

Guillermo Kreiman and Juan Masullo, “Who Shot the Bullets? Exposure to Violence and Attitudes Toward Peace: Evidence from the 2016 Colombian Referendum.” *Latin American Politics and Society* 62, 4 (Winter 2020).

Supplementary Materials

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Additional Tables

Table A1 – Descriptive Statistics

Variable	N	Mean	Std. Dev	Min	Max
% Yes Referendum	1,117	52.60077	17.14791	10.43	100
(ln) FARC Attacks	996	-.1680068	1.671468	-3.135494	4.103721
(ln) Para/BACRIM. Attacks	1,031	-.537638	1.409221	-3.135494	5.095874
% Partic. Referendum	1,117	35.28815	8.332283	3.38	62.41
% Santos 2 nd Round 2014	1,117	46.59715	20.65418	5.959836	95.65218
Poverty Index	1,065	68.65382	16.07918	14.27179	100
(ln) Population	1,095	9.532494	1.059444	6.682772	15.65469
Rural Index	1,094	58.08148	23.65175	.1851246	100
Coca	1,093	.0005863	.0047209	0	.1187151
Oil	1,009	.1179386	.3226953	0	1
(ln) Elevation	1,009	6.411968	1.665436	.6931472	8.101678
Education Coverage	1,058	97.29155	18.55754	0	233.828
(ln) Exposure Total	1,121	-.1449498	1.478192	-3.135494	4.69334
(ln) Exposure Total per 1000	1,065	-2.721112	1.104303	-7.009632	.9948266
CERAC Strong	1,121	.0802855	.2718559	0	1
CERAC Persistent	1,121	.0392507	.1942774	0	1
(ln) Attacks Government	933	-.4517119	1.453971	-3.135494	5.119295
(ln) ELN Attacks	707	-.9624348	1.621237	-3.135494	3.576246
% Santos 1 st Round 2014	1,112	34.19157	18.98958	0	100
Land Inequality	953	.684857	.1118914	0	.981579
(ln) Area	1,063	10.38035	1.221364	7.313221	15.69763
Nat. Res. Royalties pc	1,095	.0248051	.1393667	0	2.904564
Gems	1,048	.0486641	.2152676	0	1
% Liberals 1958	832	66.7772	38.45945	0	100
% Liberals 1966	907	73.45768	23.52121	0	100

% Liberals 1974	951	50.8346	28.93294	0	99.87091
% Liberals 1986	995	51.48282	25.89293	.1655081	99.10847
% ANAPO 1966	907	24.11137	22.24633	0	100
% ANAPO 1974	951	7.551252	8.703659	0	61.75337
% UNO 1974	951	1.638465	4.693081	0	63.55685
% Unión Patriótica 1986	995	5.02046	11.35802	0	95.83778
% Communist Party 1986	995	.3552041	1.443927	0	38.84892
% Duque 2 nd Round 2018	1,121	63.82857	20.67748	4.694933	97.02352
(ln) FARC Attacks 2010-2012	1,121	.0356494	.1531994	-3.135494	1.714798
(ln) PARA/Bacrim Attacks 2010-2012	1,121	.0693136	.267415	-3.135494	4.043051
(ln) Distance Dept. Capital	1,009	4.58563	.8217077	1.609438	6.672033

Table A2 – OLS Exposure to Total Violence

	Model (1)	Model (2)
(ln) Exposure Total	-0.267 (0.345)	
(ln) Exposure Total 1000 pop.		-0.229 (0.344)
% Partic. Referendum	-0.0518 (0.0517)	-0.0524 (0.0516)
% Support Santos 2014	0.584*** (0.0231)	0.584*** (0.0231)
Poverty	0.0281 (0.0367)	0.0273 (0.0367)
(ln) Population	-0.708 (0.485)	-0.974** (0.393)
Rural Index	0.0863*** (0.0217)	0.0866*** (0.0217)
Coca	2.486** (1.024)	2.484** (1.024)
Oil	-1.741* (0.993)	-1.748* (0.993)
(ln) Elevation	0.250 (0.338)	0.250 (0.338)
Education Coverage	0.0197 (0.0180)	0.0197 (0.0180)
Department Fixed Effects	✓	✓
Constant	22.67*** (8.205)	24.61*** (7.610)
Observations	967	967
R^2	0.689	0.689
Adjusted R^2	0.678	0.678

