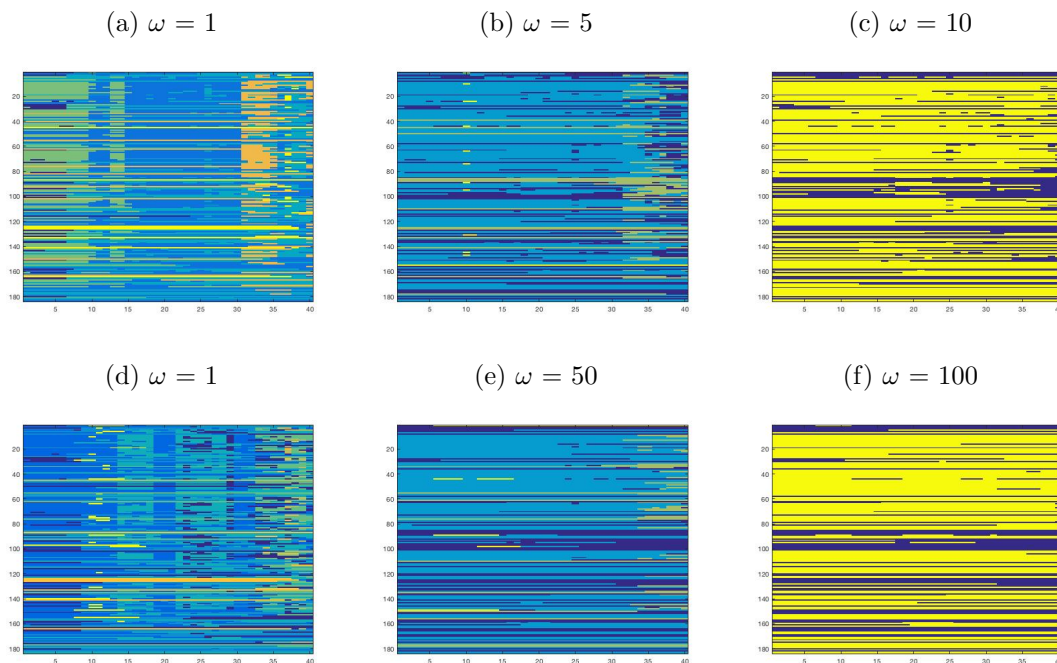


Hierarchy and the Provision of Order in International Politics: Online Appendix

November 26, 2018

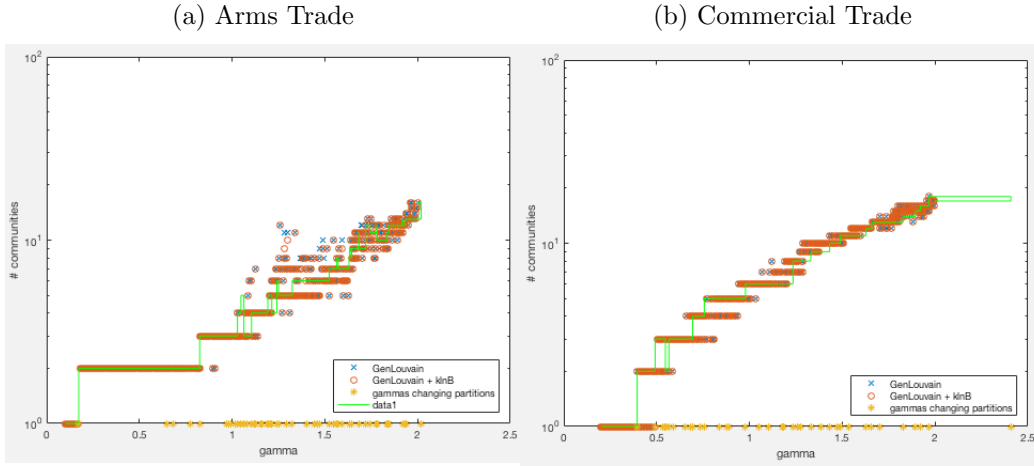
Appendix

Figure A.1: Arms Trade Communities under Different Resolution Parameters, 1960-1999



In each of the six plots, the x-axis displays years and the y-axis displays a vector of countries. Each color represents a distinct community. Thus, changes in the vector of colors across time displays temporal variation in community assignment. To examine the partitions, we first identified, as described in the text, two γ values that generated the most stable partitions over time, and then examined the partitions across different temporal coupling parameters ω . The first row shows partitions under $\gamma = 0.5$ and the second row shows partitions under $\gamma = 0.7$. Increasing ω implies greater temporal dependency across

Figure A.2: Resolution Parameter Searches for Robust Gamma Values



slices, which decreases the number of communities detected. Since $\gamma = 0.7$ yields a greater of communities, it requires higher ω values to scale down the community partitions. That is why we cycle through $\omega = \{1, 5, 10\}$ for $\gamma = 0.5$ but $\omega = \{1, 50, 100\}$ for $\gamma = 0.7$.

Table A.1: Interstate arms trade community descriptive statistics.

	$\omega = 1, \gamma = 0.5$	$\omega = 1, \gamma = 0.7$	$\omega = 10, \gamma = 0.5$	$\omega = 100, \gamma = 0.7$	$\omega = 5, \gamma = 0.5$	$\omega = 50, \gamma = 0.7$
Avg. Number of Countries in Comm.	21.83	14.44	48.50	84.47	83.24	54.70
Avg. Hierarchy Score	52.67	37.87	112.47	192.51	189.99	130.11
Min. Number of Countries in Comm.	2	2	2	55	2	3
Min. Hierarchy Score	0	0	0	103.78	16.552	0.000
Max. Number of Countries in Comm.	114	90	116	114	120	108
Max. Hierarchy Score	342.65	343.44	343.85	344.43	344.38	339.79
Avg. Number of Comms	7.62	11.52	3.45	2	2.025	3.075
Min Number of Comms	5	9	3	2	2	3
Max Number of Comms	11	17	5	2	3	4

Table A.2: Interstate arms trade: community models.

