Appendices for “Border Barriers and Local Armed Conflicts

1. Figures

Figure A1: Predicted probability of civil war (with interstate rivalry=1)

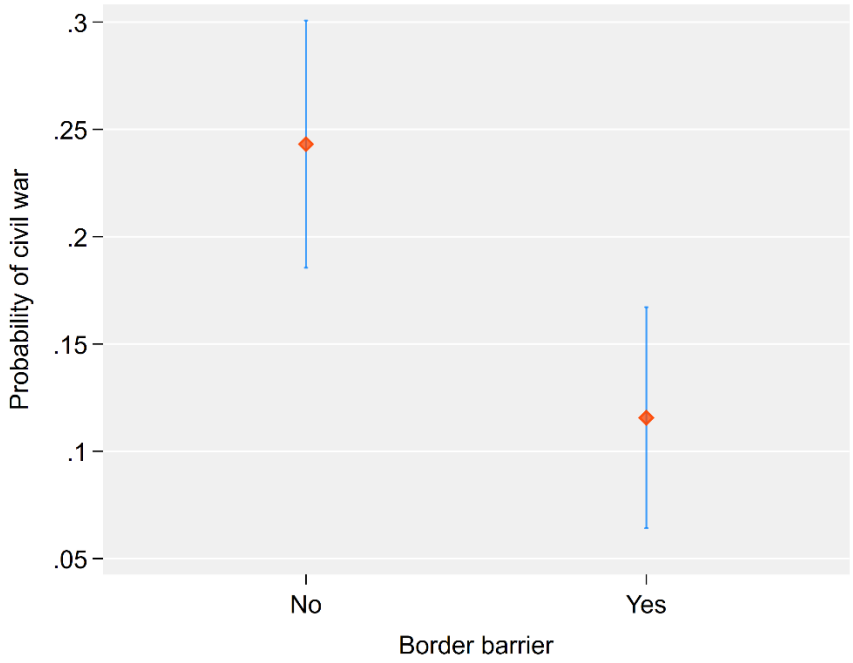


Figure A2: Predicted probability of civil war (with cross-border ethnic kin=1)

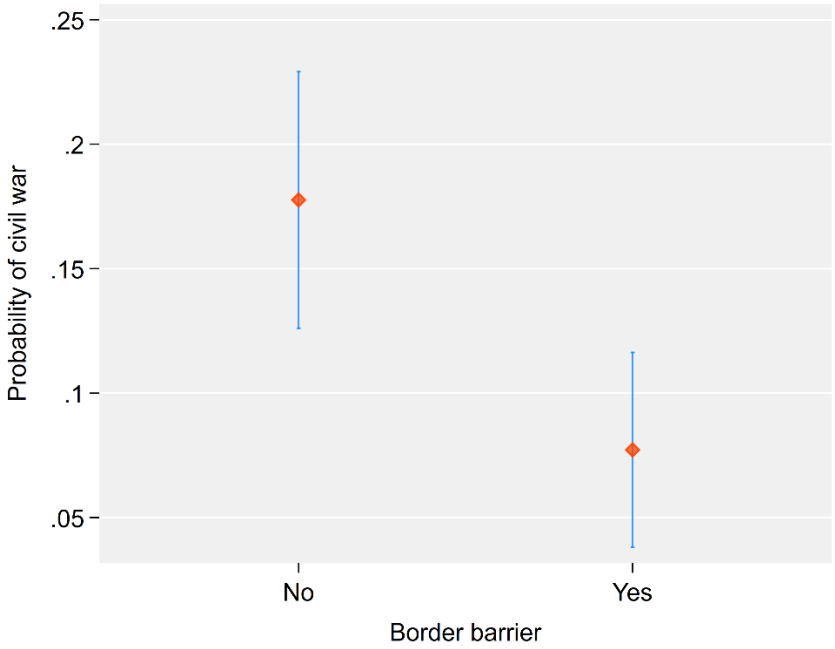


Figure A3: Predicted probability of civil war over the number of border barriers

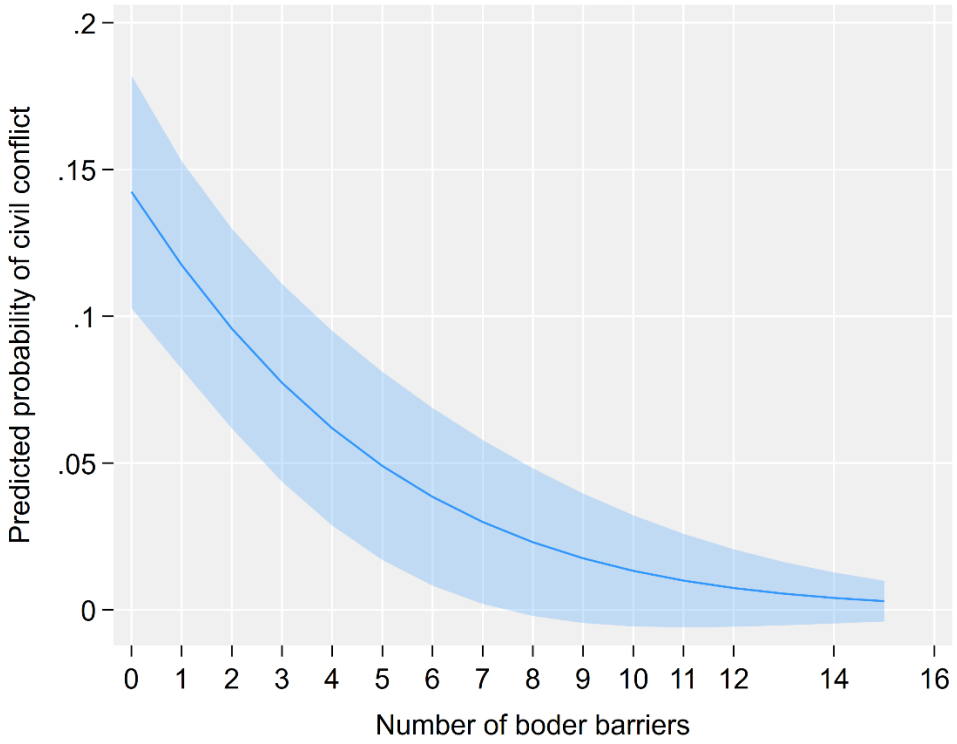


Figure A4: Predicted probability of civil war with or without neighboring barriers and interstate rivalry