Dependent Variable: % Yes 2016 Referendum. Standard errors in parentheses

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table A3 – OLS Exposure to Total Violence (Robustness)

	Model (1)
CERAC Strong	1.198 (1.449)
CERAC Persistent	2.561 (1.972)
% Partic. Referendum	-0.0563 (0.0516)
% Support Santos 2014	0.581*** (0.0230)
Poverty	0.0185 (0.0361)
(ln) Population	-1.249*** (0.412)
Rural Index	0.0880*** (0.0216)
Coca	2.287** (1.032)
Oil	-1.990** (0.993)
(ln) Elevation	0.228 (0.337)
Education Coverage	0.0165 (0.0178)
Department Fixed Effects	✓
Constant	26.60*** (7.620)
Observations	967
R^2	0.691
Adjusted R^2	0.679

Dependent Variable: % Yes 2016 Referendum. Standard errors in parentheses
* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table A4 – OLS Exposure to Paramilitaries/BACRIM

	Model (1)	Model (2)
(ln) Attacks FARC	1.142 *** (0.264)	0.978 *** (0.264)
(ln) Attacks Paramil.	-1.600 *** (0.427)	
(ln) Attacks BACRIM		-1.133 *** (0.438)
% Partic. Referendum	-0.0686 (0.0547)	-0.0722 (0.0553)
% Support Santos 2014	0.584 *** (0.0244)	0.580 *** (0.0247)
Poverty	-0.00537 (0.0402)	-0.0116 (0.0407)
(ln) Population	0.0136 (0.549)	-0.170 (0.563)
Rural Index	0.0833 *** (0.0229)	0.0884 *** (0.0230)
Coca	2.176 ** (1.036)	2.076 ** (1.041)
Oil	-1.645 (1.045)	-1.823 * (1.058)
(ln) Elevation	0.116 (0.357)	0.202 (0.366)
Education Coverage	0.0210 (0.0191)	0.0239 (0.0192)
Constant	16.51 * (9.579)	23.19 * (12.03)
Observations	857	841
R^2	0.701	0.695
Adjusted R^2	0.687	0.682

Standard errors in parentheses

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table A5 – Political Parties Presidential Elections

	Ideology	1958	1966	1974	1986
ANAPO	Left	✗	✓	✓	✗
Communist Party	Left	✗	✗	✗	✓
Unión Patriótica	Left	✗	✗	✗	✓
UNO	Left	✗	✗	✓	✗
Liberals	Center-Left	✓	✓	✓	✓
Christian Socio-Democrat	Center	✗	✗	✓	✗
Conservatives	Center-Right	✓	✗	✓	✓
Others	Various	✓	✓	✓	✓

Source: *Registraduría Nacional* and CEDE

Table A6 – Endogeneity Politics

	Model (1)	Model (2)	Model (3)	Model (4)	Model (5)	Model (6)	Model (7)	Model (8)	Model (9)
(ln) Attacks FARC	0.914*** (0.284)	1.009*** (0.274)	1.008*** (0.274)	1.052*** (0.269)	1.039*** (0.270)	1.065*** (0.271)	1.004*** (0.263)	0.965*** (0.270)	0.991*** (0.263)
(ln) Attacks Para/BACRIM	-1.179** (0.497)	-1.108** (0.476)	-1.122** (0.476)	-1.272*** (0.462)	-1.199*** (0.464)	-1.239*** (0.463)	-1.436*** (0.447)	-1.417*** (0.447)	-1.407*** (0.447)
% Liberals 1958	0.00885 (0.00973)								
% Liberals 1968		0.0432*** (0.0157)							
% ANAPO 1966			-	0.0490*** (0.0169)					
% Liberals 1974				0.0168 (0.0129)					
% ANAPO 1974					-0.0486 (0.0423)				
% UNO 1974						-0.0216 (0.0709)			
% Liberals 1986							0.0192 (0.0138)		
% UP 1986								0.0160 (0.0369)	
% Communist Party 1986									0.0299 (0.237)
Department Fixed Effects	✓	✓	✓	✓	✓	✓	✓	✓	✓
Rest of Controls	✓	✓	✓	✓	✓	✓	✓	✓	✓
Constant	26.52** (12.37)	27.92** (12.15)	32.03*** (12.19)	19.33* (10.04)	21.22** (10.04)	20.31** (10.02)	17.69 (11.79)	18.99 (11.77)	19.06 (11.77)
Observations	697	755	755	789	789	789	824	824	824
R ²	0.698	0.698	0.699	0.711	0.710	0.710	0.707	0.707	0.707
Adjusted R ²	0.681	0.683	0.683	0.696	0.696	0.696	0.694	0.693	0.693

