

AND THE HEAT GOES ON: POLICE REPRESSION AND THE MODALITIES OF POWER ONLINE APPENDIX

1. EXPONENTIAL DECAY FORMULA

In mathematics, exponential decay describes the process of reducing an amount by a consistent percentage rate over a period of time. It is typically expressed by the formula $y = a(1 - b)^t$ wherein y is the final amount, a is the original amount, b is the decay factor, and t is the amount of time that has passed. The exponential decay formula is useful in a variety of real world applications, most notably for tracking inventory that's used regularly in the same quantity (like food for a school cafeteria) and it is especially useful in its ability to quickly assess the long-term cost of use of a product over time. To adapt it to our study, we provide a starting amount y_0 and an end amount y_f (zero in our case) at a rate α , and the exponential decay is specified as $e^{-\alpha t}$. The decay rate is determined by the inverse road distance to the capital city for each municipality. The formula can be expressed as the following:

$$y(t) = y_f + (y_0 - y_f)e^{-\alpha t}$$

Table A.1. Statistical models

	Model 1	Model 2
Earthquake Fault Zone	0.8765*** (0.0527)	0.8765*** (0.0527)
Time		-0.0113*** (0.0016)
Time ²		-0.0196*** (0.0025)
Time ³		0.0129*** (0.0017)
R ²	0.7682	0.7686
Adj. R ²	0.7682	0.7685
Num. obs.	27216	27216
F statistic	90205.6051	22592.2279
RMSE	0.4814	0.4811

*** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$. Standard Error Clustered at the Municipal Level.

Table A.2. IV Results (2SLS): Police Repression

	2SLS	2SLS	2SLS	S-2SLS	S-2SLS
Infrastructural Damage	0.0033*** (0.0013)	0.0027** (0.0013)	0.0027** (0.0013)	0.0027** (0.0013)	0.0028** (0.0013)
Overt Challenges	0.1930*** (0.0226)	0.1909*** (0.0215)	0.1896*** (0.0215)	0.1899*** (0.0215)	0.1896*** (0.0215)
Mobilization Activities	0.0361* (0.0210)	0.0355* (0.0208)	0.0354* (0.0207)	0.0354* (0.0207)	0.0354* (0.0207)
Campaign Activities	0.0245*** (0.0027)	0.0236*** (0.0027)	0.0236*** (0.0027)	0.0236*** (0.0027)	0.0236*** (0.0027)
Insurgent Violence	-0.0884*** (0.0231)	-0.0889*** (0.0220)	-0.0881*** (0.0220)	-0.0882*** (0.0220)	-0.0882*** (0.0220)
Ln Population	0.0076*** (0.0017)	0.0071*** (0.0016)	0.0071*** (0.0016)	0.0071*** (0.0016)	0.0071*** (0.0016)
HQ Location		0.0051*** (0.0016)	0.0051*** (0.0016)	0.0051*** (0.0016)	0.0051*** (0.0016)
HQ Distance		0.0025*** (0.0009)	0.0022** (0.0009)	0.0022** (0.0009)	0.0023** (0.0009)
Democratic Inclusion		-0.0149*** (0.0017)	-0.0128*** (0.0016)	-0.0132*** (0.0018)	-0.0095*** (0.0029)
Spatial Lag			0.0053*** (0.0014)	0.0043** (0.0018)	0.0037** (0.0018)
Time					-0.0564*** (0.0106)
Time ²					0.1323*** (0.0274)
Time ³					-0.0725*** (0.0177)
R ²	0.4964	0.5053	0.5061	0.5061	0.5068
Adj. R ²	0.4963	0.5051	0.5059	0.5059	0.5066
Num. obs.	27216	27216	27216	27216	27216
F statistic	155.1843	152.8317	139.6139	140.5551	133.2011
RMSE	0.1177	0.1166	0.1165	0.1166	0.1165
N Clusters	324	324	324	324	324

*** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$. Standard Error Clustered at the Municipal Level.

Table A.3. IV Results (2SLS): Police Repression (Year FE)

