Online Appendix for

"Military Technology and Human Loss in Intrastate Conflict"

Part 1: Main results differentiated by weapon type and Summary Statistics

The Determinants	(A1)	(A2)	(A3)	(A4)
Of Conflict Intensity	MCW	MCW	Small Arms	Small Arms
	only	only	only	only
Battle Deaths (Lag, LN)	0.433***	0.406***	0.432***	0.422***
	(9.978)	(9.504)	(10.088)	(9.629)
Year of Conflict	-0.014**	-0.013**	-0.024***	-0.024***
	(-2.259)	(-2.046)	(-3.350)	(-3.346)
Population (LN)	-0.866	-1.306**	-0.256	-0.377
	(-1.346)	(-2.058)	(-0.413)	(-0.599)
GDP (Lag, LN)	0.000	0.090	0.027	0.051
	(0.002)	(0.427)	(0.121)	(0.230)
Polity	-0.026	-0.016	-0.037*	-0.038*
	(-1.235)	(-0.782)	(-1.860)	(-1.885)
Ethnically excluded	1.271**	0.903	0.015	-0.119
Population (%)	(2.179)	(1.572)	(0.036)	(-0.275)
Arms Import (LN)	0.080*	0.029	0.031	0.028
	(1.842)	(0.659)	(1.395)	(1.219)
Rebel Strength	0.796**	-1.316**	0.886***	-0.211
	(2.179)	(-2.259)	(2.875)	(-0.204)
Rebel Strength x Arms Import (LN)		0.551***		0.083
		(4.578)		(1.114)
Constant	12.127**	16.348***	5.410	6.588
	(2.319)	(3.155)	(1.091)	(1.299)
Observations	472	472	490	490
R-squared	0.273	0.311	0.268	0.270
Number of conflics	79	79	71	71

1. Main results differentiated by weapon type

Table A1. Fixed-Effects-Estimations on battle deaths / year. Separate models for different types of weapons. Note: GDP = Gross Domestic Product, MCW= Major Conventional Weapons; *** p<0.01, ** p<0.05, * p<0.1

Table A1 replicates our main analysis but only for the imports of one type of weapons at a time. Models A1-2 cover MCW while models A3-4 cover Small Arms. These results are similar to those obtained when including both types of weapons at the same time with the exception that the interaction term *Rebel Strength x Arms Import (LN)* is not significant in model A4. However, we still find substantially the same effect as in the main models as indicated by figure A1. There, it becomes clear that even in model A4, governmental small arms imports are associated with an increase in conflict intensity when rebels are at least at parity but have no effect when this is not the case.

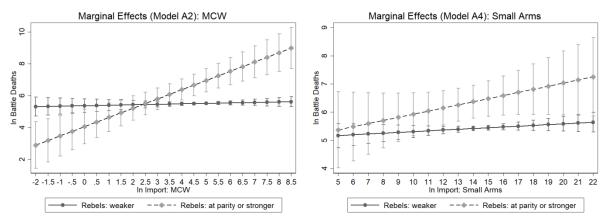


Figure A1: Marginal effects plots for the *Rebel Strength x Import:* MCW_t interaction term in Model A2 (Left panel) and the *Rebel Strength x Import:* Small Arms_t interaction term in Model A4 (Right panel).

2. Summary Statistics

Variable		Mean	Std. Dev.	Min	Max	Observations
Battle	overall	808.3033	1919.357	25	30633	N = 877
Deaths	between		1839.198	25	14490	n = 131
	within		1255.649	-8641.03	16951.3	N/n = 6.69466
Battle	overall	5.384849	1.591629	3.218876	10.32983	N = 877
Deaths	between		1.278839	3.218876	9.362647	n = 131
(LN)	within		1.002984	.7473258	8.206612	N/n = 6.69466
Rebel	overall	.0965842	.2955649	0	1	N = 849
Strength	between		.3389462	0	1	n = 126
	within		.172712	7034158	.8965842	N/n = 6.7381
Import:	overall	374.7473	667.8993	0	4004.82	N = 868
MCW	between		519.5863	0	2172.94	n = 126
	within		343.3579	-1063.473	2440.617	N/n = 6.88889
Import:	overall	2.31e+07	1.11e+08	0	1.39e+09	N = 741
SA	between		7.75e+07	0	8.11e+08	n = 111
	within		5.17e+07	-4.89e+08	6.03e+08	N/n = 6.67568
Import:	overall	4.736594	2.081278	-2.120264	8.295254	N = 661
MCW (LN)	between		2.000882	095894	7.596819	n = 114
	within		.9445632	.164954	7.743633	N/n = 5.79825
Import:	overall	14.29506	2.920394	5.420535	21.05269	N = 656
SA (LN)	between		2.597152	7.283448	20.37112	n = 103
	within		1.777821	5.291997	19.1851	N/n = 6.36893
Year of	overall	7.478905	9.597068	0	47	N = 877
Conflict	between		6.570148	0	36	n = 131
	within		5.537247	-16.12109	38.77891	N/n = 6.69466
Population	overall	170788.4	340242	427.39	1305239	N = 877
	between		291398.2	427.39	1305239	n = 131
	within		33906.07	-30959.52	354248.4	N/n = 6.69466
Population	overall	10.53973	1.691709	6.057697	14.0819	N = 877
(LN)	between		1.781324	6.057697	14.0819	n = 131
CDD	within	500740.2	.119453	10.17639	10.91144	N/n = 6.69466
GDP	overall	599749.3	1597271	536.7	1.32e+07	N = 877
	between		1470268	536.7	1.25e+07	n = 131
CDD	within	11 51400	333161.7	-729444.2	2951006	N/n = 6.69466
GDP	overall	11.51423	2.03895	6.769286	16.39188	N = 641
(LN, lag)	between		2.142006	6.769286	16.33247	n = 88
D - 1:4-1	within	1 400700	.2971528	10.4597	12.52668	N/n = 7.28409
Polity	overall	1.400709	6.058801	-9	10	N = 846
	between		5.550252	-9 0 700201	10	n = 126
Educia alla	within	2547475	2.313293	-9.799291	10.65071	N/n = 6.71429
Ethnically excluded	overall between	.2547475	.2410877	0 0	.8793364	N = 875 n = 129
			.2121495	0 209899	.8686869	n = 129 N/n = 6.78295
Population	within	2 105752	.1174449		.7165079	
Civil War MCW	overall between	3.485753	2.624749 2.2539	0 0	8.08621 7.44091	N = 868 n = 126
MCW	within		1.331991	3375683		n = 126 N/n = 6.88889
Non-Civil		1 570407		0	8.677031	
War MCW	overall	1.570407	2.241731	0	6.994208	
war MC w	between		1.913719		6.364751	
Militam	within	9.64642	1.265475	-3.037689 0	6.099693	N/n = 6.88889 N = 740
Military Small Arms	overall between	9.04042	5.833429 5.174283	0 0	20.44869 20.13302	N = 740 n = 110
sman Arms	within		3.174283 3.128061	0 -2.435995	20.13302 18.75777	n = 110 N/n = 6.72727
Sport		12.94686	5.436933	-2.455995	21.74584	N/II = 0.72727 N = 740
Sport Small Arms	overall between	12.74000	5.430933 4.714172	0	20.93703	n = 110 n = 110
Small Arms	within			0 3900258	20.93703 23.32489	n = 110 N/n = 6.72727
Import MCW		3.653501	3.499714	3900238		
Import:MCW	overall	3.033301	2.673167		8.295504	N = 868
(LN, incl.	between		2.330558	0	7.597321	n = 126
Zero obs.)	within	10 (5500	286.8994	1.324964	4223562	N/n = 6.88889
Import:SA	overall	12.65532	5.322452	0	21.05269	N = 741

