Regime types and terrorism

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Introduction

- **Regime types have opposing influences on terrorism**
  - **Encourage terrorism by facilitating its practice in democracies through freedoms and constraints on the executive branch**
  - **Discourage terrorism by allowing for participation and voices to be heard**
  - **Regimes that value constituents' lives and property will act to limit attacks**
- **Literature results are rather mixed**

Purposes

- **The paper provides a game-theoretic model that captures strategic, political access, and other influences**

- **This model suggests that these opposing drivers give rise to an inverted U-shaped relationship between regime type and terrorism wherein some middle range of anocracy is most conducive to terrorism.**
  - **Regime type is a normalized Polity 2 score that varies from 0 (full autocracy) to 1 (full democracy).**

- **Apply myriad empirical tests – e.g., random-effects panel, cross-sectional, country fixed-effects panels, and instrumental variable approach – to establish that regime type has an extremely robust inverted U-shaped relationship to terrorism.**

- **Apply to domestic and transnational terrorism – venue or perpetrator origin**

- **Break regime into components – political participation and executive constraints. Also holds for political rights.**

- **Investigate influence of foreign policy variables (i.e., US alliance, Intervention, and International Crisis)**

Brief Literature Review

- **Strategic school argues that democracies facilitate terrorism by reducing its marginal cost to perpetrators by allowing freedom of association, freedom of movement, protection of civil liberties, access to potential targets, and rights to due process (Eyerman, 1998; Schmid, 1992; Wilkinson, 1986). This implies that democracy is a positive influence on terrorism.**

- **Political access school views democracies as best able to assuage grievances by fostering greater political participation by a wide segment of society (Eyerman, 1998; Li, 2005). This implies democracy is a negative influence on terrorism.**

- **Protection of constituents' right in liberal democracies will be a negative terrorism. Strong counterterrorism actions will be a negative influence on terrorism in autocracies.**

- **Same influences on**
  - **Domestic and transnational terrorism**
  - **Venue country and perpetrators' home country**

Literature continue

- **Empirical literature is mixed**
  - **Positive linear relationship between democracy and terrorism (e.g., Chenoweth, 2010; Dreher and Fischer, 2010; Eubank and Weinberg, 1994; Lai, 2007; Li and Schaub, 2004; Piazza, 2007, 2008; San-Akca, 2014).**
  - **Negative linear relationship between democracy and terrorism (e.g., Eyerman, 1998; Hamilton and Hamilton, 1983; Ross, 1993).**
  - **No relationship (e.g., Gassebner and Luechinger, 2011; Krueger and Laitin, 2008; Savun and Phillips, 2009).**

- **Literature**
  - **Panels do not include country fixed effects – key democracy variable is insignificant for fixed effects.**
  - **Linear relationship**
  - **Many articles tests for the pre-1998 period**

Literature Continue 2

- **Alternative measures for democracy – e.g., Freedom House measures**

- **Alternative forms of autocracy**
  - **Not a monolithic structure**
  - **Autocracies with more features of democracies and more audience costs should have more terrorism.**

- **Savun and Phillips (2009)**
  - **Democracy is no longer a determinant of transnational terrorism when foreign policy variables are included. A country's foreign policy, and not its democratic institutions, caused a country to attract terrorist attacks**

Theory

- **Currently no model captures the theoretic arguments.**

- **Two-player (terrorist group and targeted government) game with both players moving simultaneously.**

Terrorists:

$$\max_a \left[u(a,\delta) - c(a,e,\delta) \right]$$

utility increases at a diminishing rate

democratic principles denoted by δ, so that $u_{a\delta} < 0$

costs increase at an increasing rate with attacks, *a*, and counterterrorism, *e*.

$c_{ae} > 0$ and $c_{a\delta} < 0$ – producing freedoms and executive constraints foster a more favorable attack environment

FOC: $u_a - c_a = 0 \Rightarrow BR^T = a(e)$

$$\frac{\partial BR^T}{\partial e} = \frac{c_{ae}}{u_{aa} - c_{aa}} < 0$$ **negative-sloped reaction path.**

Theory 2

- $\frac{\partial BR^T}{\partial \delta}$ **may be positive or negative**
  - **If strategic school is the driving force, then shift is to the right and upwards**
  - **If political access influence dominates, the shift to the left and down**

- **Targeted government's problem**

$$\min_e \left[\delta l(e,a) + C(e) \right]$$

***l* denotes government's perceived loss from terrorist attacks. These losses increase at an increasing rate with attacks.**