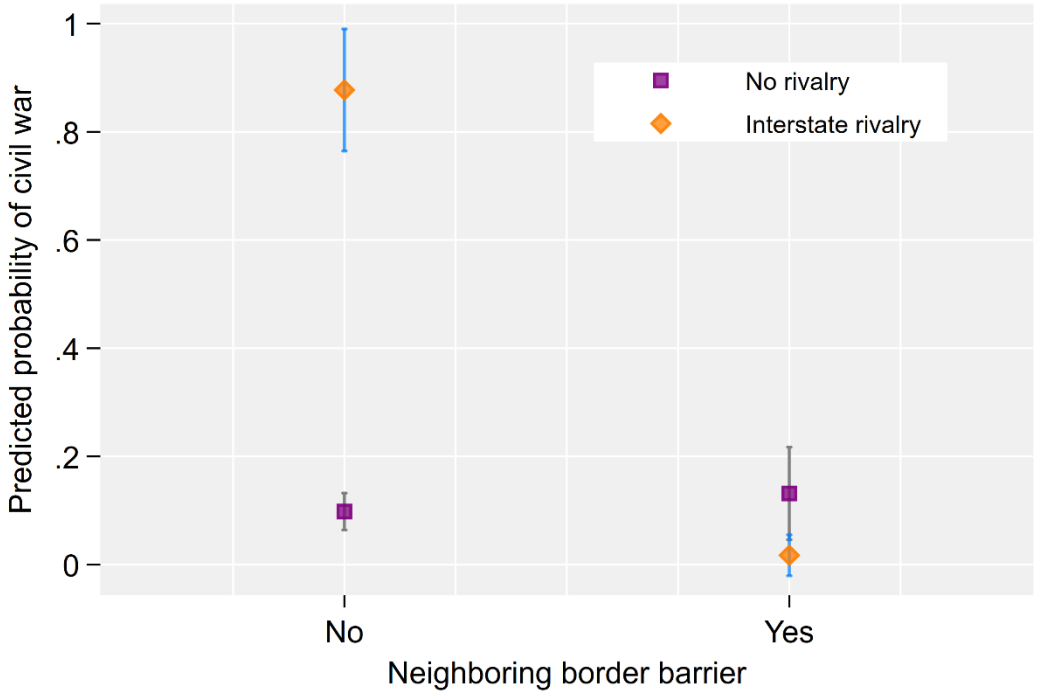


Figure A5: Causal mediation effects (H&S measure and mountainous terrain)

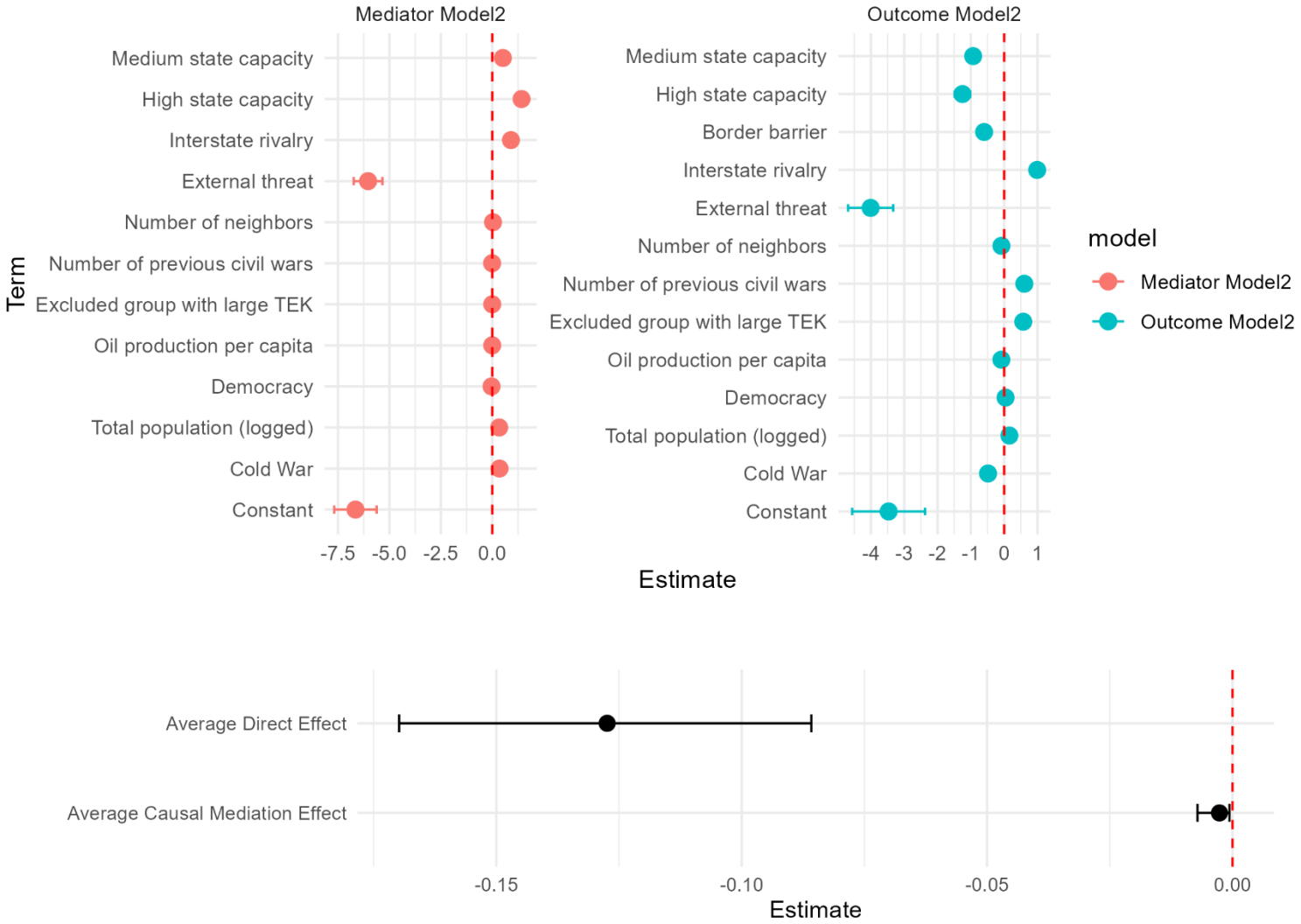


Figure A6: Causal mediation effects (GDP per capita and mountainous terrain, extended data)