(LN, incl.	between		4.739298	0	20.37112	n = 111
Zero obs.)	within		3.38399	3696465	22.43263	N/n = 6.67568
No Observed	overall	.2384793	. 4263993	0	1	N = 868
Trade MCW	between		. 3463399	0	0	n = 126
	within		. 301281	6990207	1.185848	N/n = 6.88889
No Observed	overall	.1147099	. 3188867	0	1	N = 741
Trade SA	between		. 2839846	1	1	n = 111
	within		.240645	6545209	1.06471	N/n = 6.67568
Import:	overall	4.679906	2.189579	-3.912023	8.427631	N=672
MCW (LN,	between		2.091681	655371	7.874146	n=111
Lagged)	within		.9893415	-1.089603	7.546972	T-bar=6.05405
Import:	overall	5.827094	2.261205	-1.049822	9.66211	N=765
MCW (LN,	between		2.283757	-1.049822	9.353916	n=115
<i>t</i> to <i>t</i> -3)	within		.7511052	2.894894	8.502928	T-bar=6.65217
Import:Small	overall	16.08354	2.604441	6.966967	22.32381	N=588
Arms (LN,	between		2.324017	9.463062	21.61249	n=94
<i>t</i> to <i>t</i> -3)	within		1.397603	9.894107	20.32473	T-bar=6.25532
Import:	overall	6.173731	2.298984	-1.049822	9.980054	N=793
MCW (LN,	between		2.325762	-1.049822	9.857842	n=115
<i>t</i> to <i>t</i> -5)	within		.7131564	3.027821	8.590319	T-bar=6.89565
Import:	overall	6.796286	2.373197	5108256	10.43203	N=812
MCW (LN,	between		2.302628	1.426954	10.39448	n=112
<i>t</i> to <i>t</i> -10)	within		.6959151	3.053436	9.65741	T-bar=7.25
Military	overall	.0210541	.0532746	.0000476	.4924979	N = 738
Quality	between		.0455376	.0005429	.4071575	n = 107
	within		.0088769	0917869	.1063945	N/n = 6.8972
Military	overall	2.328223	1.282095	-3.251989	6.12213	N = 751
Quality	between		1.168424	787643	5.921321	n = 108
(LN, lag)	within		.4737908	1361232	5.01719	N/n = 6.9537
Rebel	overall	.1826952	.5271025	.0000381	5.333333	N = 597
Strength:	between		.4091799	.0000426	2.958142	n = 95
Troop Share	within	<u> </u>	.3406663	-2.094596	2.557887	N/n = 6.28421

Table A2. Summary Statistics of all variables used in the analysis. Note: MCW= Major Conventional Weapons, SA = Small Arms, GDP = Gross Domestic Product. Note: "Within" values are computed as deviations from the unit mean and can hence be both positive and negative.

			Intervention	Intervention
			model: Imports	model: Imports
	Imports including 5	Imports including 5	including 5 years	including 5 years
	years before onset	years before onset	before onset	before onset
~	Moore	Corrected	Moore	Corrected
State Arms Imports	0.573*	0.077	0.639**	0.076
(logged)	(1.706)	(0.825)	(1.995)	(0.868)
Rebel Arms Imports	0.391***	0.408***	0.399***	0.426***
(logged)	(2.963)	(2.930)	(3.177)	(3.258)
Duration	0.531***	0.562***	0.416***	0.466***
(logged)	(3.969)	(4.100)	(3.128)	(3.533)
Population	-0.152	-0.076	-0.069	0.061
(logged)	(-1.220)	(-0.501)	(-0.568)	(0.412)
Military Quality	0.267**	0.185	0.236**	0.147
(logged)	(2.219)	(1.422)	(2.054)	(1.200)
GDP (logged)	-0.420**	-0.243	-0.368**	-0.156
	(-2.297)	(-1.186)	(-2.102)	(-0.801)
Cold War	0.552*	0.466	0.422	0.323
	(1.865)	(1.476)	(1.480)	(1.078)
Mountainous Terrain	0.058	0.053	0.074	0.084
(logged)	(0.510)	(0.471)	(0.680)	(0.788)
Democracy	-0.867**	-0.964**	-0.822**	-0.985**
·	(-2.131)	(-2.255)	(-2.122)	(-2.449)
Ethnic	-0.912**	-0.864**	-0.933**	-0.782*
Polarization	(-2.433)	(-2.062)	(-2.617)	(-1.980)
Religious	0.219	0.500	0.164	0.485
Polarization	(0.666)	(1.392)	(0.524)	(1.436)
Intervention			0.809***	0.945***
			(2.973)	(3.336)
Constant	11.045***	9.384***	9.260***	6.335**
	(4.266)	(3.005)	(3.652)	(2.061)
Observations	87	89	87	89
R-squared	0.571	0.518	0.617	0.580

Part 2: Replication of Moore (2012)

Table A3. Pooled OLS regression on battle deaths / year. Note: GDP = Gross Domestic Product; *** p<0.01, **</th>p<0.05, * p<0.1

Part 3. Robustness Tests

1. Using a Control Function Approach instead of Instrumental Variables

To check the robustness of our instrumental variables regressions, we also make use of the control function approach. That is, we first regress our endogenous variables (the respective arms imports variable and its interaction with rebel strength) on all exogenous variables, save the residuals from these models, and then include these residuals as additional controls when regressing battle deaths on the endogenous and exogenous variables (see Wooldridge 2015).