Dependent Variable: % Yes 2016 Referendum. Standard errors in parentheses

* p < 0.10, ** p < 0.05, *** p < 0.01

Table A7 – Main Matching Model

	Model (1)	Model (2)
(ln) FARC Attacks	0.684** (0.343)	
(ln) Paramilitary/BACRIM Attacks		-0.770** (0.389)
Constant	54.196*** (1.598)	55.732*** (1.552)
Observations	802	836
R ²	0.0086	0.015
Adjusted R ²	0.0061	0.012

Dependent Variable: % Yes referendum 2016. Standard errors in parentheses

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table A8 – Matching Continuous Treatment FARC

	Model (1)	Model (2)	Model (3)	Model (4)	Model (5)	Model (6)
(ln) FARC Attacks	0.721** (0.342)	0.674** (0.343)	0.714** (0.342)	0.671* (0.347)	0.820** (0.350)	0.676** (0.343)
Constant	55.435*** (1.568)	52.755*** (1.561)	54.745*** (1.574)	50.414*** (1.566)	54.796*** (1.567)	53.507*** (1.568)
Observations	798	802	802	771	769	802
R ²	0.014	0.005	0.010	0.005	0.012	0.007
Adjusted R ²	0.011	0.003	0.008	0.003	0.009	0.004

Dependent Variable: % Yes Referendum 2016. Standard errors in parentheses

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Model 1: Variables of Table 2 as well as Santos 1st Round 2014.

Model 2: Variables of Table 2 as well as Attacks by ELN.

Model 3: Variables of Table 2 as well as other socio-demographic and natural resources variables (Gems and Population).

Model 4: Variables of Table 2 as well as variables on geographic conditions and state capacity (Area; Elevation; Education).

Model 5: Variables of Table 2 as well as paramilitary/BACRIM violence.

Model 6: Variables of Table 2 as well as dummy on paramilitary/BACRIM violence.

Table A9 – Matching Continuous Treatment Paramilitary/BACRIM

	Model (1)	Model (2)	Model (3)	Model (4)	Model (5)	Model (6)
(ln) Paramilitary/BACRIM Attacks	-0.692*	-0.680*	-0.666*	-0.651*	-0.448	-0.793**
	(0.389)	(0.392)	(0.390)	(0.390)	(0.420)	(0.390)
Constant	56.243*** (1.544)	54.159*** (1.583)	55.573*** (1.566)	545.194*** (1.542)	53.873*** (1.666)	55.056*** (1.551)
Observations	832	836	836	800	769	836
R ²	0.017	0.008	0.014	0.015	0.005	0.012
Adjusted R ²	0.014	0.006	0.011	0.012	0.003	0.009

Dependent Variable: % Yes Referendum 2016. Standard errors in parentheses

* p < 0.10, ** p < 0.05, *** p < 0.01

Model 1: Variables of Table 2 as well as Santos 1st Round 2014.

Model 2: Variables of Table 2 as well as Attacks by ELN.

Model 3: Variables of Table 2 as well as other socio-demographic and natural resources variables (Gems and Population).

Model 4: Variables of Table 2 as well as variables on geographic conditions and state capacity (Area; Elevation; Education).

Model 5: Variables of Table 2 as well as FARC violence.

Model 6: Variables of Table 2 as well as dummy on FARC violence.