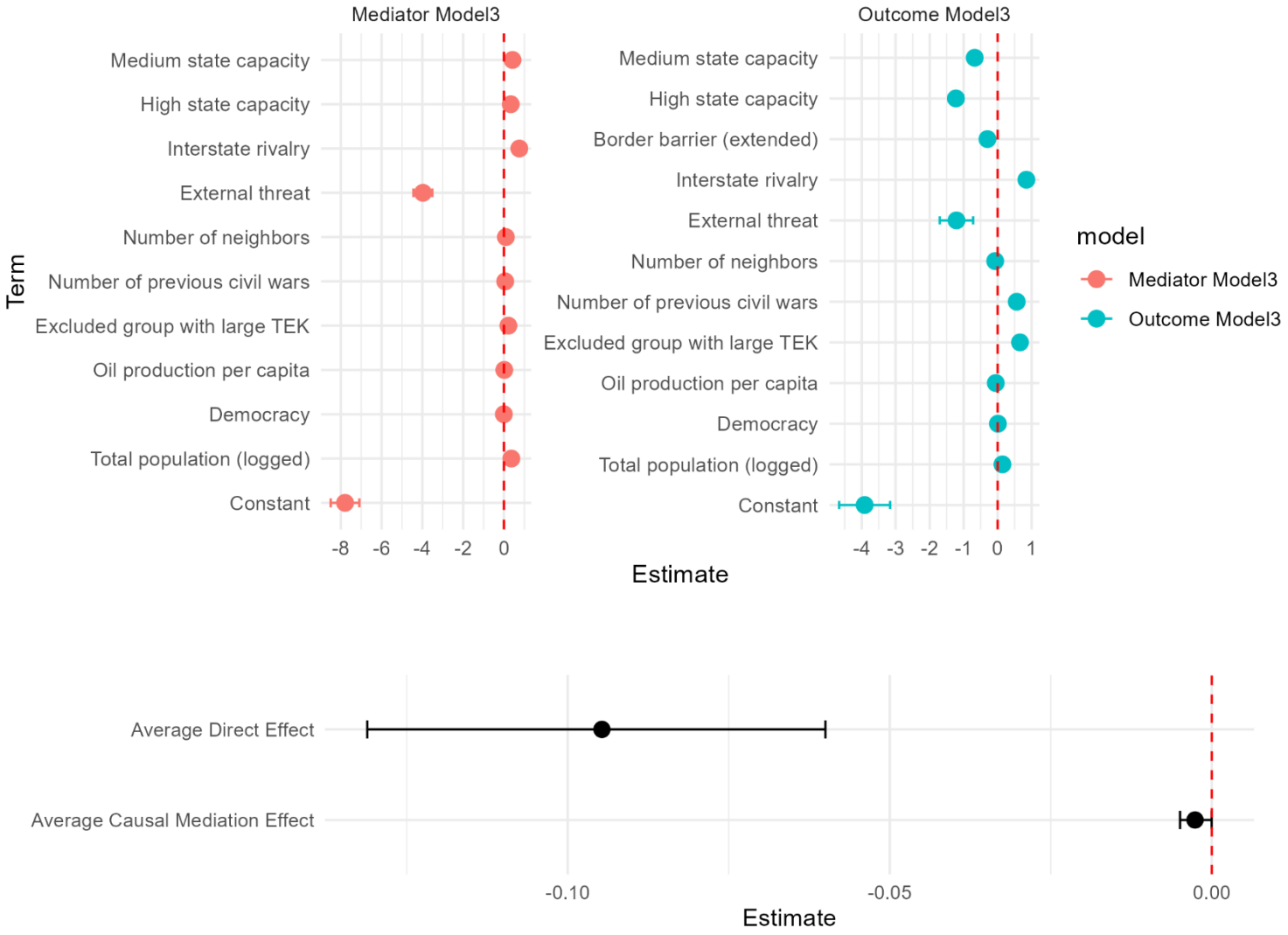


Figure A7: Causal mediation effects (H&S measure and mountainous terrain, extended data)