Of Conflict Intensity Battle Deaths (Lag, LN) 0.419^{***} 0.406^{***} 0.412^{***} 0.408 Year of Conflict -0.005 -0.018^{**} -0.027^{***} -0.02 Year of Conflict -0.005 -0.018^{**} -0.027^{***} -0.02 Population (LN) -0.276 0.227 -1.654^{***} -1.66 (-0.510) (0.325) (-2.188) (-2.2 GDP (Lag, LN) 0.173 0.066 0.091 0.0 (-0.510) (0.325) (-2.188) (-2.2 GDP (Lag, LN) 0.173 0.066 0.091 0.0 (-0.510) (0.325) (0.476) $(0.4$ Polity 0.012 -0.001 -0.018 -0.0 In import: SA (0.650) (-0.065) (-0.992) (-1.065) In import: MCW (-3.309) (-1.468) (1.216) (1.216) In import: Civil War MCW $(-0.423^{**} - 0.719^{**} - 0.422$ -0.4 (-3.309) (-2.163)	60) 8*** 76) 56** 222) 92 82)
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(2.506) (2.3) Rebel Strength: EoH x ln 0.116** 0.116 0.12	7**
8	79)
	0**
Import: Military Small Arms (2.184) (2.2	40)
Residuals: Constituent Term MCW 0.483** 0.482**	
(2.059) (2.104)	
Residuals: Interaction Term MCW -0.795*** -0.651***	
(-5.572) (-3.595)	
Residuals: Constituent Term SA -0.130** -0.12	9**
(-2.444) (-2.3	(45)
Residuals: Interaction Term SA -0.077 -0.0	82
(-1.270) (-1.3	38)
Constant 3.374 -0.009 12.999*** 13.10	3***
$(0.885) \qquad (-0.002) \qquad (2.675) \qquad (2.7)$	25)
Observations 608 549 549 54	
R-squared 0.736 0.737 0.728 0.7	.9

 Table A4: Control Function Approach. OLS estimation on battle deaths / year with conflict-fixed Effects. Note: GDP = Gross

 Domestic Product, MCW= Major Conventional Weapons, SA=Small Arms; *** p<0.01, ** p<0.05, * p<0.1</td>

We use wild bootstrapping (Roodman et al. 2019) to correct our standard errors. Full, nonbootstrapped results of the second stage are presented in table A4 and the relevant bootstrapped coefficients are presented in table A5. Results are in line with our main analysis and the results using Instrumental Variables.

h0: $\beta_{Arms\ Imports} = 0$ and	Import: Arms	Rebel Strength x Import: Arms
$\beta_{RSxAtms\ Imports} = 0$		
Model A5	z = -1.8137	z = 5.4329
	Prob> z = 0.0871	Prob> z = 0.0020
Model A6	z = -1.8399	z = 5.1464
	Prob> z = 0.0621	> z = 0.0010
Model A7	z = 2.5063	z = 2.1844
	Prob> z = 0.0511	Prob> z = 0.0901
Model A8	z = 2.3788	z = 2.2405
	Prob> z = 0.0581	Prob> z = 0.0871

 Table A5. Results of Wald tests using wild bootstrapping. Hypotheses are tested separately. Null imposed, 999 replications, Rademacher weights.

2. Tackling the Nickell bias

Models including both a lagged version of the dependent variable on the right side of the equation and fixed effects are prone to be biased due to the former being correlated with the error term (Nickell 1981). We use difference and system GMM estimators to make sure that our findings are not a result of biased estimation. The results reported in tables A6-A9 are produced using two different variants of the GMM estimator first developed by Holtz-Eakin, Newey, and Rosen (1988) and Arellano and Bond (1991) in-/excluding time dummys. A6 and A7 use the original difference GMM while A8 and A9 are obtained using the later developed system GMM (Arellano and Bover 1995; Blundell and Bond 1998), estimation is carried out using David Roodman's (2009) xtabond2 package.

	(A9)	(A10)	(A11)	(A12)
The Determinants	Unconditional	Interaction	Interaction	Both
Of Conflict Intensity		MCW	Small Arms	Interactions
Year of Conflict	0.014	0.015	0.014	0.015
	(1.118)	(1.281)	(1.168)	(1.274)
Population (LN)	-1.238	-1.305	-1.191	-1.248
-	(-1.193)	(-1.288)	(-1.169)	(-1.238)
GDP (Lag, LN)	0.088	0.096	0.037	0.052
	(0.263)	(0.295)	(0.111)	(0.160)
Polity	-0.089**	-0.080*	-0.094**	-0.087**
	(-2.077)	(-1.902)	(-2.228)	(-2.057)
Ethnically excluded	1.184	1.362	0.960	1.130
Population (%)	(1.376)	(1.611)	(1.127)	(1.326)
Import: Small Arms (LN)	0.031	0.032	0.019	0.022
•	(0.967)	(1.025)	(0.611)	(0.706)
Import: MCW (LN)	0.183***	0.126*	0.182***	0.141**
• • •	(2.846)	(1.814)	(2.882)	(2.018)
Rebel Strength	0.476	-0.960	-5.555**	-5.517**
C C	(0.894)	(-1.042)	(-1.965)	(-1.973)
Rebel Strength x Import: MCW		0.428*		0.312
		(1.887)		(1.326)
Rebel Strength x Import: SA			0.437**	0.358*
			(2.171)	(1.725)
Observations	415	415	415	415
Number of conflictid	66	66	66	66
Time Dummies	No	No	No	No

 Table A6. Difference GMM estimation on battle deaths / year. Note: GDP = Gross Domestic Product, MCW= Major

 Conventional Weapons; *** p<0.01, ** p<0.05, * p<0.10</td>

The two estimation procedures differ in how they treat unconditionally included arms transfers variables: Results obtained with difference GMM indicate that the import of MCW has a significant unconditional positive impact on the number of battle-related deaths. System GMM turns this around as imported MCW and Small Arms fail to reach conventional levels of significance in all models. Turning to the interaction of rebel strength and the two arms import variables, the coefficients of the interaction terms generally mirror these obtained

using a fixed effects set-up with a lagged dependent variable in both direction and significance. The constituent terms measuring imports to governments fighting weak insurgents are also mostly identical to the ones reported in the main results table. The only exception is that the effect of Small Arms imports obtained using the system GMM is insignificant.