	Spatial Temp. (Low)			Spatial Temp. (High)		
	(1)	(2)	(3)	(4)	(5)	(6)
Intercept	-6.141*** (0.388)	-6.241*** (0.394)	-6.133*** (0.389)	-6.278*** (0.385)	-6.196*** (0.394)	-6.328*** (0.383)
Same Comm	-0.343*** (0.098)	-0.276** (0.109)	-0.380*** (0.100)	-0.274*** (0.103)	-0.332*** (0.101)	-0.143 (0.109)
Arms Transfer (lower)	-0.018 (0.017)	-0.020 (0.017)	-0.019 (0.017)	-0.018 (0.017)	-0.019 (0.017)	-0.019 (0.018)
GDP (high)	0.143*** (0.043)	0.147*** (0.043)	0.147*** (0.043)	0.144*** (0.043)	0.142*** (0.043)	0.140*** (0.044)
GDP (low)	0.107*** (0.041)	0.108*** (0.041)	0.104** (0.041)	0.111*** (0.041)	0.110*** (0.041)	0.112*** (0.041)
Democracy (high)	0.025* (0.014)	0.025* (0.014)	0.025* (0.014)	0.025* (0.014)	0.025* (0.014)	0.026* (0.014)
Democracy (low)	-0.136*** (0.023)	-0.135*** (0.023)	-0.134*** (0.023)	-0.139*** (0.023)	-0.137*** (0.023)	-0.141*** (0.023)
IGO membership	0.005 (0.005)	0.005 (0.005)	0.005 (0.005)	0.006 (0.005)	0.005 (0.005)	0.005 (0.005)
Contiguity	2.611*** (0.254)	2.615*** (0.258)	2.596*** (0.255)	2.632*** (0.254)	2.620*** (0.256)	2.651*** (0.254)
Dist.(log)	-0.183*** (0.025)	-0.181*** (0.026)	-0.184*** (0.026)	-0.178*** (0.025)	-0.182*** (0.026)	-0.176*** (0.025)
Major power	0.796*** (0.177)	0.774*** (0.177)	0.787*** (0.177)	0.768*** (0.177)	0.783*** (0.177)	0.773*** (0.178)
Allies	0.059 (0.150)	0.052 (0.151)	0.074 (0.150)	0.052 (0.150)	0.058 (0.151)	0.032 (0.148)
CapRatio (log)	-0.128*** (0.042)	-0.124*** (0.042)	-0.128*** (0.042)	-0.127*** (0.042)	-0.125*** (0.042)	-0.126*** (0.043)
Peace Years	-0.337*** (0.029)	-0.336*** (0.029)	-0.337*** (0.029)	-0.339*** (0.029)	-0.336*** (0.029)	-0.337*** (0.029)
Observations:	390914	390914	390914	390914	390914	390914

Notes:

***p < .01; **p < .05; *p < .1

Table A.3: The Effect of Formal Defense Communities, 1980-1999

	Low resolution	Medium resolution	High resolution
(Intercept)	-6.71*** (0.40)	-6.72*** (0.40)	-6.71*** (0.40)
Same Comm (Defense)	-0.56*** (0.22)	-0.34** (0.16)	-0.28* (0.16)
Defense dyadic	-0.09 (0.25)	-0.10 (0.25)	-0.11 (0.25)
Trade dependence (low)	-12.49** (6.16)	-13.07** (6.08)	-12.87** (6.19)
GDP (high)	0.09** (0.05)	0.09* (0.05)	0.09* (0.05)
GDP (low)	0.17*** (0.04)	0.16*** (0.04)	0.16*** (0.04)
Democracy (high)	0.04*** (0.02)	0.05*** (0.02)	0.05*** (0.02)
Democracy (low)	-0.14*** (0.02)	-0.14*** (0.02)	-0.14*** (0.02)
IGO membership	0.00 (0.00)	0.01 (0.00)	0.01 (0.00)
Contiguity	2.85*** (0.20)	2.87*** (0.20)	2.85*** (0.20)
Dist. (log)	-0.17*** (0.02)	-0.16*** (0.02)	-0.17*** (0.02)
Major power	0.67*** (0.17)	0.71*** (0.17)	0.70*** (0.17)
Allies	0.25* (0.14)	0.24* (0.14)	0.23 (0.14)
CapRatio (log)	-0.07 (0.05)	-0.07 (0.05)	-0.07 (0.05)
Peace Years	-0.36*** (0.04)	-0.36*** (0.04)	-0.36*** (0.04)
AIC	4050.93	4053.93	4055.20
BIC	4239.14	4242.14	4243.41
Log Likelihood	-2007.46	-2008.96	-2009.60
Deviance	4014.93	4017.93	4019.20
Num. obs.	256803	256803	256803

*** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

Table A.4: Interstate arms trade: models separating community membership into subordinate-subordinate and subordinate-dominant indicators.

	Spatial Temp. (Low)			Spatial Temp. (High)		
	(1)	(2)	(3)	(4)	(5)	(6)
Intercept	-6.138*** (0.387)	-6.249*** (0.394)	-6.131*** (0.389)	-6.278*** (0.385)	-6.192*** (0.394)	-6.335*** (0.383)
Comm - Flat	-0.350*** (0.100)	-0.302*** (0.111)	-0.395*** (0.101)	-0.269** (0.107)	-0.326*** (0.101)	-0.111 (0.112)
Comm - Imbalance	-0.265 (0.312)	0.016 (0.336)	-0.202 (0.333)	-0.320 (0.315)	-0.381 (0.294)	-0.374 (0.307)
Arms Transfer (lower)	-0.020 (0.019)	-0.024 (0.020)	-0.022 (0.019)	-0.018 (0.018)	-0.018 (0.018)	-0.016 (0.017)
GDP (high)	0.142*** (0.042)	0.142*** (0.042)	0.145*** (0.042)	0.144*** (0.043)	0.143*** (0.043)	0.142*** (0.043)
GDP (low)	0.107*** (0.041)	0.109*** (0.041)	0.104** (0.041)	0.111*** (0.041)	0.110*** (0.041)	0.112*** (0.041)
Democracy (high)	0.025* (0.014)	0.025* (0.014)	0.025* (0.014)	0.025* (0.014)	0.025* (0.014)	0.026* (0.014)
Democracy (low)	-0.136*** (0.023)	-0.136*** (0.023)	-0.134*** (0.023)	-0.138*** (0.023)	-0.136*** (0.023)	-0.141*** (0.023)
IGO membership	0.005 (0.005)	0.006 (0.005)	0.006 (0.005)	0.005 (0.005)	0.005 (0.005)	0.005 (0.005)
Contiguity	2.616*** (0.254)	2.635*** (0.255)	2.609*** (0.255)	2.630*** (0.255)	2.616*** (0.255)	2.637*** (0.255)
Dist.(log)	-0.182*** (0.026)	-0.177*** (0.026)	-0.181*** (0.026)	-0.178*** (0.026)	-0.182*** (0.026)	-0.178*** (0.026)
Major power	0.782*** (0.183)	0.714*** (0.184)	0.754*** (0.183)	0.774*** (0.178)	0.793*** (0.182)	0.804*** (0.179)
Allies	0.054 (0.147)	0.027 (0.148)	0.059 (0.147)	0.054 (0.146)	0.061 (0.149)	0.040 (0.146)
CapRatio (log)	-0.128*** (0.042)	-0.122*** (0.043)	-0.127*** (0.042)	-0.127*** (0.042)	-0.125*** (0.042)	-0.125*** (0.043)
Peace Years	-0.337*** (0.029)	-0.335*** (0.029)	-0.337*** (0.029)	-0.338*** (0.029)	-0.337*** (0.029)	-0.338*** (0.029)
Observations:	390661	390441	390431	390772	390472	390463