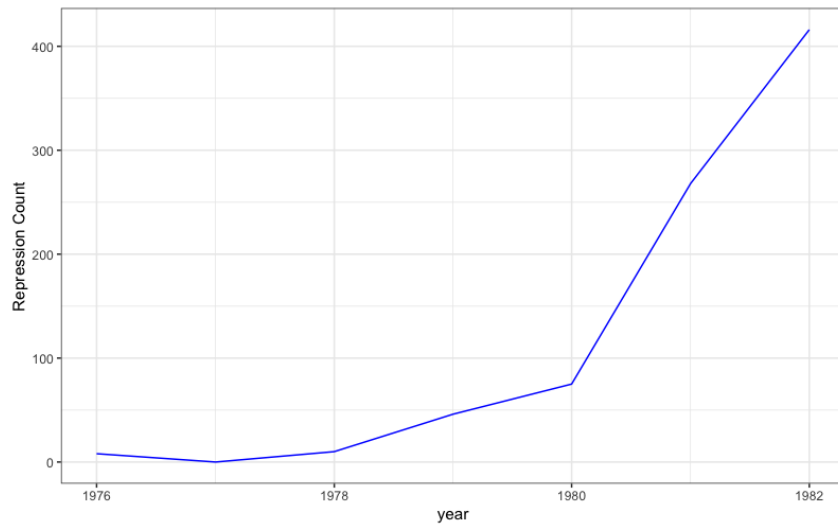
	2SLS	2SLS	2SLS	S-2SLS
Infrastructural Damage	0.0033** (0.0013)	0.0027** (0.0013)	0.0027** (0.0013)	0.0028** (0.0013)
Overt Challenges	0.1925*** (0.0220)	0.1910*** (0.0216)	0.1900*** (0.0217)	0.1902*** (0.0217)
Mobilization Activities	0.0356* (0.0207)	0.0354* (0.0207)	0.0354* (0.0207)	0.0354* (0.0207)
Campaign Activities	0.0237*** (0.0027)	0.0235*** (0.0027)	0.0235*** (0.0027)	0.0235*** (0.0027)
Insurgent Violence	-0.0910*** (0.0225)	-0.0896*** (0.0222)	-0.0888*** (0.0222)	-0.0890*** (0.0222)
Ln Population	0.0079*** (0.0017)	0.0072*** (0.0016)	0.0072*** (0.0016)	0.0072*** (0.0016)
HQ Location		0.0051*** (0.0016)	0.0051*** (0.0016)	0.0051*** (0.0016)
HQ Distance		0.0025*** (0.0009)	0.0023** (0.0009)	0.0023*** (0.0009)
Spatial Lag			0.0043*** (0.0013)	0.0031* (0.0018)
Year FE	Yes	Yes	Yes	Yes
R ²	0.5057	0.5067	0.5073	0.5072
Adj. R ²	0.5055	0.5065	0.5070	0.5070
Num. obs.	27216	27216	27216	27216
RMSE	0.1166	0.1165	0.1164	0.1164
N Clusters	324	324	324	324

*** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$. Standard Error Clustered at the Municipal Level.

Table A.4. IV Results (2SLS): Police Repression (Interactive Effect)

	2SLS	2SLS	2SLS	S-2SLS
Dissent x Infrastructural Damage	0.0413 (0.2204)	0.0336 (0.4990)	0.0510 (0.7517)	0.0147** (0.0064)
Infrastructural Damage	-0.0019 (0.0106)	-0.0015 (0.0231)	-0.0023 (0.0347)	-0.0006** (0.0003)
Dissent	0.0130 (0.9871)	0.0423 (2.1968)	-0.0350 (3.3063)	0.1239* (0.0708)
Ln Population	0.0001 (0.0657)	-0.0023 (0.2046)	-0.0095 (0.3075)	0.0053 (0.0032)
HQ Location		0.0462 (0.3213)	0.0572 (0.4843)	0.0338*** (0.0125)
HQ Distance		-0.0099 (0.3908)	-0.0266 (0.5780)	0.0010 (0.0080)
Democratic Inclusion		-0.0102 (0.0901)	-0.0046 (0.1277)	-0.0104*** (0.0019)
Spatial Lag			0.0931 (0.2986)	0.1202*** (0.0398)
R ²	-2.4621	-1.3878	-4.1459	0.1684
Adj. R ²	-2.4626	-1.3884	-4.1474	0.1681
Num. obs.	27216	27216	27216	27216
F statistic	8.8399	17.0962	10.1614	39.0547
RMSE	0.3085	0.2563	0.3762	0.1512
N Clusters	324	324	324	324

*** $p < 0.01$; ** $p < 0.05$; * $p < 0.1$. Standard Error Clustered at the Municipal Level.

Figure A.1. The number of Police Violence Events Over Time**Figure A.2.** The Report on Types of Earthquake Damage

Damage Estimates Provided the Guatemalan Government by GSNCEP, March 1976

Sector	Units Lost or Damaged	Estimated Costs (U.S.\$ Millions)	% of the Damaged in the Affected Area
Housing Urban/Rural	117,117/141,362	600.4	41/44
Household Furnishings	-	55.8	-
Hospitals/No. of Beds	15/4775	52.6	61
Health Centers/Posts	28/55	4.6	80
Schools/No. of Students Affected	1214/243,640	50.6	59/-
Welfare and Community Centers	62	10.6	44
Municipal Potable Water & Sewage Systems	242 Rural - 74 Urban	9.8	> 60 < 80*
Public Buildings	133	15.0	> 40 < 60*
Agricultural Losses (grains)	436,500 quintales (1 Quintal=100 pounds)	5.4	Approx. 5 (corn) 10 (other)
Highways & Roads	400 kilometers	48.4	> 20 < 30*
Railroads	60 kilometers	1.3	20
Seaport & Infrastructure	2	19.7	-
Guatemala City Airport	1	0.4	> 5 < 10*
Electric Plants	5	1.2	-
Communication Systems	Hundreds	6.8	-
Agricultural Infrastructure	Mainly Irrigation Channels	2.8	-
Poultry Systems	Dozens	3.3	-
Industrial Installations	713 (light damage)	18.9	57
Handcraft Industries	49,980 workers	4.1 (equipment losses)	-
Small Businesses	Hundreds	5.7	-
Hotel Bedrooms and Offices	489	16.9	40
Archaeological, Colonial and Other Cultural Patrimony	Hundreds	31.4	Approx. 80
Urban Services - Streets, Pavement and Other	Hundreds	26.3	> 40 < 60*
Municipal Services & Other Properties	Hundreds	19.0	> 30 < 50*
TOTAL		1,021.0	

*Estimated by L. Ferraté