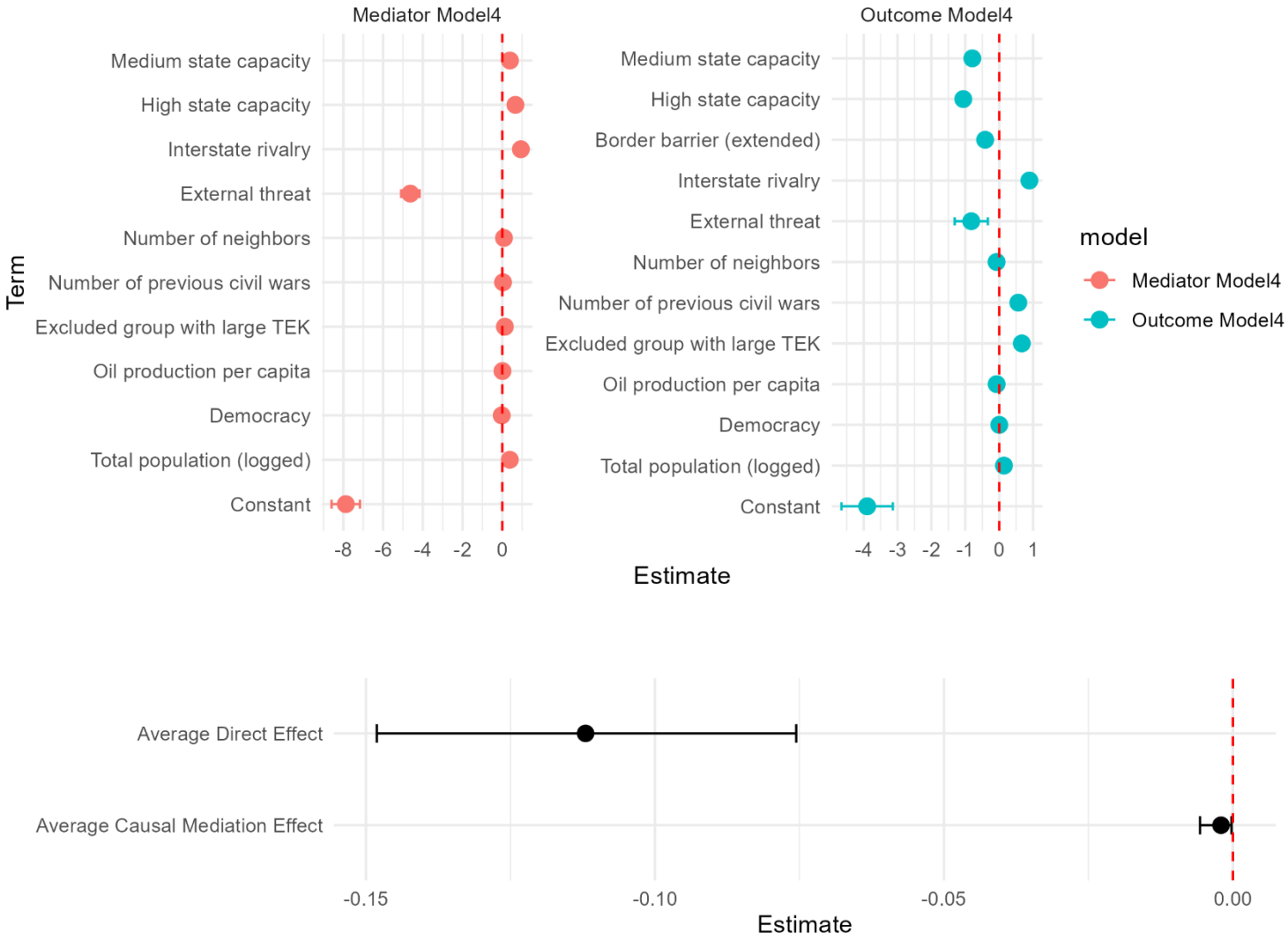


Figure A8: Causal mediation effects (GDP per capita only)

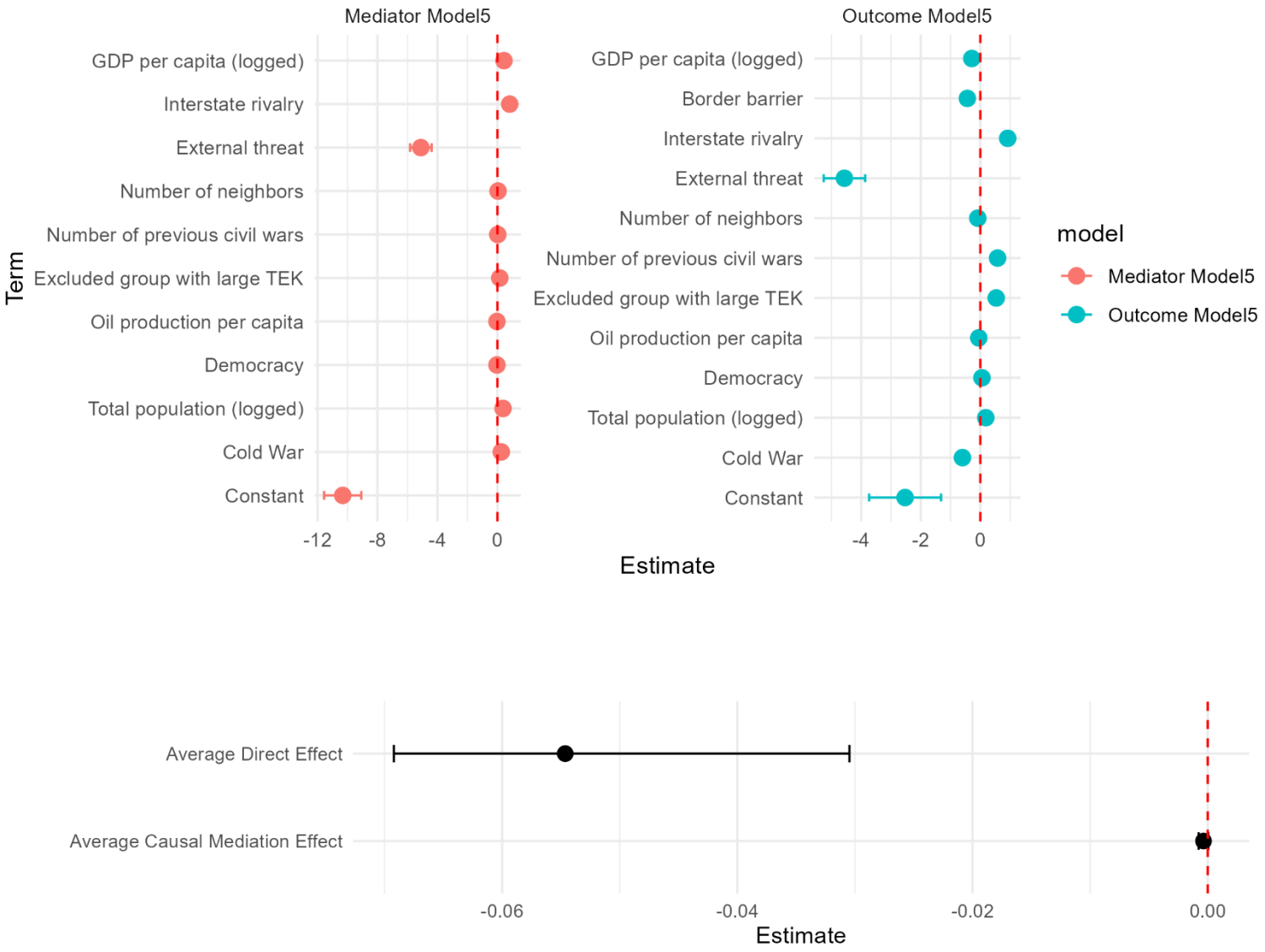
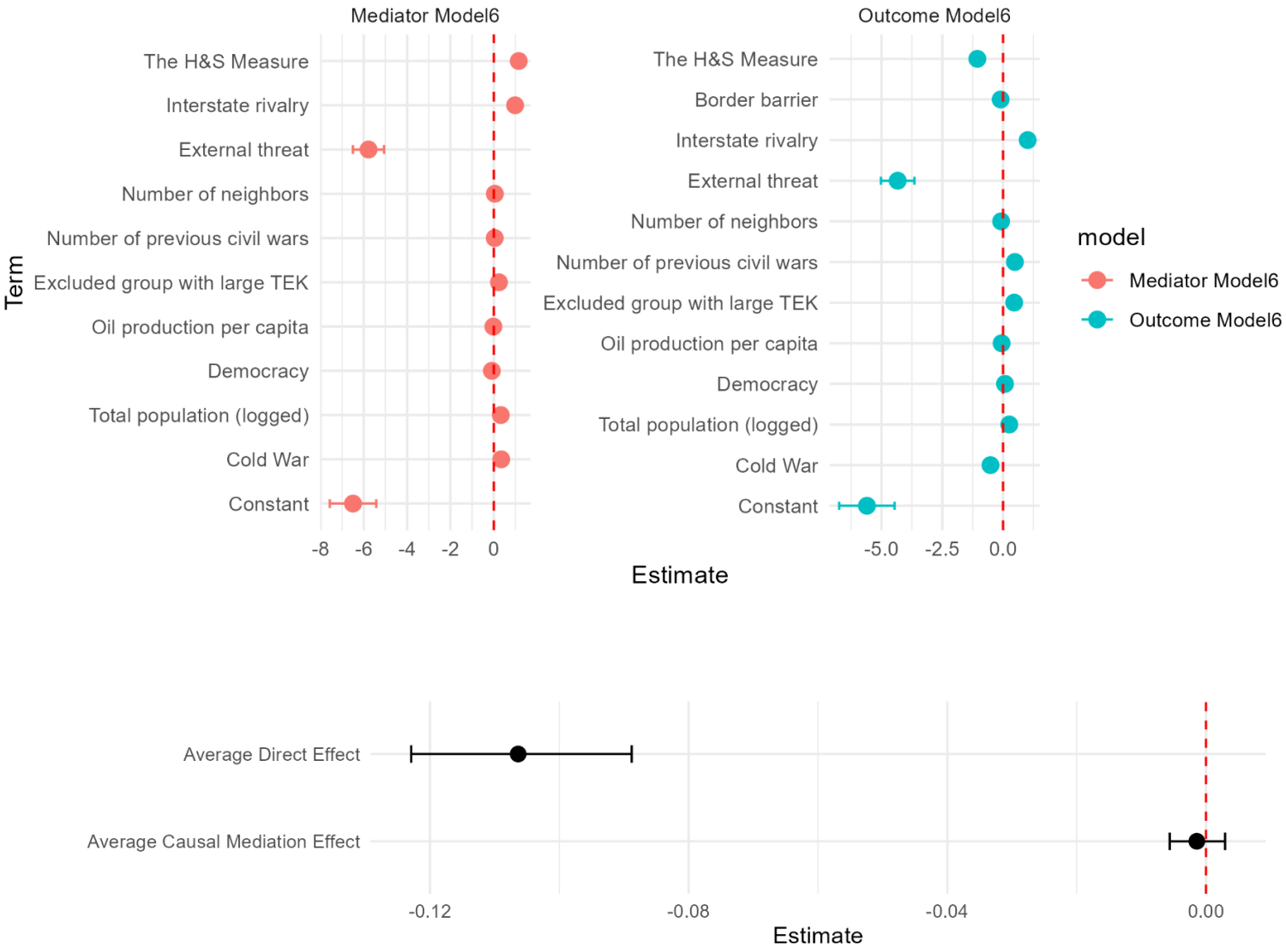