Notes: ***p < .01; **p < .05; *p < .1

Table A.5: Interstate arms trade: models separating community membership into subordinate-subordinate and subordinate-dominant indicators.

	Spatial Temp. (Low)			Spatial Temp. (High)		
	(1)	(2)	(3)	(4)	(5)	(6)
Intercept	-6.579*** (0.423)	-6.774*** (0.439)	-6.752*** (0.448)	-6.491*** (0.400)	-6.507*** (0.419)	-6.288*** (0.384)
Comm - Flat	0.265 (0.250)	0.362 (0.269)	0.503* (0.280)	0.299 (0.222)	-0.120 (0.270)	-0.198 (0.217)
Hierarchy (lower)	0.004*** (0.001)	0.004*** (0.001)	0.004*** (0.001)	0.004*** (0.001)	0.003*** (0.001)	0.003*** (0.001)
Comm - Imbalance	0.057 (0.598)	0.293 (0.714)	0.347 (0.737)	-0.347 (0.497)	-0.658 (0.609)	-1.048** (0.433)
Arms Transfer (lower)	-0.021 (0.019)	-0.026 (0.020)	-0.022 (0.019)	-0.019 (0.018)	-0.023 (0.019)	-0.023 (0.019)
GDP (high)	0.154*** (0.044)	0.152*** (0.043)	0.159*** (0.044)	0.159*** (0.044)	0.153*** (0.043)	0.150*** (0.043)
GDP (low)	0.082** (0.042)	0.092** (0.041)	0.087** (0.041)	0.078* (0.042)	0.090** (0.041)	0.079* (0.041)
Democracy (high)	0.024* (0.014)	0.025* (0.014)	0.025* (0.014)	0.025* (0.014)	0.024* (0.014)	0.021 (0.014)
Democracy (low)	-0.126*** (0.023)	-0.130*** (0.023)	-0.125*** (0.022)	-0.125*** (0.023)	-0.127*** (0.023)	-0.130*** (0.023)
IGO membership	0.006 (0.005)	0.007 (0.005)	0.007 (0.005)	0.006 (0.005)	0.006 (0.005)	0.006 (0.005)
Contiguity	2.573*** (0.256)	2.618*** (0.258)	2.572*** (0.257)	2.548*** (0.258)	2.566*** (0.258)	2.564*** (0.257)
Dist.(log)	-0.183*** (0.026)	-0.176*** (0.026)	-0.180*** (0.026)	-0.185*** (0.026)	-0.186*** (0.026)	-0.184*** (0.026)
Major power	0.770*** (0.182)	0.706*** (0.184)	0.735*** (0.183)	0.791*** (0.176)	0.799*** (0.182)	0.839*** (0.177)
Allies	0.039 (0.146)	0.014 (0.148)	0.051 (0.146)	0.040 (0.145)	0.041 (0.148)	0.0003 (0.145)
CapRatio (log)	-0.130*** (0.043)	-0.124*** (0.043)	-0.128*** (0.043)	-0.133*** (0.043)	-0.126*** (0.043)	-0.132*** (0.042)
Peace Years	-0.334*** (0.029)	-0.331*** (0.029)	-0.334*** (0.029)	-0.333*** (0.030)	-0.331*** (0.030)	-0.335*** (0.029)
Comm - Flat X Hierarchy	-0.004*** (0.001)	-0.004*** (0.001)	-0.006*** (0.001)	-0.005*** (0.001)	-0.002 (0.001)	-0.001 (0.001)
Comm - Imbalance X Hierarchy	-0.003 (0.003)	-0.002 (0.004)	-0.004 (0.003)	-0.001 (0.002)	0.001 (0.003)	0.003 (0.003)
Observations:	390661	390441	390431	390772	390472	390463

Notes:

***p < .01; **p < .05; *p < .1

Table A.6: Interstate arms trade: hierarchy models excluding USA community.