	(A13)	(A14)	(A15)	(A16)
The Determinants	Unconditional	Interaction	Interaction	Both
Of Conflict Intensity		MCW	Small Arms	Interactions
Year of Conflict	0.003	0.007	0.005	0.008
	(0.264)	(0.597)	(0.451)	(0.667)
Population (LN)	-1.455	-1.594	-1.580	-1.662
	(-0.659)	(-0.737)	(-0.725)	(-0.768)
GDP (Lag, LN)	0.197	0.222	0.135	0.166
-	(0.594)	(0.685)	(0.411)	(0.510)
Polity	-0.108***	-0.096**	-0.110***	-0.101***
	(-2.731)	(-2.481)	(-2.817)	(-2.583)
Ethnically excluded	1.223	1.344	0.883	1.042
Population (%)	(1.464)	(1.643)	(1.063)	(1.258)
Import: Small Arms (LN)	0.029	0.029	0.015	0.017
	(0.890)	(0.882)	(0.461)	(0.527)
Import: MCW (LN)	0.183***	0.099	0.180***	0.116*
	(2.875)	(1.445)	(2.869)	(1.688)
Rebel Strength	0.880*	-1.342	-7.201***	-7.322***
	(1.724)	(-1.484)	(-2.735)	(-2.799)
Rebel Strength x Import: MCW		0.639***		0.488^{**}
		(2.945)		(2.163)
Rebel Strength x Import: SA			0.578***	0.465**
			(3.126)	(2.436)
Observations	415	415	415	415
Number of conflicts	66	66	66	66
Time Dummies	Yes	Yes	Yes	Yes

Table A7. Difference GMM estimation on battle deaths / year. Note: GDP = Gross Domestic Product, MCW= Major Conventional Weapons; *** p<0.01, ** p<0.05, * p<0.10

Turning to test statistics¹, our results appear generally valid as the Arellano-Bond test for autocorrelation in the idiosyncratic disturbance term consistently indicate only first-order correlation in differences – as could be expected (Roodman 2009: 119). Exceptions here are models A18, A22 and A24. Sargan tests for overidentifying restrictions also do not reject the null hypothesis of the models being correctly specified (Baum 2006: 201). Hence, we interpret the findings obtained using difference and system GMM estimators as broadly corroborating our previous results with the possible exception that the effect of Small Arms may be put somewhat into doubt by System GMM results.

¹ These are available from the authors upon request.

	(A17)	(A18)	(A19)	(A20)
The Determinants	Unconditional	Interaction	Interaction	Both
Of Conflict Intensity		MCW	Small Arms	Interactions
Year of Conflict	0.039***	0.039***	0.040***	0.040***
	(4.164)	(4.242)	(4.179)	(4.300)
Population (LN)	-0.651**	-0.617**	-0.605**	-0.547**
	(-2.467)	(-2.378)	(-2.229)	(-2.051)
GDP (Lag, LN)	0.188	0.188	0.128	0.108
-	(0.873)	(0.891)	(0.570)	(0.493)
Polity	0.087**	0.092***	0.083**	0.087**
	(2.517)	(2.708)	(2.327)	(2.514)
Ethnically excluded	1.259*	1.273*	1.537**	1.646**
Population (%)	(1.869)	(1.929)	(2.131)	(2.328)
Import: Small Arms (LN)	0.041	0.043	0.050	0.056*
	(1.267)	(1.366)	(1.501)	(1.714)
Import: MCW (LN)	0.092	0.043	0.098	0.039
-	(1.346)	(0.579)	(1.407)	(0.527)
Rebel Strength	0.708	-0.469	3.745	3.295
-	(1.409)	(-0.527)	(1.491)	(1.337)
Rebel Strength x Import: MCW		0.378		0.466*
		(1.587)		(1.882)
Rebel Strength x Import: SA			-0.217	-0.289
			(-1.235)	(-1.641)
Constant	8.248***	8.054***	8.233***	7.990***
	(5.918)	(5.874)	(5.805)	(5.740)
Observations	502	502	502	502
Number of conflictid	87	302 87	87	87
Time Dummies	No	No	No	No
Table A8 System GMM estimation on b				

Table A8. System GMM estimation on battle deaths / year. Note: GDP = Gross Domestic Product, MCW= Major Conventional Weapons; *** p<0.01, ** p<0.05, * p<0.10

	(A21)	(A22)	(A23)	(A24)
The Determinants	Unconditional	Interaction	Interaction	Both
Of Conflict Intensity		MCW	Small Arms	Interactions
Year of Conflict	0.040***	0.045***	0.040***	0.045***
	(4.413)	(4.991)	(4.452)	(4.988)
Population (LN)	-1.095***	-1.076***	-1.124***	-1.072***
	(-4.854)	(-4.893)	(-4.981)	(-4.814)
GDP (Lag, LN)	0.754***	0.774***	0.802***	0.767***
	(3.824)	(4.022)	(3.969)	(3.848)
Polity	0.037	0.040	0.039	0.039
	(1.221)	(1.338)	(1.301)	(1.323)
Ethnically excluded	1.009	0.868	0.824	0.893
Population (%)	(1.543)	(1.361)	(1.217)	(1.339)
Import: Small Arms (LN)	0.061*	0.052	0.053	0.053
	(1.840)	(1.600)	(1.570)	(1.585)
Import: MCW (LN)	0.039	-0.033	0.036	-0.033
	(0.612)	(-0.498)	(0.558)	(-0.501)
Rebel Strength	0.672	-1.733**	-1.489	-1.446
2	(1.376)	(-2.144)	(-0.626)	(-0.618)
Rebel Strength x Import: MCW		0.745***		0.753***
		(3.683)		(3.560)
Rebel Strength x Import: SA			0.153	-0.022
			(0.929)	(-0.131)
Constant	6.116***	6.051***	5.994***	6.068***
	(4.522)	(4.589)	(4.453)	(4.577)
Observations	502	502	502	502
Number of conflictid	87	87	87	87
Time Dummies	Yes	Yes	Yes	Yes

 Table A9. System GMM estimation on battle deaths / year. Note: GDP = Gross Domestic Product, MCW= Major Conventional Weapons; *** p<0.01, ** p<0.05, * p<0.10</td>

3. No controls

While it is standard to include control variables to avert omitted variable bias, this approach has also been criticized (Clarke 2005). In our case, controls decrease sample size due to missing observations and lags. We re-run our models while excluding all control variables. Results are presented in table A10 and mirror those obtained in our main specifications.