Table A10 – Instrumental Variable Analysis

	First Stage (1)	Second Stage (2)	First Stage (3)	Second Stage (4)
(ln) Distance Dept. Capital	0.289*** (0.059)		0.213*** (0.061)	
(ln) FARC Attacks		10.343*** (2.838)		5.420** (2.451)
(ln) Para/BACRIM Attacks	✗	✗	0.614*** (0.056)	-4.103** (1.610)
Rest of Controls	✗	✗	✓	✓
Department FE	✓	✓	✓	✓
Observations	915	915	826	826
R ²	0.291	.	0.493	0.599

Dependent Variable: % Yes Referendum 2016. Standard errors in parentheses

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table A11 – Robustness Controls

	Model (1)	Model (2)	Model (3)	Model (4)	Model (5)	Model (6)	Model (7)
(ln) Attacks FARC	1.069*** (0.312)	1.102*** (0.357)	1.197*** (0.258)	1.033*** (0.261)	1.196*** (0.283)	1.050*** (0.263)	1.058*** (0.264)
(ln) Attacks Para/BACRIM	-1.412*** (0.484)	-1.595*** (0.592)	-1.502*** (0.435)	-1.553*** (0.427)	-1.322*** (0.445)	-1.312*** (0.444)	-1.323*** (0.446)
(ln) Attacks Gvt.		-11.02** (5.117)					
(ln) Attacks Gvt.*FARC		4.606** (1.873)					
(ln) Attacks ELN			-0.224 (0.350)				
% Santos 1 st Round 2014				0.276*** (0.0397)			
Land Inequality					-10.73*** (3.404)		
(ln) Area						-0.657 (0.491)	
Nat. Res. Royalt. pc							-4.357* (2.342)
Gems							0.0960 (1.487)
Rest of Controls	✓	✓	✓	✓	✓	✓	✓
Department FE	✓	✓	✓	✓	✓	✓	✓
Constant	11.35 (9.447)	-0.535 (13.04)	9.693 (9.441)	31.68*** (8.728)	24.92*** (9.453)	19.27** (9.591)	18.80* (9.612)
Observations	791	600	853	740	856	857	857
R ²	0.704	0.684	0.714	0.758	0.699	0.700	0.699
Adjusted R ²	0.689	0.663	0.701	0.746	0.686	0.686	0.685

Dependent Variable: % Yes 2016 Referendum. Standard errors in parentheses * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table A12 – Sensitivity Analysis

	Model (1)	Model (2)	Model (3)	Model (4)	Model (5)	Model (6)	Model (7)	Model (8)	Model (9)	Model (10)	Model (11)
(ln) Attacks FARC		0.624*** (0.240)	1.051*** (0.264)	1.679*** (0.342)	1.044*** (0.254)	1.050*** (0.263)	1.070*** (0.266)	1.087*** (0.264)	1.056*** (0.263)	1.095*** (0.258)	1.016*** (0.259)
(ln) Attacks Para/BACRIM	-0.710* (0.388)		-1.296*** (0.445)	-1.739*** (0.579)	-1.320*** (0.445)	-1.412*** (0.364)	-1.532*** (0.445)	-1.311*** (0.446)	-1.455*** (0.440)	-1.455*** (0.434)	-1.341*** (0.443)
% Partic. Referendum	-0.0642 (0.0533)	-0.0525 (0.0542)		-0.0174 (0.0714)	-0.0654 (0.0522)	-0.0675 (0.0548)	-0.0756 (0.0553)	-0.0691 (0.0550)	-0.0611 (0.0543)	-0.0546 (0.0542)	-0.0488 (0.0542)
% Support Santos 2014	0.582*** (0.0238)	0.593*** (0.0240)	0.584*** (0.0245)		0.585*** (0.0245)	0.585*** (0.0245)	0.582*** (0.0247)	0.590*** (0.0244)	0.583*** (0.0244)	0.585*** (0.0227)	0.590*** (0.0243)
Poverty	0.0289 (0.0374)	0.00641 (0.0395)	0.00777 (0.0384)	-0.0492 (0.0525)		-0.00429 (0.0389)	0.0734** (0.0341)	-0.00389 (0.0404)	-0.00571 (0.0399)	-0.000172 (0.0367)	-0.00579 (0.0393)
(ln) Population	-0.330 (0.527)	-0.929** (0.445)	-0.149 (0.555)	-0.265 (0.723)	-0.167 (0.536)		-0.481 (0.555)	-0.154 (0.557)	-0.154 (0.552)	-0.0828 (0.544)	-0.244 (0.550)
Rural Index	0.0779*** (0.0222)	0.0978*** (0.0227)	0.0862*** (0.0230)	0.0669** (0.0299)	0.0827*** (0.0193)	0.0863*** (0.0228)		0.0867*** (0.0230)	0.0838*** (0.0229)	0.0844*** (0.0220)	0.0840*** (0.0228)
Coca	2.428** (1.043)	2.183** (1.028)	2.131** (1.040)	4.541*** (1.346)	2.117** (1.037)	2.114** (1.038)	2.251** (1.047)		1.915* (1.029)	2.095** (1.032)	2.039** (1.035)
Oil	-1.659 (1.026)	-1.919* (1.025)	-1.733* (1.047)	-0.0114 (1.360)	-1.786* (1.046)	-1.775* (1.047)	-1.802* (1.055)	-1.510 (1.041)		-1.702 (1.045)	-1.700 (1.039)
(ln) Elevation	0.254 (0.343)	0.278 (0.354)	0.0841 (0.358)	-2.603*** (0.442)	0.141 (0.331)	0.126 (0.356)	0.419 (0.352)	0.0802 (0.359)	0.161 (0.355)		0.0929 (0.345)
Education Coverage	0.0202 (0.0186)	0.0207 (0.0187)	0.0189 (0.0191)	0.00460 (0.0249)	0.0204 (0.0189)	0.0206 (0.0190)	0.0176 (0.0193)	0.0172 (0.0191)	0.0187 (0.0190)	0.0158 (0.0184)	
Department Fixed Effects	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Constant	17.99** (9.095)	27.56** (11.62)	14.94 (9.104)	71.25*** (12.16)	19.24*** (7.226)	16.32** (6.598)	18.25* (9.675)	19.53** (8.794)	23.58** (11.93)	23.42** (11.43)	20.49** (8.796)
Observations	923	888	857	857	857	857	857	857	871	873	871
R ²	0.691	0.695	0.698	0.489	0.699	0.699	0.694	0.697	0.701	0.705	0.704
Adjusted R ²	0.679	0.683	0.685	0.467	0.686	0.686	0.681	0.684	0.687	0.692	0.691