	Spatial Temp. (Low)			Spatial Temp. (High)		
	(1)	(2)	(3)	(4)	(5)	(6)
Intercept	-6.541*** (0.419)	-6.710*** (0.434)	-6.705*** (0.444)	-6.435*** (0.397)	-6.472*** (0.416)	-6.243*** (0.381)
Same Comm	0.190 (0.247)	0.264 (0.269)	0.435 (0.281)	0.164 (0.212)	-0.267 (0.265)	-0.415** (0.206)
Hierarchy(lower)	0.004*** (0.001)	0.003*** (0.001)	0.004*** (0.001)	0.004*** (0.001)	0.003*** (0.001)	0.003*** (0.001)
Arms Transfer (lower)	-0.028 (0.046)	-0.028 (0.045)	-0.028 (0.045)	-0.028 (0.045)	-0.031 (0.050)	-0.029 (0.045)
GDP (high)	0.137*** (0.044)	0.125*** (0.043)	0.139*** (0.044)	0.139*** (0.044)	0.132*** (0.043)	0.131*** (0.043)
GDP (low)	0.103*** (0.040)	0.123*** (0.040)	0.112*** (0.040)	0.097** (0.041)	0.115*** (0.039)	0.098** (0.039)
Democracy (high)	0.022 (0.014)	0.023 (0.014)	0.022 (0.014)	0.023* (0.014)	0.022 (0.014)	0.021 (0.014)
Democracy (low)	-0.122*** (0.023)	-0.119*** (0.023)	-0.120*** (0.023)	-0.121*** (0.023)	-0.120*** (0.023)	-0.129*** (0.023)
IGO membership	0.006 (0.005)	0.005 (0.005)	0.006 (0.005)	0.006 (0.005)	0.005 (0.005)	0.006 (0.005)
Contiguity	2.640*** (0.259)	2.707*** (0.262)	2.634*** (0.261)	2.620*** (0.260)	2.649*** (0.262)	2.637*** (0.259)
Dist.(log)	-0.185*** (0.025)	-0.181*** (0.026)	-0.184*** (0.025)	-0.187*** (0.026)	-0.187*** (0.026)	-0.185*** (0.025)
Major power	0.741*** (0.178)	0.687*** (0.179)	0.710*** (0.178)	0.738*** (0.178)	0.740*** (0.179)	0.781*** (0.179)
Allies	-0.026 (0.143)	-0.029 (0.144)	-0.006 (0.143)	-0.028 (0.142)	-0.021 (0.145)	-0.056 (0.142)
CapRatio (log)	-0.136*** (0.043)	-0.128*** (0.043)	-0.134*** (0.043)	-0.140*** (0.043)	-0.131*** (0.043)	-0.138*** (0.042)
Peace Years	-0.337*** (0.030)	-0.328*** (0.030)	-0.336*** (0.030)	-0.338*** (0.030)	-0.331*** (0.030)	-0.337*** (0.030)
Same Comm X Hierarchy	-0.004*** (0.001)	-0.004*** (0.001)	-0.005*** (0.001)	-0.004*** (0.001)	-0.001 (0.001)	-0.0003 (0.001)
Observations:	387834	387384	387646	388590	388015	387404

Notes: ***p < .01; **p < .05; *p < .1

Table A.7: Interstate commercial trade: community models.

	<i>Dependent variable:</i>		
	Low (1)	Medium (2)	High (3)
Intercept	-6.403*** (0.381)	-6.498*** (0.387)	-6.517*** (0.392)
Same Comm	0.211 (0.143)	0.300** (0.133)	0.252* (0.142)
Trade Dependency (lower)	-14.498 (9.407)	-13.786 (9.347)	-13.376 (9.104)
GDP (high)	0.117*** (0.044)	0.122*** (0.044)	0.123*** (0.044)
GDP (low)	0.131*** (0.041)	0.148*** (0.043)	0.148*** (0.043)
Democracy (high)	0.028** (0.014)	0.021 (0.014)	0.019 (0.014)
Democracy (low)	-0.138*** (0.023)	-0.140*** (0.023)	-0.136*** (0.023)
IGO membership	0.006 (0.005)	0.005 (0.005)	0.005 (0.005)
Contiguity	2.640*** (0.249)	2.505*** (0.260)	2.547*** (0.256)
Dist.(log)	-0.170*** (0.025)	-0.180*** (0.025)	-0.177*** (0.025)
Major power	0.838*** (0.181)	0.820*** (0.184)	0.822*** (0.181)
Allies	0.009 (0.150)	0.037 (0.150)	0.042 (0.150)
CapRatio (log)	-0.124*** (0.043)	-0.120*** (0.044)	-0.119*** (0.043)
Peace Years	-0.336*** (0.029)	-0.334*** (0.029)	-0.336*** (0.029)
Observations:	384903	378728	381015

Note:

*p<0.1; **p<0.05; ***p<0.01

Table A.8: Interstate commercial trade: hierarchy models.

	<i>Dependent variable:</i>		
	Low	Medium	High
	(1)	(2)	(3)
Intercept	-6.575*** (0.406)	-6.347*** (0.431)	-6.865*** (0.451)
Same Comm	-0.113 (0.238)	-0.052 (0.278)	0.397 (0.286)
Hierarchy(lower)	0.343** (0.165)	-0.009 (0.209)	0.480*** (0.181)
Dependency(lower)	-15.001 (9.820)	-13.118 (9.158)	-12.669 (8.742)
GDP (high)	0.108** (0.043)	0.116*** (0.044)	0.102** (0.044)
GDP (low)	0.149*** (0.040)	0.147*** (0.043)	0.160*** (0.043)
Democracy (high)	0.027* (0.014)	0.020 (0.014)	0.023 (0.014)
Democracy (low)	-0.140*** (0.023)	-0.138*** (0.023)	-0.134*** (0.023)
IGO membership	0.002 (0.005)	0.003 (0.005)	0.002 (0.005)
Contiguity	2.655*** (0.239)	2.510*** (0.259)	2.619*** (0.256)
Dist.(log)	-0.178*** (0.025)	-0.181*** (0.026)	-0.176*** (0.025)
Major power	0.914*** (0.186)	0.872*** (0.189)	0.928*** (0.190)
Allies	-0.040 (0.152)	-0.013 (0.150)	-0.001 (0.147)
CapRatio (log)	-0.131*** (0.042)	-0.127*** (0.044)	-0.125*** (0.043)
Peace Years	-0.330*** (0.030)	-0.332*** (0.029)	-0.333*** (0.029)
Same Comm X Hierarchy	0.148 (0.196)	0.270 (0.240)	-0.237 (0.211)
Observations:	381015	378728	384903

Note:

*p<0.1; **p<0.05; ***p<0.01

Table A.9: Interstate arms trade: hierarchy models (using closeness centrality and controlling for DCA).