	(A25)	(A26)	(A27)	(A28)
The Determinants	Un-	Interaction	Interaction	Both
Of Conflict Intensity	conditional	MCW	Small Arms	Interactions
Import: Small Arms (LN)	0.023	0.024	0.009	0.017
	(0.854)	(0.929)	(0.335)	(0.638)
Import: MCW (LN)	0.103**	0.033	0.094**	0.041
-	(2.126)	(0.673)	(1.985)	(0.847)
Rebel Strength	0.926**	-1.563***	-5.186***	-4.251***
-	(2.501)	(-2.624)	(-3.306)	(-2.718)
Rebel Strength x Import: MCW		0.671***		0.547***
		(5.235)		(3.804)
Rebel Strength x Import: SA			0.421***	0.217*
			(4.005)	(1.858)
Constant	4.483***	4.820***	4.738***	4.889***
	(10.558)	(11.559)	(11.226)	(11.713)
Observations	515	515	515	515
R-squared	0.028	0.087	0.064	0.095
Number of conflicts	88	88	88	88

Table A10. OLS Estimations on battle deaths / year with conflict-fixed Effects. Note: GDP = Gross Domestic Product, MCW= Major Conventional Weapons; *** p<0.01, ** p<0.05, * p<0.10

4. Including Zero Trade Observations

In our main specifications, we log arms imports without adding 1 to import values, resulting in zero observations being set to missing in the logged import variables. This was done as zero reported imports may arise from two different sources. On the one hand, a country may genuinely not import any weapons in a given year even if this seems unlikely given that it is engaged in armed conflict. On the other hand, it may import weapons but neither itself nor the exporter may report this to any of the public databases used by SIPRI and NISAT to collect their datasets. Including zero observations should thus correspond to a substantially higher measurement error. Here, we investigate whether this approach affects our results. We thus add 1 to all import values before logging them, resulting in a substantially larger sample. To deal with the issue that cases with zero observed imports are special as they may be heterogeneous, we include dummy variables indicating such cases. We then re-run our main models, results are presented in table A11. There, the effect sizes of arms imports are somewhat smaller but their general positive effect on conflict intensity conditional on rebels being at parity remains statistically significant.

	(A29)	(A30)	(A31)	(A32)
The Determinants	Un-	Interaction	Interaction	Both
Of Conflict Intensity	conditional	MCW	Small Arms	Interactions
In Battle Deaths, lagged	0.369***	0.340***	0.363***	0.342***
	(8.903)	(8.144)	(8.799)	(8.166)
Year of Conflict	-0.025***	-0.026***	-0.026***	-0.026***
	(-3.513)	(-3.594)	(-3.664)	(-3.630)
Population (LN)	-0.227	-0.439	-0.260	-0.424
	(-0.378)	(-0.734)	(-0.434)	(-0.707)
GDP (Lag, LN)	-0.007	0.032	0.001	0.030
	(-0.035)	(0.153)	(0.005)	(0.143)
Polity	-0.043**	-0.038*	-0.039**	-0.037*
	(-2.186)	(-1.930)	(-1.978)	(-1.887)
Ethnically excluded	-0.035	-0.206	-0.133	-0.219
Population (%)	(-0.094)	(-0.551)	(-0.355)	(-0.585)
No observed Imports: MCW	0.337	0.330	0.345*	0.334
	(1.644)	(1.628)	(1.689)	(1.644)
No observed Imports: Small Arms	0.401	0.381	0.502	0.419
	(1.312)	(1.259)	(1.631)	(1.362)
Import: Small Arms (LN)	0.035	0.032	0.032	0.031
	(1.519)	(1.367)	(1.373)	(1.333)
Import: MCW (LN)	0.097*	0.083*	0.099**	0.086*
	(1.958)	(1.692)	(2.021)	(1.740)
Rebel Strength	0.493*	-0.099	-0.082	-0.226
		(-0.312)	(-0.227)	(-0.620)
Rebel Strength x Import: MCW		0.310***		0.271**
		(3.343)		(2.499)
Rebel Strength x Import: SA			0.067**	0.024
			(2.313)	(0.700)
Constant	5.378	7.511	5.712	7.358
	(1.113)	(1.558)	(1.187)	(1.524)
Observations	549	549	549	549
R-squared	0.215	0.233	0.224	0.234
Number of conflicts	75	75	75	75

 Table A11. OLS Estimations on battle deaths / year with conflict-fixed Effects. Note: GDP = Gross Domestic Product,

 MCW= Major Conventional Weapons; *** p<0.01, ** p<0.05, * p<0.10</td>

4. Lags and Imports summed over previous years

Arms imports may be expected to not only have an effect in the year they are delivered but their effect should remain over the following time period. In addition, Major Conventional Weapons may necessitate training before being put into action meaning that they may actually matter only after some time has passed after their delivery. We thus test how results change when arms import values are summed over t and the three preceding years (table A13). We also check what happens when MCW import values are lagged by one year (table A12) and when they are summed over t and the preceding five or ten years (table A14). This second test is impossible for Small Arms Imports as it decreases our sample size to a great extent due to the NISAT data being available only from 1992. In contrast, SIPRI's data on MCW imports

spans back to 1950. Results remain consistent with our expectation that arms imports increase conflict intensity when rebels have reached at least parity.