$l_e < 0$, $l_{ee} > 0$, and $l_{ea} < 0$, $C' > 0$, and $C'' > 0$

FOC: $\delta l_e + C' = 0$

$$\frac{\partial BR^G}{\partial a} = -\frac{\delta l_{ea}}{\delta l_{ee} + C''} > 0$$

Theory 3

- $\frac{\partial BR^G}{\partial \delta} > 0$ **greater democratic values implies more counterterrorism.**
- **Explain Figure 1 – Nash equilibrium and changes in** δ
- **With full autocracy, there is little terrorism as governments respond with strong countermeasures.**
- **With full democracy, political access school and protection of lives and property dominate so that there should be little terrorism.**
- **Most terrorism where strategic school dominants political access and poor protection of lives and properties as in anocracies.**

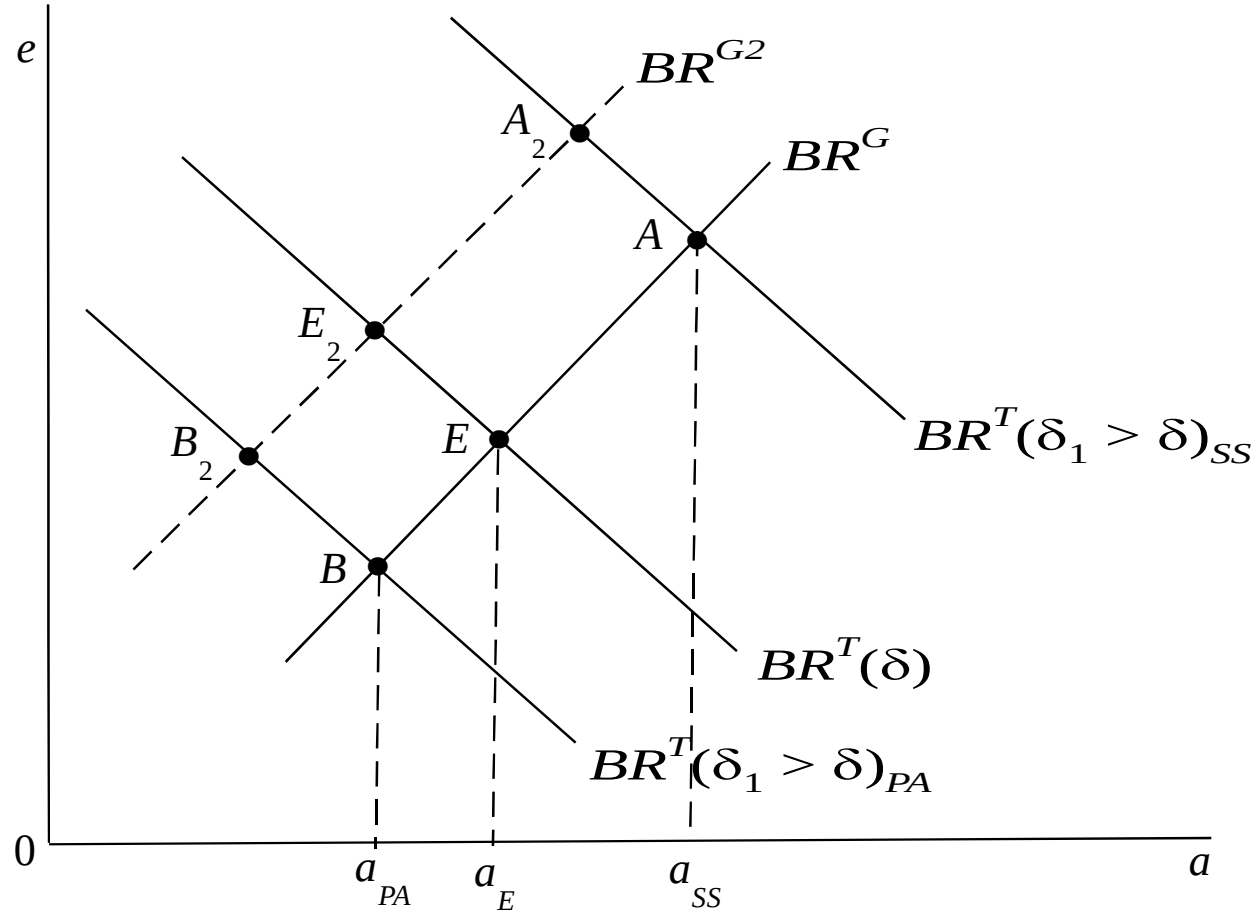

Figure 1. Comparative statics

Empirical

- **Data**
  - **Panel consisting 159 countries for nine time periods: 1970–1974, 1975–1979, 1980–1984, 1985–1989, 1990–1994, 1995–1999, 2000–2004, 2005–2009, and 2010–2012. Explanatory variables are averaged within each period.**
  - **Four measures of terrorism: total counts of terrorist attacks for a country in a 5-year period**
    - **Domestic and transnational terrorism from GTD**
    - **ITERATE transnational terrorism by venue**
    - **ITERATE transnational terrorism by perpetrator country**
  - **Alternative measures of political regimes**
    - **Polity 2, Freedom House Political Rights, Vanhanen political participation, Executive constraint.**
  - **Other controls**

Methods

- **Use Poisson and negative binomial**

- **Use a linear and square term for normalized Polity 2**

Results

- **Table 1 give Random-effects negative binomial regressions**
  - **Regime terms**
  - **US alliance**
  - **International Crisis**
  - **Civil War**
  - **Log Pop.**

Table 1. Random-effects negative binomial regressions

	GTD Dom	*GTD Trans*	*ITERATE*	*ITER Nat.*
Polity2	**6.568*** **	**5.149*** **	**3.896*** **	**3.878*** **