	Spatial Temp. (Low)			Spatial Temp. (High)		
	(1)	(2)	(3)	(4)	(5)	(6)
Intercept	-6.883*** (0.422)	-7.083*** (0.440)	-7.233*** (0.448)	-6.886*** (0.409)	-6.770*** (0.419)	-6.641*** (0.407)
Same Comm	0.227 (0.288)	0.481* (0.288)	0.743** (0.328)	0.238 (0.259)	-0.256 (0.227)	-0.842*** (0.286)
Hierarchy(lower)	0.004*** (0.001)	0.002 (0.001)	0.005*** (0.002)	0.003*** (0.001)	0.002* (0.001)	0.002 (0.001)
Arms Transfer (lower)	-0.011 (0.020)	-0.012 (0.020)	-0.010 (0.020)	-0.012 (0.021)	-0.015 (0.022)	-0.014 (0.021)
GDP (high)	0.113** (0.046)	0.119** (0.047)	0.130*** (0.046)	0.118** (0.046)	0.110** (0.046)	0.105** (0.046)
GDP (low)	0.132*** (0.041)	0.137*** (0.041)	0.131*** (0.041)	0.133*** (0.042)	0.138*** (0.041)	0.136*** (0.042)
Democracy (high)	0.039** (0.016)	0.042*** (0.016)	0.039** (0.016)	0.040** (0.016)	0.040** (0.016)	0.040** (0.016)
DCA	-0.089 (0.241)	-0.173 (0.245)	-0.161 (0.243)	-0.082 (0.240)	-0.069 (0.241)	-0.134 (0.242)
Democracy (low)	-0.135*** (0.020)	-0.143*** (0.020)	-0.127*** (0.021)	-0.138*** (0.020)	-0.141*** (0.020)	-0.143*** (0.020)
IGO membership	0.006 (0.005)	0.007 (0.005)	0.007 (0.005)	0.006 (0.005)	0.005 (0.005)	0.006 (0.005)
Contiguity	2.749*** (0.200)	2.807*** (0.199)	2.719*** (0.200)	2.751*** (0.200)	2.775*** (0.200)	2.786*** (0.200)
Dist.(log)	-0.167*** (0.023)	-0.154*** (0.023)	-0.164*** (0.023)	-0.165*** (0.023)	-0.167*** (0.023)	-0.165*** (0.023)
Major power	0.621*** (0.166)	0.574*** (0.167)	0.562*** (0.166)	0.594*** (0.166)	0.646*** (0.167)	0.670*** (0.166)
Allies	0.242* (0.141)	0.236* (0.141)	0.280** (0.142)	0.241* (0.141)	0.207 (0.141)	0.200 (0.141)
CapRatio (log)	-0.058 (0.045)	-0.055 (0.045)	-0.056 (0.046)	-0.061 (0.045)	-0.058 (0.045)	-0.062 (0.045)
Peace Years	-0.356*** (0.037)	-0.356*** (0.037)	-0.354*** (0.037)	-0.357*** (0.037)	-0.353*** (0.037)	-0.357*** (0.037)
Same Comm X Hierarchy	-0.005** (0.002)	-0.004** (0.002)	-0.008*** (0.002)	-0.004*** (0.002)	-0.0002 (0.002)	0.003 (0.002)
<i>Observations</i>	256,803	256,803	256,803	256,803	256,803	256,803

Notes:

***p < .01; **p < .05; *p < .1

Table A.10: Interstate arms trade: hierarchy models (using degree centrality).

	Spatial Temp. (Low)			Spatial Temp. (High)		
	(1)	(2)	(3)	(4)	(5)	(6)
Intercept	-6.404** (0.402)	-6.677** (0.399)	-6.517** (0.400)	-6.554** (0.396)	-6.582** (0.396)	-6.634** (0.397)
Same Comm	-0.439** (0.107)	-0.178 (0.108)	-0.487** (0.106)	-0.391** (0.126)	-0.268* (0.105)	-0.572** (0.167)
Hierarchy(lower)	0.239** (0.068)	0.094 (0.065)	0.198** (0.065)	0.220** (0.066)	0.177** (0.068)	0.095 (0.069)
Arms Transfer (lower)	-0.013 (0.021)	-0.014 (0.021)	-0.013 (0.021)	-0.013 (0.021)	-0.015 (0.022)	-0.014 (0.021)
GDP (high)	0.130** (0.044)	0.127** (0.045)	0.141** (0.045)	0.133** (0.044)	0.130** (0.045)	0.123** (0.044)
GDP (low)	0.131** (0.040)	0.142** (0.040)	0.134** (0.040)	0.136** (0.040)	0.136** (0.040)	0.138** (0.040)
Democracy (high)	0.035* (0.015)	0.039** (0.015)	0.036* (0.015)	0.036* (0.015)	0.037* (0.015)	0.037* (0.015)
DCA	-0.123 (0.237)	-0.153 (0.241)	-0.163 (0.239)	-0.133 (0.237)	-0.135 (0.237)	-0.188 (0.237)
Democracy (low)	-0.144** (0.020)	-0.155** (0.020)	-0.143** (0.020)	-0.149** (0.020)	-0.149** (0.020)	-0.153** (0.020)
IGO membership	0.008 (0.004)	0.007 (0.004)	0.008 (0.004)	0.008 (0.004)	0.008 (0.004)	0.009* (0.004)
Contiguity	2.700** (0.193)	2.777** (0.191)	2.691** (0.193)	2.709** (0.193)	2.733** (0.192)	2.759** (0.192)
Dist.(log)	-0.166** (0.022)	-0.156** (0.022)	-0.164** (0.022)	-0.163** (0.022)	-0.162** (0.022)	-0.160** (0.022)
Major power	0.577** (0.160)	0.560** (0.160)	0.540** (0.160)	0.547** (0.159)	0.576** (0.160)	0.604** (0.160)
Allies	0.293* (0.134)	0.287* (0.134)	0.332* (0.135)	0.294* (0.134)	0.270* (0.135)	0.255 (0.134)
CapRatio (log)	-0.063 (0.044)	-0.059 (0.044)	-0.062 (0.044)	-0.062 (0.044)	-0.059 (0.044)	-0.062 (0.043)
Peace Years	-0.375** (0.035)	-0.377** (0.035)	-0.375** (0.035)	-0.377** (0.035)	-0.373** (0.035)	-0.377** (0.035)
Same Comm X Hierarchy	-0.243* (0.115)	-0.078 (0.102)	-0.277** (0.103)	-0.184 (0.130)	-0.100 (0.104)	0.242 (0.138)
<i>Observations</i>	257,062	257,062	257,062	257,062	257,062	257,062

Notes:

p < [.]; **p < .01; *p < .05

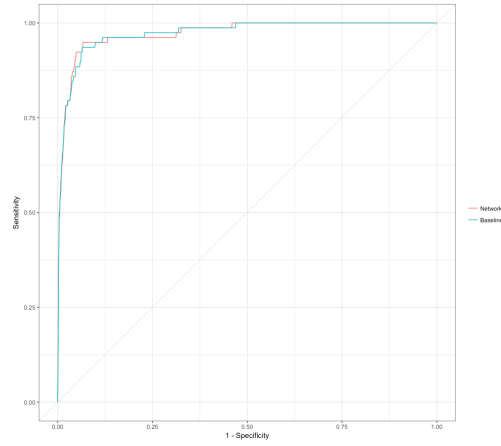
Table A.11: Hierarchy models with MIDs and covariates aggregated to the community-level.