	(A33)	(A34)	(A35)	(A36)
The Determinants	Un-	Interaction	Interaction	Both
Of Conflict Intensity	conditional	MCW	Small Arms	Interactions
In Battle Deaths, lagged	0.429***	0.416***	0.421***	0.403***
	(9.280)	(8.942)	(9.296)	(8.875)
Year of Conflict	-0.028***	-0.028***	-0.027***	-0.026***
	(-4.077)	(-4.018)	(-3.989)	(-3.902)
Population (LN)	-0.623	-0.960	-0.794	-1.253*
-	(-0.860)	(-1.301)	(-1.118)	(-1.735)
GDP (Lag, LN)	0.096	0.160	0.127	0.213
	(0.407)	(0.672)	(0.549)	(0.921)
Polity	-0.036	-0.035	-0.038*	-0.038*
	(-1.549)	(-1.527)	(-1.692)	(-1.682)
Ethnically excluded	0.679	0.773	0.787	0.922
Population (%)	(0.881)	(1.007)	(1.042)	(1.231)
Import: Small Arms (LN)	0.026	0.033	0.009	0.017
-	(1.035)	(1.325)	(0.371)	(0.692)
Import: MCW (Lag, LN)	0.090**	0.076*	0.115***	0.100**
	(2.226)	(1.876)	(2.866)	(2.491)
Rebel Strength	0.816**	-0.609	-5.443***	-7.976***
	(2.198)	(-0.789)	(-3.344)	(-4.312)
Rebel Strength x Import: MCW (Lag)		0.321**		0.420***
		(2.103)		(2.790)
Rebel Strength x Import: SA			0.408***	0.451***
			(3.945)	(4.359)
Constant	8.240	11.239*	9.937*	14.042**
	(1.383)	(1.844)	(1.699)	(2.350)
Observations	414	414	414	414
R-squared	0.312	0.321	0.342	0.356
Number of conflicts	63	63	63	63

 Table A12. OLS Estimations on battle deaths / year with conflict-fixed Effects. Note: GDP = Gross Domestic Product,

 MCW= Major Conventional Weapons; *** p<0.01, ** p<0.05, * p<0.10</td>

	(A37)	(A38)	(A39)	(A40)
The Determinants	Un-	Interaction	Interaction	Both
Of Conflict Intensity	conditional	MCW	Small Arms	Interactions
In Battle Deaths, lagged	0.294***	0.282***	0.285***	0.281***
	(5.929)	(5.707)	(5.777)	(5.684)
Year of Conflict	-0.041***	-0.039***	-0.038***	-0.038***
	(-4.345)	(-4.190)	(-4.059)	(-4.047)
Population (LN)	-0.028	-0.373	-0.583	-0.618
-	(-0.034)	(-0.441)	(-0.676)	(-0.717)
GDP (Lag, LN)	0.131	0.187	0.231	0.234
	(0.514)	(0.734)	(0.904)	(0.914)
Polity	-0.089***	-0.089***	-0.088***	-0.089***
	(-3.687)	(-3.728)	(-3.703)	(-3.718)
Ethnically excluded	0.441	0.457	0.549	0.527
Population (%)	(0.683)	(0.714)	(0.856)	(0.821)
Import: Small Arms (LN, <i>t</i> and three before)	-0.090***	-0.088**	-0.093***	-0.091***
	(-2.616)	(-2.561)	(-2.731)	(-2.657)
Import: MCW (LN, <i>t</i> and three before)	0.061	0.043	0.067	0.055
	(0.861)	(0.611)	(0.956)	(0.775)
Rebel Strength	0.931**	-1.590	-10.245**	-8.395*
	(2.231)	(-1.342)	(-2.244)	(-1.726)
Rebel Strength x Import: MCW		0.420**		0.244
(<i>t</i> and three before)		(2.272)		(1.102)
Rebel Strength x Import: SA			0.636**	0.447
(<i>t</i> and three before)			(2.458)	(1.443)
Constant	4.158	7.438	9.117	9.551
	(0.593)	(1.044)	(1.257)	(1.315)
Observations	408	408	408	408
R-squared	0.253	0.264	0.266	0.268
Number of conflicts	57	57	57	57

 Table A13. OLS Estimations on battle deaths / year with conflict-fixed Effects. Note: GDP = Gross Domestic Product,

 MCW= Major Conventional Weapons; *** p<0.01, ** p<0.05, * p<0.10</td>

	(A 41)	(112)	(112)	(1 4 4)
The Determinents	(A41)	(A42)	(A43)	(A44)
The Determinants	<i>t</i> to <i>t</i> -5	t to $t-5$	<i>t</i> to <i>t</i> -10	<i>t</i> to <i>t</i> -10
Of Conflict Intensity	uncond.	Interaction	uncond.	Interaction
In Battle Deaths, lagged	0.402***	0.387***	0.421***	0.413***
	(9.781)	(9.433)	(10.527)	(10.276)
Year of Conflict	-0.011*	-0.011*	-0.012*	-0.012*
	(-1.659)	(-1.684)	(-1.835)	(-1.860)
Population (LN)	-0.622	-0.860	-0.675	-0.713
	(-1.141)	(-1.573)	(-1.298)	(-1.372)
GDP (Lag, LN)	0.053	0.107	0.106	0.122
-	(0.257)	(0.527)	(0.537)	(0.614)
Polity	-0.019	-0.021	-0.026	-0.031*
•	(-1.009)	(-1.162)	(-1.460)	(-1.729)
Ethnically excluded Population (%)	0.218	-0.221	0.272	0.189
	(0.527)	(-0.506)	(0.761)	(0.524)
Import: MCW (LN, t and three before)	0.028	-0.027	-0.081	-0.111
•	(0.443)	(-0.416)	(-1.178)	(-1.569)
Rebel Strength	0.419	-1.088*	0.253	-0.503
-	(1.457)	(-1.845)	(1.010)	(-0.970)
Rebel Strength x Import: MCW	. ,	0.292***		0.129*
(<i>t</i> and three before)		(2.920)		(1.664)
Constant	9.284**	11.782***	9.874**	10.402**
	(2.146)	(2.692)	(2.372)	(2.496)
	. ,		. ,	
Observations	563	563	581	581
R-squared	0.194	0.208	0.205	0.210
Number of conflictid	74	74	74	74
Table A14 OLS Estimations on battle deaths / year with conflict-fixed Effects Note: GDP – Gross Domestic Product				

Table A14. OLS Estimations on battle deaths / year with conflict-fixed Effects. Note: GDP = Gross Domestic Product, MCW= Major Conventional Weapons; *** p<0.01, ** p<0.05, * p<0.10

5. Robust Standard Errors

We have not previously tackled the possible issue of heteroskedasticity. To alleviate this concern, we use conflict-clustered standard errors in a further robustness test. This also further accounts for interdependencies over time inside one conflict. The results of the interaction models mirror those obtained using conventional standard errors as the interaction terms between arms imports and rebel strength remain highly significant and positive while the constituent terms measuring the effect of government arms imports where insurgents are weak do not reach conventional levels of significance.