Dependent Variable: % Yes 2016 Referendum. Standard errors in parentheses

* p < 0.10, ** p < 0.05, *** p < 0.01

Table A13 – 2018 Presidential Elections

	Model (1)
(ln) Attacks FARC	-0.827*** (0.275)
(ln) Attacks Para/BACRIM	0.957** (0.465)
% Partic. Referendum	-0.0963* (0.0573)
% Support Santos 2014	-0.734*** (0.0256)
Poverty	0.147*** (0.0421)
(ln) Population	-2.736*** (0.580)
Rural Index	-0.00753 (0.0240)
Coca	-1.224 (1.085)
Oil	0.0436 (1.093)
(ln) Elevation	-0.967*** (0.374)
Education Coverage	-0.00953 (0.0200)
Department Fixed Effects	✓
Constant	108.2*** (10.02)
Observations	857
R^2	0.798
Adjusted R^2	0.789

DV: % Support Iván Duque second round 2018 Presidential Elections.
Standard errors in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table A14 – 2010-2012 Attacks

	Model (1)
(ln) Attacks FARC	5.406** (2.140)
(ln) Attacks Para/BACRIM	-2.324* (1.392)
% Partic. Referendum	-0.0498 (0.0514)
% Support Santos 2014	0.575*** (0.0232)
Poverty	0.0174 (0.0361)
(ln) Population	-0.946** (0.394)
Rural Index	0.0829*** (0.0218)
Coca	2.264** (1.024)
Oil	-1.924* (0.989)
(ln) Elevation	0.0725 (0.350)
Education Coverage	0.0128 (0.0179)
Department Fixed Effects	✓
Constant	24.14*** (7.552)
Observations	967
R^2	0.692
Adjusted R^2	0.680

Dependent Variable: % Yes 2016 Referendum. Standard errors in parentheses
 * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Additional Figures