	MIDs per dyadic tie					
	Spatial Temp. (Low)			Spatial Temp. (High)		
	(1)	(2)	(3)	(4)	(5)	(6)
Intercept	0.007 (0.023)	-0.005 (0.003)	0.001 (0.003)	-0.030* (0.017)	0.002** (0.001)	0.00001 (0.001)
Hierarchy	-0.001 (0.003)	-0.001*** (0.0002)	-0.0004* (0.0002)	-0.002 (0.004)	0.0002 (0.0002)	0.0003 (0.0004)
Avg. Democracy	0.001 (0.002)	-0.0003 (0.0002)	-0.001*** (0.0002)	0.003*** (0.001)	-0.0003*** (0.0001)	-0.0001 (0.0001)
Avg. log(GDP)	0.001 (0.003)	0.001** (0.0004)	0.0003 (0.0004)	0.004** (0.002)	-0.0001 (0.0001)	0.0002 (0.0001)
N. countries	-0.0001 (0.0001)	-0.00002 (0.00002)	0.00001 (0.00001)	-0.0002 (0.0001)	0.00002** (0.00001)	0.00002 (0.00001)
Inter-comm MIDs	-0.0004 (0.0003)	-0.00002 (0.00003)	0.00003 (0.00003)	-0.0003 (0.0003)	-0.00001 (0.00003)	-0.00000 (0.00003)
Avg. Transfer	-0.011 (0.029)	-0.003 (0.003)	-0.005* (0.003)	-0.007 (0.034)	0.002 (0.001)	-0.0003 (0.002)
<i>Observations</i>	97	80	81	164	117	313

Notes: ***p < .01; **p < .05; *p < .1

Figure A.3: Out-of-Sample Prediction Analysis, 1997-1999

(a) ROC Curve



(b) PR Curve

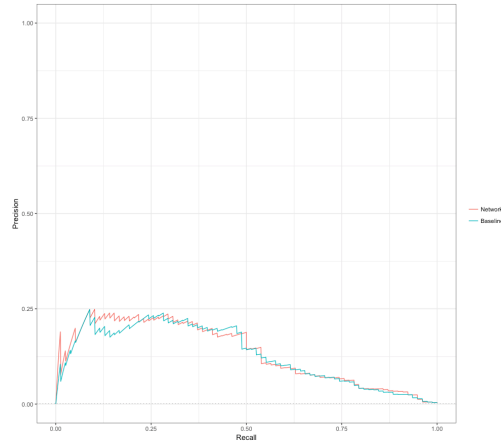


Table A.12: Forecast Comparison Table

	Network	Baseline
AUC	0.972877284	0.972789974
Accuracy	0.998239123	0.998239123
Brier	0.001595156	0.001603852

Table A.13: Interstate Arms Trade Model (TERGM) Cont.

	Model (1)	Model (2)	Model (3)
Edge	-2.5177 [-2.8371; -2.2560]*	-2.5505 [-2.8740; -2.2942]*	-2.5130 [-2.8288; -2.2228]*
GWESP	0.4412 [0.1835; 0.6444]*	0.4409 [0.1832; 0.6409]*	0.4411 [0.1828; 0.6444]*
GW-Degree	-1.6498 [-1.8294; -1.4353]*	-1.6542 [-1.8365; -1.4412]*	-1.6606 [-1.8417; -1.4431]*
Same Comm	0.8003 [0.5049; 1.1421]*	1.2479 [0.8938; 1.6084]*	0.9136 [0.3890; 1.4526]*
Hierarchy (lower)	0.0036 [0.0024; 0.0052]*	0.0053 [0.0037; 0.0073]*	0.0036 [0.0009; 0.0064]*
Arms Transfer	-0.0006 [-0.1034; 0.0107]	-0.0004 [-0.1005; 0.0110]	-0.0003 [-0.1004; 0.0109]
GDP (high)	0.0412 [-0.0092; 0.0908]	0.0326 [-0.0142; 0.0841]	0.0390 [-0.0066; 0.0852]
GDP (low)	-0.0136 [-0.0751; 0.0396]	-0.0170 [-0.0796; 0.0375]	-0.0077 [-0.0697; 0.0451]
Democracy (high)	-0.0207 [-0.0429; 0.0002]	-0.0180 [-0.0383; 0.0016]	-0.0199 [-0.0398; -0.0003]*
Democracy (low)	0.0367 [0.0152; 0.0539]*	0.0364 [0.0140; 0.0554]*	0.0338 [0.0089; 0.0534]*
IGO membership	0.0023 [-0.0051; 0.0119]	0.0022 [-0.0050; 0.0111]	0.0022 [-0.0048; 0.0111]
Contiguity	0.0794 [-0.3982; 0.4583]	-0.0739 [-0.6380; 0.3563]	0.0545 [-0.5339; 0.4976]
Dist. (log)	-0.2504 [-0.3021; -0.2074]*	-0.2716 [-0.3321; -0.2245]*	-0.2537 [-0.3295; -0.1961]*
Major Power	-0.0864 [-0.4546; 0.2242]	-0.0545 [-0.4236; 0.2635]	-0.0796 [-0.4513; 0.2387]
Allies	0.3578 [0.1299; 0.5345]*	0.3420 [0.1113; 0.5232]*	0.3503 [0.1234; 0.5236]*
CapRatio	-0.0975 [-0.1453; -0.0416]*	-0.0973 [-0.1453; -0.0415]*	-0.0975 [-0.1466; -0.0398]*
Peace Year	-0.0040 [-0.0151; 0.0035]	-0.0046 [-0.0171; 0.0033]	-0.0052 [-0.0163; 0.0025]
Same Comm X Hierarchy	-0.0042 [-0.0060; -0.0027]*	-0.0065 [-0.0087; -0.0046]*	-0.0046 [-0.0076; -0.0019]*