Figure A9: Causal mediation effects (GDP per capita only)



2. Tables

TABLE A1: SUMMARY STATISTICS

Variable	Observations	Mean	SD	Min	Max
Civil War	5,633	0.1743	0.3794	0	1
Border Barrier	7,170	0.1043	0.3057	0	1
Border Barrier (Extended Data)	7,273	0.1297	0.3359	0	1
Total Number of Border Barriers	7,170	0.3905	1.2624	0	15
Neighboring Border Barrier	7,170	0.3817	1.4061	0	23
GDP per Capita (Logged)	5,995	7.9349	1.5972	3.9129	11.9754
H&S Measure of State Capacity	5,536	0.3137	0.9646	-2.31	2.964
Interstate Rivalry	7,170	0.3020	0.4591	0	1
External Threat	5,633	0.2931	0.1209	0	0.5288
Number of Neighbors	5,539	3.1659	2.5207	0	20
Number of Previous Civil Wars	5,633	1.1560	2.0064	0	19
Excluded Group with Large TEK	5,633	0.3632	0.4810	0	1
Mountainous Terrain	4,259	17.7871	20.8382	0	82.2000
Oil Production per Capita	4,251	2.0743	9.4857	0	184.1929
Democracy	5,493	1.1054	7.3895	-10	10
Total Population (Logged)	6,230	15.4511	2.0522	9.1505	21.0142

TABLE A2: MIXED EFFECTS MODELS WITH EXTENDED BORDER BARRIER DATA

	(10)		(11)		(12)	
DEPENDENT VARIABLE: CIVIL WAR	**Coef.**	**SE**	**Coef.**	**SE**	**Coef.**	**SE**
Border barrier (extended)	-0.936***	(0.213)	-1.522***	(0.290)	-1.557***	(0.291)
Interstate rivalry			1.834***	(0.229)	1.800***	(0.230)
External threat			-3.357***	(1.073)	-4.014***	(1.146)
Number of neighbors			-0.105	(0.0998)	-0.112	(0.109)
Number of previous civil wars			0.558***	(0.0885)	0.552***	(0.0893)
Excluded group with large TEK			0.678**	(0.285)	0.655**	(0.286)
Mountainous terrain			0.0104	(0.0115)	0.0125	(0.0117)
Oil production per capita			0.0227	(0.0256)	0.00776	(0.0321)
Democracy			0.0278*	(0.0168)	0.0323*	(0.0171)
Population (logged)			0.364*	(0.194)	0.372*	(0.223)
GDP per capita (logged)			-0.890***	(0.155)	-0.857***	(0.182)
Cold War			-0.494***	(0.170)	-0.511***	(0.172)
Constant	-3.689***	(0.353)	-2.467	(3.158)	-1.457	(4.729)
Observations	5633		3930		3930	
Fixed effects	✓		✓		✓	
Random effects	✓		✓		✓	
Region dummies					✓	

Notes: Standard errors are in parentheses. *p<0.1, **p<0.05, ***p<0.01

TABLE A3: ADDITIONAL MODELS WITH THE TOTAL NUMBER OF BORDER BARRIERS AS IV

	(13)		(14)		(15)	
DEPENDENT VARIABLE: CIVIL WAR	**Coef.**	**SE**	**Coef.**	**SE**	**Coef.**	**SE**
Total number of border barriers	-0.352***	(0.0895)	-0.352***	(0.0894)	-0.0434***	(0.00765)
Interstate rivalry	1.772***	(0.229)	1.772***	(0.229)	0.164***	(0.0177)
External threat	-3.803***	(1.162)	-3.806***	(1.162)	-0.187***	(0.0896)
Number of neighbors	-0.133	(0.106)	-0.134	(0.105)	-0.0100	(0.0136)
Neighboring barrier	-0.132	(0.108)	-0.132	(0.108)	-0.00258	(0.00598)
Number of previous civil wars	0.595***	(0.0889)	0.595***	(0.0887)	0.0490***	(0.00775)
Excluded group with large TEK	0.596**	(0.287)	0.594**	(0.286)	0.0367	(0.0237)
Mountainous terrain	0.0113	(0.0113)	0.0112	(0.0113)	(dropped)	
Oil production per capita	0.00448	(0.0331)	0.00447	(0.0334)	0.000641	(0.00101)
Democracy	0.0256	(0.0171)	0.0257	(0.0171)	0.00113	(0.00130)
Total population (logged)	0.378*	(0.218)	0.377*	(0.217)	0.0168	(0.0514)
GDP per capita (logged)	-0.801***	(0.180)	-0.798***	(0.180)	-0.0556**	(0.0183)
Cold War	-0.583***	(0.170)	-0.583***	(0.170)	-0.0211	(0.0474)
Constant	-1.939	(4.630)	-1.944	(4.585)	0.320	(0.873)
Observations	3930		3930		3930	
Fixed effects	✓		✓		✓	
Random effects	✓		✓		✓	
Region dummies	✓		✓			