	(A45)	(A46)	(A47)	(A48)
The Determinants	Un-	Interaction	Interaction	Both
Of Conflict Intensity	conditional	MCW	Small Arms	Interactions
In Battle Deaths, lagged	0.422***	0.389***	0.404***	0.385***
	(5.029)	(4.583)	(4.846)	(4.568)
Year of Conflict	-0.026**	-0.024*	-0.025**	-0.024*
	(-2.128)	(-1.940)	(-2.057)	(-1.920)
Population (LN)	-0.480	-1.056	-0.764	-1.107
	(-0.450)	(-1.122)	(-0.754)	(-1.147)
GDP (Lag, LN)	0.039	0.154	0.085	0.158
	(0.143)	(0.582)	(0.315)	(0.589)
Polity	-0.041	-0.032	-0.039	-0.033
	(-1.387)	(-1.108)	(-1.380)	(-1.142)
Ethnically excluded	1.158	0.787	0.481	0.471
Population (%)	(1.436)	(1.246)	(0.678)	(0.687)
Import: Small Arms (LN)	0.030	0.037	0.021	0.031
	(1.028)	(1.277)	(0.722)	(1.061)
Import: MCW (LN)	0.122*	0.056	0.113*	0.064
_	(1.797)	(1.002)	(1.854)	(1.133)
Rebel Strength	0.836	-1.622***	-4.765***	-4.355***
-	(1.248)	(-4.805)	(-3.000)	(-5.421)
Rebel Strength x Import: MCW		0.603***		0.485***
		(7.203)		(5.421)
Rebel Strength x Import: SA			0.373***	0.214***
			(3.081)	(3.498)
Constant	7.059	12.547*	10.103	13.219*
	(0.806)	(1.688)	(1.241)	(1.726)
Observations	405	405	405	405
R-squared	0.297	0.342	0.326	0.350
Number of conflicts	65	65	65	65
Table A15 OI S Estimations on battle deaths / year y				

Table A15. OLS Estimations on battle deaths / year with conflict-clustered standard errors and conflict-fixed Effects. Note: GDP = Gross Domestic Product, MCW = Major Conventional Weapons; *** p<0.01, ** p<0.05, * p<0.10

6. Military Quality

While *Rebel Strength: Equal or Higher* already measures insurgents' power vis-a-vis the government, we additionaly include a variable *Military Quality* measuring the quality of government forces as the ratio of military expenditures to military personnel. This has been done in previous studies of conflict intensity (e.g. Lacina, 2006) and offers more information on governemnts' military capabilities than a simple dummy. Data on military expenditures are sourced from SIPRI (2017) while military personnel figures come from the Correlates of War Project's National Material Capabilities Data, version 5.0 (Singer et al., 1972). *Military Quality* is logarithmized and lagged by one year. Results are presented in table A16 and corroborate our expectation that arms imports increase conflict intensity only when rebels achieve parity.

	(A49)	(A50)	(A51)	(A52)
The Determinants	Un-	Interaction	Interaction	Both
Of Conflict Intensity	conditional	MCW	Small Arms	Interactions
In Battle Deaths, lagged	0.415***	0.388***	0.388***	0.381***
	(8.635)	(8.037)	(8.128)	(7.916)
Year of Conflict	-0.021***	-0.021***	-0.021***	-0.021***
	(-2.988)	(-3.068)	(-3.086)	(-3.102)
Population (LN)	0.563	-0.018	0.274	0.042
-	(0.700)	(-0.022)	(0.346)	(0.052)
Military quality (Lag, LN)	-0.277**	-0.228*	-0.245*	-0.227*
	(-2.107)	(-1.738)	(-1.891)	(-1.743)
GDP (Lag, LN)	-0.270	-0.174	-0.228	-0.188
	(-0.970)	(-0.626)	(-0.832)	(-0.682)
Polity	-0.052**	-0.049*	-0.051**	-0.050*
	(-2.017)	(-1.919)	(-2.010)	(-1.958)
Ethnically excluded	1.287*	0.845	0.658	0.573
Population (%)	(1.792)	(1.165)	(0.905)	(0.785)
Import: Small Arms (LN)	0.053*	0.060**	0.042	0.048*
	(1.879)	(2.140)	(1.501)	(1.694)
Import: MCW (LN)	0.093*	0.069	0.090*	0.078
	(1.832)	(1.346)	(1.796)	(1.536)
Rebel Strength	1.216***	-1.274	-4.186***	-4.250***
	(2.880)	(-1.348)	(-2.649)	(-2.692)
Rebel Strength x Import: MCW		0.517***		0.264
		(2.935)		(1.286)
Rebel Strength x Import: SA			0.365***	0.284**
			(3.543)	(2.344)
Constant	-0.237	5.242	2.869	4.975
	(-0.035)	(0.759)	(0.430)	(0.725)
Observations	381	381	381	381
R-squared	0.327	0.345	0.353	0.357
Number of conflicts	57	57	57	57

Table A16. OLS Estimations on battle deaths / year with conflict-fixed Effects. Note: GDP = Gross Domestic Product, MCW= Major Conventional Weapons; *** p < 0.01, ** p < 0.05, * p < 0.10

7. Continuous Rebel Strength

The main analysis employs a dummy to measure whether rebels have at least achieved military parity with the government; this is based on an ordinal measure of rebel strength often used in the literature on intrastate conflict. However, some studies also propose a continuous measure of rebel strength, namely the estimated size of rebel troops divided by the number of governmental military personnel (see Wood 2010). Taking rebel troop estimates from the NSA data (Cunningham et al. 2009, 2013) and military personnel figures again from the Correlates of War Project, we replicate our main analysis using this measure instead of the rebel strength dummy. This has the added benefit of our results for strong rebels not only relying on the 10% of observations where rebels were coded as reaching at least parity. Results are presented in table A17 and indicate that the positive effect of arms imports on conflict intensity grows as rebels become stronger, thus further supporting our original findings. The interaction terms between Arms Imports and Rebel Strength are significant in