Figure A1 – Support for the “Yes” in the Colombian 2016 Referendum

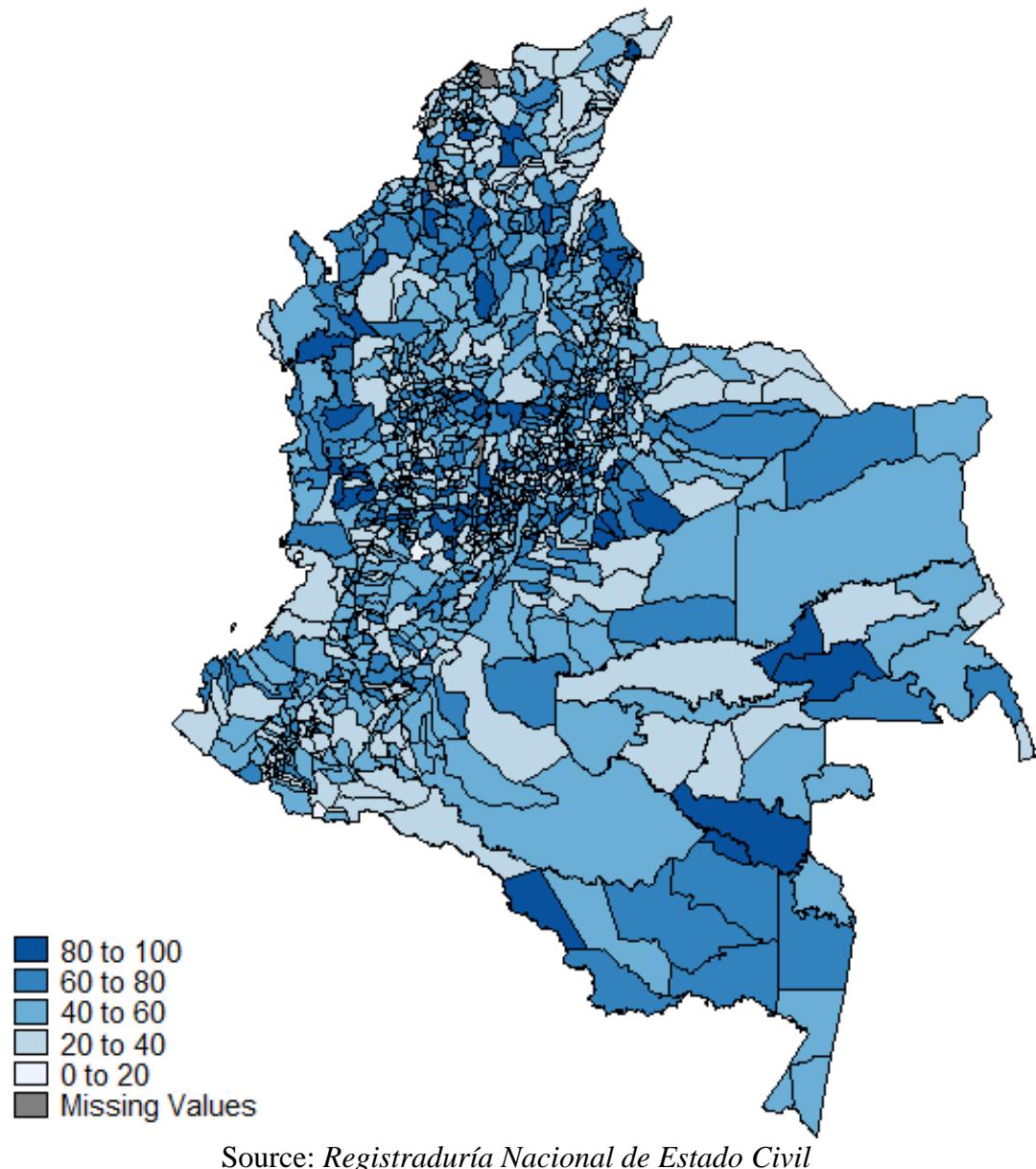


Figure A2 – FARC Presence 2015



Source: International Crisis Group (2016)