Notes: Standard errors are in parentheses. *p<0.1, **p<0.05, ***p<0.01

TABLE A4: ADDITIONAL MODELS WITH THE WEIGHTED MEASURE OF BORDER BARRIER AS IV

	(16)		(17)		(18)	
DEPENDENT VARIABLE: CIVIL WAR	**Coef.**	**SE**	**Coef.**	**SE**	**Coef.**	**SE**
Border barrier (weighted)	-1.277***	(0.320)	-1.278***	(0.320)	-0.130***	(0.0265)
Interstate rivalry	1.814***	(0.228)	1.813***	(0.227)	0.177***	(0.0187)
External threat	-3.439***	(1.147)	-3.442***	(1.147)	-0.162	(0.0954)
Number of neighbors	-0.111	(0.107)	-0.111	(0.107)	0.00172	(0.0137)
Number of previous civil wars	0.481***	(0.0854)	0.481***	(0.0853)	0.0366***	(0.00787)
Excluded group with large TEK	0.591**	(0.283)	0.590**	(0.283)	0.0315	(0.0244)
Mountainous terrain	0.0141	(0.0111)	0.0140	(0.0111)	(dropped)	
Oil production per capita	0.00702	(0.0314)	0.00701	(0.0316)	0.000722	(0.00105)
Democracy	0.0362**	(0.0173)	0.0362**	(0.0173)	0.00169	(0.00139)
Population (logged)	0.388*	(0.219)	0.387*	(0.217)	0.0262	(0.0549)
GDP per capita (logged)	-0.813***	(0.186)	-0.812***	(0.186)	-0.0709***	(0.0193)
Cold War	-0.551***	(0.173)	-0.551***	(0.173)	-0.0257	(0.0517)
Constant	-1.816	(4.599)	-1.804	(4.565)	0.237	(0.932)
Observations	3620		3620		3620	
Fixed effects	✓		✓		✓	
Random effects	✓		✓		✓	
Region dummies	✓		✓		✓	

Notes: Standard errors are in parentheses. *p<0.1, **p<0.05, ***p<0.01

TABLE A5: RANDOM EFFECTS LOGIT MODELS

	(19)		(20)		(21)	
DEPENDENT VARIABLE: CIVIL WAR	**Coef.**	**SE**	**Coef.**	**SE**	**Coef.**	**SE**
Border barrier	-0.915***	(0.234)	-1.415***	(0.319)	-1.512***	(0.324)
Interstate rivalry			1.848***	(0.227)	1.817***	(0.228)
External threat			-3.003***	(1.061)	-3.762***	(1.139)
Number of neighbors			-0.131	(0.0975)	-0.143	(0.106)
Number of previous civil wars			0.558***	(0.0878)	0.555***	(0.0886)
Excluded group with large TEK			0.648**	(0.283)	0.627**	(0.283)
Mountainous terrain			0.00914	(0.0112)	0.0117	(0.0114)
Oil production per capita			0.0218	(0.0259)	0.00557	(0.0329)
Democracy			0.0274	(0.0167)	0.0322*	(0.0170)
Total population (logged)			0.354*	(0.190)	0.377*	(0.218)
GDP per capita (logged)			-0.870***	(0.153)	-0.809***	(0.181)
Cold War			-0.555***	(0.168)	-0.575***	(0.170)
Constant	-3.776***	(0.285)	-2.449	(3.086)	-1.947	(4.599)
Observations	5632		3930		3930	
Random effects	✓		✓		✓	
Region dummies					✓	

Notes: Standard errors are in parentheses. *p<0.1, **p<0.05, ***p<0.01

TABLE A6: MIXED EFFECTS MODELS WITH A TIME TREND

	(22)		(23)		(24)	
DEPENDENT VARIABLE: CIVIL WAR	**Coef.**	**SE**	**Coef.**	**SE**	**Coef.**	**SE**
Border barrier	-1.498***	(0.325)	-1.499***	(0.325)	-0.147***	(0.0253)
Interstate rivalry	1.795***	(0.229)	1.795***	(0.228)	0.172***	(0.0175)
External threat	-3.698***	(1.141)	-3.700***	(1.141)	-0.217**	(0.0843)
Number of neighbors	-0.155	(0.107)	-0.156	(0.107)	-0.00517	(0.0131)
Number of previous civil wars	0.589***	(0.0932)	0.588***	(0.0931)	0.0417***	(0.00751)
Excluded group with large TEK	0.632***	(0.284)	0.630***	(0.284)	0.0332	(0.0237)
Mountainous terrain	0.0118	(0.0114)	0.0117	(0.0113)	(dropped)	
Oil production per capita	0.00598	(0.0318)	0.00596	(0.0322)	0.000627	(0.00101)
Democracy	0.0368**	(0.0174)	0.0368**	(0.0174)	0.00190	(0.00128)
Total population (logged)	0.447**	(0.226)	0.446**	(0.225)	0.0291	(0.0509)
GDP per capita (logged)	-0.796***	(0.180)	-0.793***	(0.180)	-0.0605***	(0.0181)
Cold War	-0.337	(0.245)	-0.336	(0.245)	-0.0264	(0.0179)
Yearly time trend	-0.0204	(0.0151)	-0.0204	(0.0151)	0.000336	(0.00141)
Constant	37.17	(29.19)	37.15	(29.19)	-0.501	(2.292)
Observations	3930		3930		3930	
Fixed effects	✓		✓		✓	
Random effects	✓		✓		✓	
Region dummies	✓		✓		✓	