* 0 outside the confidence interval

Table A.14: Interstate Arms Trade Model (TERGM)

	Model (4)	Model (5)	Model (6)
Edge	-2.4649 [-2.7837; -2.1982]*	-2.4836 [-2.8038; -2.2073]*	-2.4677 [-2.7840; -2.1960]*
GWESP	0.4423 [0.1802; 0.6454]*	0.4415 [0.1823; 0.6429]*	0.4423 [0.1845; 0.6440]*
GW-Degree	-1.6586 [-1.8355; -1.4427]*	-1.6631 [-1.8416; -1.4505]*	-1.6553 [-1.8350; -1.4405]*
Same Comm	0.6318 [0.3187; 0.8879]*	0.5807 [0.2863; 0.8890]*	0.6154 [0.3161; 0.8587]*
Hierarchy (lower)	0.0011 [-0.0000; 0.0020]	0.0030 [0.0017; 0.0044]*	-0.0002 [-0.0014; 0.0010]
Arms Transfer	-0.0006 [-0.1026; 0.0107]	-0.0004 [-0.1018; 0.0109]	-0.0002 [-0.1030; 0.0110]
GDP (high)	0.0530 [0.0014; 0.1056]*	0.0491 [0.0008; 0.1017]*	0.0607 [0.0113; 0.1149]*
GDP (low)	-0.0067 [-0.0642; 0.0468]	-0.0110 [-0.0720; 0.0421]	0.0008 [-0.0564; 0.0548]
Democracy (high)	-0.0233 [-0.0451; -0.0026]*	-0.0205 [-0.0418; 0.0001]	-0.0243 [-0.0453; -0.0038]*
Democracy (low)	0.0303 [0.0091; 0.0480]*	0.0351 [0.0131; 0.0534]*	0.0267 [0.0051; 0.0459]*
IGO membership	0.0028 [-0.0042; 0.0113]	0.0019 [-0.0054; 0.0112]	0.0020 [-0.0045; 0.0101]
Contiguity	0.2526 [-0.1243; 0.6103]	0.1461 [-0.2874; 0.5299]	0.2948 [-0.1016; 0.6279]
Dist. (log)	-0.2265 [-0.2702; -0.1899]*	-0.2419 [-0.2955; -0.2019]*	-0.2200 [-0.2626; -0.1844]*
Major Power	-0.1206 [-0.4923; 0.1760]	-0.0812 [-0.4529; 0.2180]	-0.1554 [-0.5277; 0.1486]
Allies	0.3432 [0.1250; 0.5254]*	0.3595 [0.1293; 0.5390]*	0.3665 [0.1425; 0.5521]*
CapRatio	-0.0999 [-0.1464; -0.0472]*	-0.1013 [-0.1506; -0.0455]*	-0.1028 [-0.1496; -0.0460]*
Peace Year	-0.0051 [-0.0148; 0.0023]	-0.0061 [-0.0161; 0.0017]	-0.0052 [-0.0152; 0.0024]
Same Comm X Hierarchy	-0.0025 [-0.0040; -0.0009]*	-0.0033 [-0.0051; -0.0015]*	-0.0022 [-0.0039; -0.0002]*

* 0 outside the confidence interval

Table A.15: Interstate Arms Trade Model (Model 1, AMEN)

	Estimates	SEs	CI 90%(lower)	CI 90%(lower)	CI 95%(higher)	CI 95%(higher)
Intercept	-3.380	0.054	-3.447	-3.309	-3.467	-3.292
Same Comm	-0.048	0.067	-0.135	0.041	-0.163	0.073
Hierarchy	0.001	0.000	0.001	0.002	0.001	0.002
Arms Transfer (lower)	-0.016	0.006	-0.023	-0.006	-0.024	-0.005
GDP (high)	0.088	0.010	0.075	0.101	0.073	0.103
GDP (low)	0.037	0.010	0.020	0.049	0.017	0.051
Democracy (high)	0.009	0.004	0.003	0.015	0.002	0.016
Democracy (low)	-0.034	0.005	-0.041	-0.028	-0.042	-0.026
Contiguity	1.004	0.071	0.913	1.099	0.888	1.117
Dist.(log)	-0.098	0.009	-0.108	-0.086	-0.115	-0.082
Major power	0.283	0.071	0.201	0.379	0.190	0.414
Allies	0.016	0.051	-0.047	0.092	-0.065	0.118
CapRatio (log)	-0.082	0.008	-0.095	-0.072	-0.097	-0.070
Peace Years	-0.137	0.010	-0.149	-0.124	-0.152	-0.121
Same Comm X Hierarchy	-0.001	0.000	-0.001	-0.001	-0.002	-0.001

CI: Credible Intervals in the Posterior Probability Estimation

Table A.16: Interstate Arms Trade Model (Model 2, AMEN)

	Estimates	SEs	CI 90%(lower)	CI 90%(lower)	CI 95%(higher)	CI 95%(higher)
Intercept	-3.386	0.057	-3.458	-3.312	-3.478	-3.294
Same Comm	-0.006	0.064	-0.078	0.087	-0.092	0.136
Hierarchy	0.001	0.000	0.001	0.002	0.001	0.002
Arms Transfer (lower)	-0.015	0.006	-0.022	-0.007	-0.023	-0.005
GDP (high)	0.088	0.011	0.073	0.102	0.071	0.105
GDP (low)	0.045	0.011	0.028	0.057	0.023	0.060
Democracy (high)	0.007	0.004	0.000	0.012	-0.001	0.013
Democracy (low)	-0.028	0.006	-0.036	-0.021	-0.039	-0.018
Contiguity	0.957	0.066	0.867	1.043	0.847	1.058
Dist.(log)	-0.107	0.008	-0.116	-0.096	-0.122	-0.093
Major power	0.318	0.070	0.236	0.411	0.223	0.449
Allies	0.036	0.055	-0.037	0.106	-0.062	0.138
CapRatio (log)	-0.075	0.007	-0.084	-0.066	-0.087	-0.063
Peace Years	-0.139	0.010	-0.151	-0.125	-0.154	-0.120
Same Comm X Hierarchy	-0.001	0.000	-0.002	-0.001	-0.002	-0.001