Figure A3 – Margins FARC and Paramilitaries/BACRIM

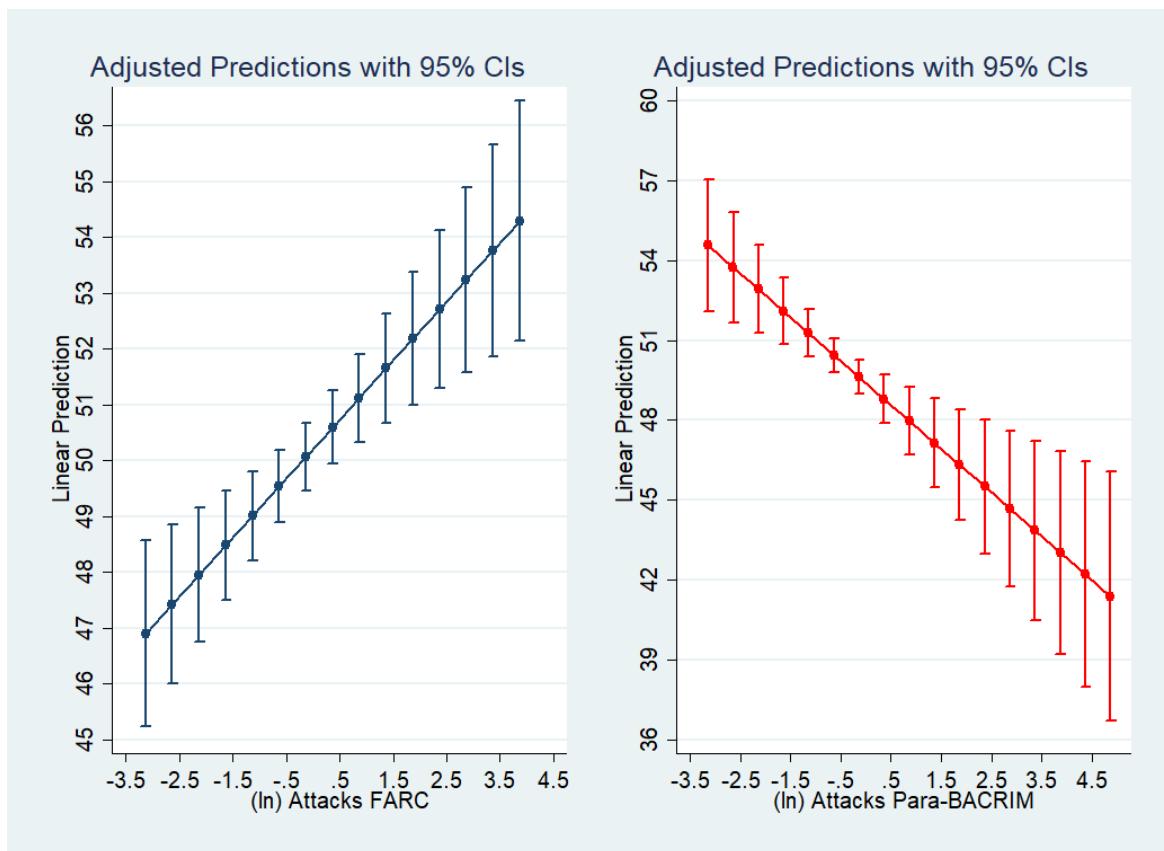


Figure A4 – Dose Response Function FARC

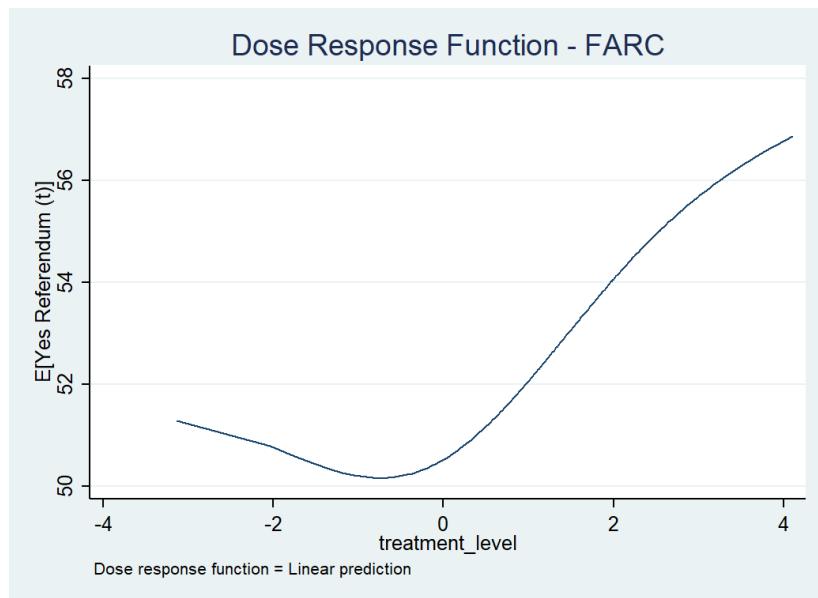


Figure A5 – Dose Response Function Paramilitaries/BACRIM