Notes: Standard errors are in parentheses. *p<0.1, **p<0.05, ***p<0.01

TABLE A7: ADDITIONAL MODELS CONTROLLING FOR H&S MEASURE OF STATE CAPACITY

	(25)		(26)		(27)		(28)	
DEPENDENT VARIABLE: CIVIL WAR	**Coef.**	**SE**	**Coef.**	**SE**	**Coef.**	**SE**	**Coef.**	**SE**
Border barrier	-1.504***	(0.331)	-1.576***	(0.333)	-0.155***	(0.0256)	-0.155***	(0.0256)
Interstate rivalry	1.632***	(0.224)	1.616***	(0.225)	0.154***	(0.0171)	0.154***	(0.0171)
External threat	-3.226**	(1.056)	-3.697***	(1.137)	-0.0887	(0.0901)	-0.0887	(0.0901)
Number of neighbors	-0.130	(0.100)	-0.151	(0.108)	-0.00313	(0.0137)	-0.00313	(0.0137)
Number of previous civil wars	0.570***	(0.0872)	0.578***	(0.0885)	0.0368***	(0.00658)	0.0368***	(0.00658)
Excluded group with large TEK	0.589**	(0.280)	0.560**	(0.280)	0.0256	(0.0236)	0.0256	(0.0236)
Mountainous terrain	0.0104	(0.0108)	0.0133	(0.0110)	(dropped)		(dropped)	
Oil production per capita	0.00842	(0.0276)	-0.00290	(0.0339)	0.000902	(0.000989)	0.000902	(0.000989)
Democracy	0.0488***	(0.0170)	0.0536***	(0.0173)	0.00382***	(0.00127)	0.00382***	(0.00127)
Total population (logged)	0.598**	(0.193)	0.588**	(0.219)	-0.0124	(0.0490)	-0.0124	(0.0490)
State capacity (Hanson & Sigman)	-1.924***	(0.205)	-1.867***	(0.214)	-0.208***	(0.0187)	-0.208***	(0.0187)
Post-Cold War	-0.456**	(0.168)	-0.485**	(0.171)	0.0757	(0.0460)	0.0757	(0.0460)
Constant	-12.44***	(3.042)	-10.78**	(4.382)	0.330	(0.793)	0.330	(0.793)
Observations	4041		4041		4041		4041	
Random effects	✓		✓					
Country fixed effects	✓		✓		✓		✓	
Year fixed effects					✓		✓	
Region dummies			✓				✓	

Notes: Standard errors are in parentheses. *p<0.1, **p<0.05, ***p<0.01

TABLE A8: ADDITIONAL MODELS CONTROLLING FOR MILITARY CAPACITY

	(29)		(30)		(31)	
DEPENDENT VARIABLE: CIVIL WAR	**Coef.**	**SE**	**Coef.**	**SE**	**Coef.**	**SE**
Border barrier	-1.846***	(0.337)	-1.765***	(0.328)	-1.697***	(0.335)
Interstate rivalry	1.789***	(0.226)	1.633***	(0.223)	1.401***	(0.250)
External threat	-2.660**	(1.175)	-3.061***	(1.152)	-1.097	(1.348)
Number of neighbors	-0.145	(0.116)	-0.130	(0.108)	-0.198	(0.125)
Number of previous civil wars	0.660***	(0.0960)	0.679***	(0.0936)	0.620***	(0.0982)
Excluded group with large TEK	0.693**	(0.286)	0.727***	(0.276)	0.396	(0.341)
Mountainous terrain	0.0300**	(0.0121)	0.0257***	(0.0111)	0.0259***	(0.0132)
Oil production per capita	-0.0640	(0.0487)	-0.0386	(0.0424)	-0.0106	(0.0358)
Democracy	0.0237	(0.0174)	0.0333**	(0.0170)	0.0345*	(0.0191)
Total population (logged)	0.363	(0.232)	0.347	(0.216)	0.432*	(0.248)
Cold War	-0.529***	(0.172)	-0.605***	(0.167)	-0.535***	(0.191)
Military expenditures per capita	0.505***	(0.112)				
Military personnel per 1000			0.451***	(0.168)		
Paramilitary personnel per 1000					0.745***	(0.149)
Constant	-13.56***	(4.851)	-10.63**	(4.442)	-12.46**	(5.054)
Observations	3975		4027		3333	
Fixed effects	✓		✓		✓	
Random effects	✓		✓		✓	
Region dummies	✓		✓		✓	

Notes: Standard errors are in parentheses. *p<0.1, **p<0.05, ***p<0.01

TABLE A9: TWO-WAY FIXED EFFECTS MODELS – ADDING KEY COVARIATES

	(32)		(33)		(34)		(35)		(36)	
DEPENDENT VARIABLE: CIVIL WAR	**Coef.**	**SE**	**Coef.**	**SE**	**Coef.**	**SE**	**Coef.**	**SE**	**Coef.**	**SE**
Border barrier	-0.0812***	(0.0186)	-0.0862***	(0.0187)	-0.112***	(0.0210)	-0.133***	(0.0212)	-0.136***	(0.0212)
Interstate rivalry	0.113***	(0.0135)	0.114***	(0.0135)	0.118***	(0.0142)	0.113***	(0.0142)	0.113***	(0.0142)
External threat			-0.160**	(0.0639)	-0.172**	(0.0714)	-0.175**	(0.0712)	-0.163**	(0.0713)
Number of neighbors					0.0196*	(0.0111)	0.0127	(0.0111)	0.0115	(0.0111)
Number of previous civil wars							0.0340***	(0.00558)	0.0357***	(0.00562)
Excluded group with large TEK									0.0490**	(0.0200)
Constant	0.0992***	(0.0224)	0.152***	(0.0307)	0.0945	(0.0482)	0.104**	(0.0480)	0.0840	(0.0487)
Observations	5632		5632		5114		5114		5114	
Country fixed effects	✓		✓		✓		✓		✓	
Year fixed effects	✓		✓		✓		✓		✓	

Notes: Standard errors are in parentheses. *p<0.1, **p<0.05, ***p<0.01

TABLE A10: TWO-WAY FIXED EFFECTS MODELS – ADDING KEY COVARIATES (CONTINUED)