CI: Credible Intervals in the Posterior Probability Estimation

Table A.17: Interstate Arms Trade Model (Model 3, AMEN)

	Estimates	SEs	CI 90%(lower)	CI 90%(lower)	CI 95%(higher)	CI 95%(higher)
Intercept	-3.388	0.054	-3.455	-3.320	-3.475	-3.301
Same Comm	-0.006	0.061	-0.083	0.086	-0.100	0.104
Hierarchy	0.001	0.000	0.001	0.001	0.001	0.001
Arms Transfer (lower)	-0.016	0.006	-0.023	-0.006	-0.024	-0.005
GDP (high)	0.090	0.009	0.078	0.101	0.076	0.103
GDP (low)	0.036	0.011	0.017	0.049	0.014	0.051
Democracy (high)	0.008	0.004	0.003	0.014	0.002	0.015
Democracy (low)	-0.033	0.005	-0.040	-0.027	-0.042	-0.025
Contiguity	1.006	0.069	0.915	1.100	0.891	1.115
Dist.(log)	-0.099	0.009	-0.109	-0.087	-0.115	-0.083
Major power	0.282	0.071	0.200	0.379	0.188	0.415
Allies	0.017	0.049	-0.042	0.091	-0.060	0.114
CapRatio (log)	-0.083	0.008	-0.096	-0.073	-0.098	-0.071
Peace Years	-0.137	0.010	-0.149	-0.124	-0.152	-0.121
Same Comm X Hierarchy	-0.001	0.000	-0.002	-0.001	-0.002	-0.001

CI: Credible Intervals in the Posterior Probability Estimation

Table A.18: Interstate Arms Trade Model (Model 4, AMEN)

	Estimates	SEs	CI 90%(lower)	CI 90%(lower)	CI 95%(higher)	CI 95%(higher)
Intercept	-3.376	0.055	-3.444	-3.306	-3.465	-3.287
Same Comm	-0.237	0.048	-0.292	-0.164	-0.303	-0.145
Hierarchy	0.001	0.000	0.000	0.001	0.000	0.001
Arms Transfer (lower)	-0.015	0.005	-0.021	-0.007	-0.022	-0.005
GDP (high)	0.094	0.008	0.084	0.103	0.082	0.106
GDP (low)	0.036	0.009	0.022	0.046	0.020	0.051
Democracy (high)	0.008	0.004	0.003	0.013	0.002	0.014
Democracy (low)	-0.031	0.005	-0.037	-0.025	-0.039	-0.022
Contiguity	1.005	0.068	0.918	1.098	0.903	1.114
Dist.(log)	-0.094	0.009	-0.103	-0.082	-0.109	-0.078
Major power	0.315	0.062	0.244	0.401	0.232	0.432
Allies	0.046	0.051	-0.017	0.122	-0.037	0.140
CapRatio (log)	-0.084	0.008	-0.093	-0.072	-0.095	-0.069
Peace Years	-0.138	0.010	-0.150	-0.125	-0.153	-0.121
Same Comm X Hierarchy	0.000	0.000	-0.000	0.001	-0.001	0.001

CI: Credible Intervals in the Posterior Probability Estimation

Table A.19: Interstate Arms Trade Model (Model 5, AMEN)

	Estimates	SEs	CI 90%(lower)	CI 90%(lower)	CI 95%(higher)	CI 95%(higher)
Intercept	-3.392	0.057	-3.463	-3.318	-3.483	-3.297
Same Comm	-0.211	0.073	-0.310	-0.119	-0.328	-0.106
Hierarchy	0.000	0.000	0.000	0.001	0.000	0.001
Arms Transfer (lower)	-0.015	0.006	-0.022	-0.007	-0.023	-0.005
GDP (high)	0.093	0.012	0.077	0.108	0.075	0.111
GDP (low)	0.041	0.011	0.024	0.053	0.019	0.056
Democracy (high)	0.007	0.004	0.002	0.012	0.001	0.013
Democracy (low)	-0.031	0.005	-0.037	-0.025	-0.039	-0.022
Contiguity	1.049	0.079	0.949	1.158	0.924	1.179
Dist.(log)	-0.096	0.009	-0.106	-0.084	-0.111	-0.080
Major power	0.309	0.061	0.238	0.392	0.227	0.425
Allies	-0.006	0.052	-0.070	0.058	-0.096	0.087
CapRatio (log)	-0.077	0.007	-0.086	-0.067	-0.088	-0.064
Peace Years	-0.138	0.009	-0.149	-0.125	-0.152	-0.122
Same Comm X Hierarchy	0.000	0.000	-0.000	0.001	-0.000	0.001

CI: Credible Intervals in the Posterior Probability Estimation

Table A.20: Interstate Arms Trade Model (Model 6, AMEN)

	Estimates	SEs	CI 90%(lower)	CI 90%(lower)	CI 95%(higher)	CI 95%(higher)
Intercept	-3.389	0.057	-3.460	-3.315	-3.480	-3.295
Same Comm	0.048	0.067	-0.030	0.130	-0.046	0.188
Hierarchy	0.001	0.000	0.001	0.001	0.001	0.001
Arms Transfer (lower)	-0.014	0.006	-0.021	-0.007	-0.023	-0.005
GDP (high)	0.088	0.010	0.074	0.102	0.072	0.105
GDP (low)	0.041	0.010	0.024	0.053	0.022	0.056
Democracy (high)	0.004	0.004	-0.002	0.010	-0.003	0.011
Democracy (low)	-0.024	0.005	-0.031	-0.018	-0.034	-0.014
Contiguity	0.982	0.071	0.889	1.074	0.865	1.095
Dist.(log)	-0.106	0.008	-0.115	-0.095	-0.120	-0.090
Major power	0.328	0.065	0.251	0.416	0.237	0.450
Allies	0.017	0.052	-0.050	0.085	-0.077	0.112
CapRatio (log)	-0.081	0.007	-0.089	-0.071	-0.091	-0.067
Peace Years	-0.137	0.010	-0.149	-0.124	-0.152	-0.120
Same Comm X Hierarchy	-0.001	0.000	-0.001	-0.000	-0.002	-0.000

CI: Credible Intervals in the Posterior Probability Estimation