	(A53)	(A54)	(A55)	(A56)
The Determinants	Un-conditional	Interaction	Interaction	Both
Of Conflict Intensity		MCW	Small Arms	Interactions
In Battle Deaths, lagged	0.401***	0.405***	0.410***	0.411***
	(6.989)	(7.114)	(7.188)	(7.224)
Year of Conflict	-0.032***	-0.031***	-0.032***	-0.032***
	(-3.789)	(-3.742)	(-3.884)	(-3.816)
Population (LN)	-0.416	-0.496	-0.115	-0.254
	(-0.458)	(-0.552)	(-0.126)	(-0.279)
GDP (Lag, LN)	0.209	0.246	0.144	0.189
	(0.748)	(0.887)	(0.515)	(0.676)
Polity	-0.057**	-0.051*	-0.059**	-0.054**
	(-2.113)	(-1.918)	(-2.188)	(-2.010)
Ethnically excluded	0.987	1.057	1.662**	1.543*
Population (%)	(1.291)	(1.394)	(2.020)	(1.875)
Import: Small Arms (LN)	0.038	0.032	0.013	0.015
	(1.250)	(1.071)	(0.390)	(0.459)
Import: MCW (LN)	0.166***	0.103*	0.158***	0.112*
	(3.116)	(1.717)	(2.989)	(1.860)
Rebel Strength: Troop Share	1.798	-0.880	-4.024	-4.592
	(1.532)	(-0.524)	(-1.351)	(-1.536)
Rebel Strength: TS x Import: MCW		0.802**		0.618
		(2.209)		(1.617)
Rebel Strength: TS x Import: SA			0.420**	0.312
			(2.123)	(1.499)
Constant	4.059	4.896	1.711	2.960
	(0.530)	(0.644)	(0.223)	(0.385)
Observations	294	294	294	294
R-squared	0.304	0.319	0.318	0.325
Number of conflicts	55	55	55	55

models A54 and A55. While this is not the case in model A56, plotting the marginal effects in figure A2 indicates that the effect of arms imports is conditioned by rebel strength.

 Table A17. OLS Estimations on battle deaths / year with conflict-fixed Effects. Note: GDP = Gross Domestic Product, MCW= Major Conventional Weapons; *** p<0.01, ** p<0.05, * p<0.10</td>

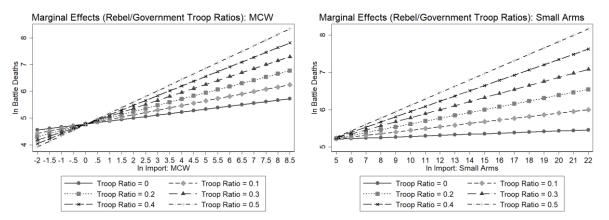


Figure A2: Marginal effects plots for the Interactions between *Rebel Strength: Troop Ratio* and *Import: MCW_t* (Left panel) and *Import: Small Arms_t* (Right panel) in Model A56.

8. Influential observations

We investigate whether influential observations influence our results using two approaches. First, we overlay the effects plot for model 4 from the main analysis with a scatter plot of arms imports and battle deaths. A visual inspection suggests that observations from conflicts 137, 174, and 209 may be highly influential. We thus re-estimate model 4 without those conflicts. Results are reported in models A57-60 and mirror those from our main analysis. Second, we use bootstrapping to check our results' dependence on specific observations, namely wild (cluster) bootstrapping as implemented in Stata by Roodman et al.'s (2019) *boottest* command. This is a post-estimation command, we run it after model 4 from the main analysis to (re)-test the Null hypotheses that the coefficients β_{RSxMCW} and β_{RSxSA} of the interaction terms *Rebel Strength x Import: MCW* and *Rebel Strength x Import: Small Arms* equal zero both separately and jointly. We variably cluster the bootstrapped standard errors on the conflict. Results for this wild (cluster) bootstrapping are reported in table A19 and provide further support to our initial findings.

	(A57)	(A58)	(A59)	(A60)
The Determinants	Un-conditional	Interaction	Interaction	Both
Of Conflict Intensity		MCW	Small Arms	Interactions
In Battle Deaths, lagged	0.397***	0.389***	0.390***	0.385***
	(8.268)	(8.222)	(8.174)	(8.151)
Year of Conflict	-0.023***	-0.023***	-0.024***	-0.024***
	(-3.369)	(-3.439)	(-3.440)	(-3.484)
Population (LN)	-1.401*	-1.292*	-1.338*	-1.257
	(-1.804)	(-1.688)	(-1.735)	(-1.647)
GDP (Lag, LN)	0.224	0.206	0.205	0.193
	(0.921)	(0.856)	(0.848)	(0.807)
Polity	-0.031	-0.030	-0.033	-0.031
	(-1.238)	(-1.192)	(-1.315)	(-1.254)
Ethnically excluded	1.112	0.778	0.653	0.469
Population (%)	(1.568)	(1.102)	(0.893)	(0.647)
Import: Small Arms (LN)	0.038	0.039	0.029	0.032
	(1.483)	(1.548)	(1.160)	(1.290)
Import: MCW (LN)	0.096**	0.057	0.099**	0.064
	(2.004)	(1.184)	(2.093)	(1.326)
Rebel Strength	-0.090	-1.709***	-3.813**	-4.331***
	(-0.199)	(-2.598)	(-2.345)	(-2.678)
Rebel Strength x Import: MCW		0.577***		0.514***
		(3.332)		(2.918)
Rebel Strength x Import: SA			0.267**	0.201*
			(2.382)	(1.773)
Constant	15.188**	14.510**	14.994**	14.438**
	(2.363)	(2.292)	(2.350)	(2.288)
Observations	397	397	397	397
R-squared	0.257	0.282	0.270	0.289
Number of conflicts	63	63	63	63

Table A18. OLS Estimations on battle deaths / year with conflict-fixed Effects. Note: GDP = Gross Domestic Product, MCW= Major Conventional Weapons; *** p<0.01, ** p<0.05, * p<0.10

h0: $\beta_{RSxMCW} = 0$ and $\beta_{RSxSA} = 0$	Rebel Strength x Import: MCW	Rebel Strength x Import: Small
		Arms
Separate test, no clustering	t(329) = 3.4814	t(329) = 1.9945
	Prob> t = 0.0000	Prob> t = 0.0080
Joint test, no clustering	F(2, 329) = 13.4336 Pr	rob > F = 0.0000
Separate test, clustering on conflict	t(64) = 4.9601	t(64) = 3.2002
	Prob> t = 0.0571	Prob> t = 0.1011
Joint test, clustering on conflict	F(2, 64) = 32.2983 Pi	rob > F = 0.0460

 Table A19. Results of Wald tests using wild (cluster) bootstrapping run after model 4 in the main analysis. Null imposed, 999 replications, Rademacher weights.

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