	(37)		(38)		(39)		(40)	
DEPENDENT VARIABLE: CIVIL WAR	**Coef.**	**SE**	**Coef.**	**SE**	**Coef.**	**SE**	**Coef.**	**SE**
Border barrier	-0.152***	(0.0237)	-0.154***	(0.0245)	-0.159***	(0.0249)	-0.143***	(0.0255)
Interstate rivalry	0.133***	(0.0166)	0.144***	(0.0169)	0.141***	(0.0172)	0.169***	(0.0177)
External threat	-0.160	(0.0850)	-0.186**	(0.0852)	-0.197**	(0.0878)	-0.164*	(0.0895)
Number of neighbors	0.0145	(0.0122)	0.0133	(0.0124)	0.0141	(0.0129)	-0.00830	(0.0133)
Number of previous civil wars	0.0413***	(0.00634)	0.0417***	(0.00636)	0.0414***	(0.00646)	0.0421***	(0.00754)
Excluded group with large TEK	0.0448*	(0.0230)	0.0410	(0.0234)	0.0411*	(0.0236)	0.0332	(0.0238)
Oil production per capita	0.0000225	(0.000945)	-0.0000674	(0.000943)	0.0000877	(0.00101)	0.000605	(0.00101)
Democracy			0.00201	(0.00126)	0.00211	(0.00128)	0.00175	(0.00129)
Total population (logged)					0.0233	(0.0488)	0.0181	(0.0512)
GDP per capita (logged)							-0.0572***	(0.0183)
Constant	0.0754	(0.0582)	0.0865	(0.0588)	-0.280	(0.789)	0.303	(0.872)
Observations	4251		4195		4114		3930	
Country fixed effects	✓		✓		✓		✓	
Year fixed effects	✓		✓		✓		✓	

Notes: Standard errors are in parentheses. *p<0.1, **p<0.05, ***p<0.01

TABLE A11: ADDITIONAL MODELS – NEIGHBORING BORDER BARRIER AS IV

	(41)		(42)		(43)	
DEPENDENT VARIABLE: CIVIL WAR	**Coef.**	**SE**	**Coef.**	**SE**	**Coef.**	**SE**
Border barrier	-1.065***	(0.329)	-1.066***	(0.330)	-0.114***	(0.0281)
Neighboring barrier	-1.102**	(0.536)	-1.101**	(0.535)	-0.0636*	(0.0376)
Interstate rivalry	1.807***	(0.228)	1.807***	(0.228)	0.176***	(0.0187)
External threat	-3.166***	(1.156)	-3.169***	(1.156)	-0.167*	(0.0954)
Number of neighbors	-0.123	(0.107)	-0.123	(0.107)	-0.00490	(0.0142)
Number of previous civil wars	0.501***	(0.0861)	0.500***	(0.0859)	0.0385***	(0.00795)
Excluded group with large TEK	0.588**	(0.282)	0.587**	(0.282)	0.0318	(0.0244)
Mountainous terrain	0.0149	(0.0111)	0.0149	(0.0110)		
Oil production per capita	0.000693	(0.0345)	0.000655	(0.0346)	0.000755	(0.00105)
Democracy	0.0337*	(0.0173)	0.0337*	(0.0173)	0.00158	(0.00139)
Population (logged)	0.394*	(0.218)	0.393*	(0.217)	0.0400	(0.0555)
GDP per capita (logged)	-0.797***	(0.185)	-0.796***	(0.186)	-0.0701***	(0.0193)
Cold War	-0.567***	(0.173)	-0.567***	(0.173)	-0.0360	(0.0520)
Constant	-1.648		-1.642		0.0460	
Observations	3620		3620		3620	
Random effects	✓		✓			
Country fixed effects	✓		✓		✓	
Year fixed effects					✓	
Region dummies	✓		✓			

Notes: Standard errors are in parentheses. *p<0.1, **p<0.05, ***p<0.01

TABLE A12: ADDITIONAL MODELS – ALL BORDER BARRIERS (INCLUDING NEIGHBORING BARRIERS) AS IV

	(44)		(45)		(46)	
DEPENDENT VARIABLE: CIVIL WAR	**Coef.**	**SE**	**Coef.**	**SE**	**Coef.**	**SE**
All border barriers (including neighboring)	-0.481**	(0.193)	-0.481**	(0.193)	-0.0383**	(0.0153)
Interstate rivalry	1.790***	(0.226)	1.790***	(0.226)	0.173***	(0.0177)
External threat	-3.525***	(1.127)	-3.527***	(1.127)	-0.170*	(0.0904)
Number of neighbors	-0.101	(0.103)	-0.101	(0.103)	-0.00248	(0.0134)
Number of previous civil wars	0.537***	(0.0876)	0.536***	(0.0874)	0.0385***	(0.00761)
Excluded group with large TEK	0.583***	(0.281)	0.582***	(0.280)	0.0288	(0.0238)
Mountainous terrain	0.0131	(0.0111)	0.0131	(0.0111)		
Oil production per capita	0.00789	(0.0296)	0.00791	(0.0299)	0.000776	(0.00101)
Democracy	0.0305*	(0.0169)	0.0305*	(0.0169)	0.00158	(0.00130)
Population (logged)	0.298	(0.214)	0.297	(0.213)	0.0185	(0.0520)
GDP per capita (logged)	-0.834***	(0.179)	-0.832***	(0.179)	-0.0601***	(0.0185)
Cold War	-0.599***	(0.169)	-0.598***	(0.169)	-0.0301	(0.0476)
Constant	-0.655		-0.653		0.296	
Observations	3930		3930		3930	
Fixed effects	✓				✓	
Random effects	✓		✓			
Region dummies	✓		✓			

Notes: Standard errors are in parentheses. *p<0.1, **p<0.05, ***p<0.01

TABLE A13: ADDITIONAL MODELS – INTERACTIONS BETWEEN BORDER BARRIER AND STATE CAPACITY

	(47)		(48)	
DEPENDENT VARIABLE: CIVIL WAR	**Coef.**	**SE**	**Coef.**	**SE**
Border barrier	-1.598***	(0.340)	-1.406	(1.851)
State capacity (Hanson & Sigman)	-1.886***	(0.222)		
Border barrier × State capacity	0.137	(0.427)		
GDP per capita (logged)			-0.811***	(0.181)
Border barrier × GDP per capita			-0.0145	(0.254)
Interstate rivalry	1.619***	(0.225)	1.817***	(0.228)
External threat	-3.686***	(1.137)	-3.754***	(1.143)
Number of neighbors	-0.150	(0.108)	-0.142	(0.107)
Number of previous civil wars	0.580***	(0.0888)	0.554***	(0.0893)
Excluded group with large TEK	0.572**	(0.282)	0.628**	(0.284)
Mountainous terrain	0.0131	(0.0110)	0.0119	(0.0114)
Oil production per capita	-0.00280	(0.0339)	0.00551	(0.0326)
Democracy	0.0542***	(0.0174)	0.0322*	(0.0171)
Population	0.588**	(0.218)	0.379*	(0.219)
Cold War	-0.486***	(0.171)	-0.575***	(0.171)
Constant	-10.88**	(4.387)	-1.933	(4.653)
Observations	4041		3930	
Fixed effects	✓		✓	
Random effects	✓		✓	
Region dummies	✓		✓	

Notes: Standard errors are in parentheses. *p<0.1, **p<0.05, ***p<0.01