	(1.229)	**(1.174)**	**(0.995)**	**(1.027)**
Polity2 Sqrd	**–5.415*** **	**–4.120*** **	**–3.223*** **	**–3.521*** **
	(1.038)	**(1.031)**	**(0.860)**	**(0.910)**
U.S. Alliance	**0.395**	**0.583** **	**0.565***	**0.632** **
	(0.246)	**(0.271)**	**(0.320)**	**(0.303)**
Intervention	**–0.038**	**–0.113**	**–0.086**	**0.051**
	(0.144)	**(0.134)**	**(0.124)**	**(0.149)**
International Crisis	**0.513*** **	**0.395*** **	**0.115**	**0.150**
	(0.140)	**(0.139)**	**(0.102)**	**(0.158)**
Durable	**0.002**	**0.005**	**0.001**	**0.003**
	(0.003)	**(0.004)**	**(0.003)**	**(0.004)**
Civil War	**0.189***	**0.218*** **	**0.159*** **	**0.250*** **
	(0.102)	**(0.083)**	**(0.060)**	**(0.082)**
Discriminated POP	**0.458**	**0.469**	**0.611**	**1.257** **
	(0.527)	**(0.489)**	**(0.397)**	**(0.510)**
log(GDP/POP)	**0.077**	**–0.003**	**0.019**	**0.046**
	(0.092)	**(0.113)**	**(0.093)**	**(0.121)**
log(POP)	**0.109**	**0.257*** **	**0.206** **	**0.138**
	(0.090)	**(0.076)**	**(0.087)**	**(0.110)**

National Capability	**1.766**	**–7.724**	**3.930**	**3.026**
	(5.304)	**(6.115)**	**(4.958)**	**(9.677)**
Econ. Globalization	**0.000**	**0.001**	**0.004**	**–0.017****
	(0.005)	**(0.007)**	**(0.007)**	**(0.008)**
Polit. Globalization	**0.007**	**0.009***	**0.010***	**0.008**
	(0.005)	**(0.006)**	**(0.006)**	**(0.006)**
E. Fractionalization	**–0.133**	**–0.043**	**0.220**	**0.362**
	(0.297)	**(0.268)**	**(0.303)**	**(0.355)**
Africa	**–0.274**	**–0.578***	**–0.524***	**–1.422*****
	(0.259)	**(0.310)**	**(0.268)**	**(0.363)**
America	**–0.269**	**–0.422**	**–0.310**	**–0.763*****
	(0.317)	**(0.307)**	**(0.279)**	**(0.289)**
MENA	**0.124**	**0.556****	**1.064*****	**0.480**
	(0.295)	**(0.274)**	**(0.253)**	**(0.325)**
Asia	**–0.350**	**–0.280**	**–0.233**	**–1.016****
	(0.336)	**(0.341)**	**(0.309)**	**(0.425)**
Time Effects	**Yes**	**Yes**	**Yes**	**Yes**
NT	**892**	**892**	**892**	**892**
LR test vs. pooled	**383.67**	**196.37**	**225.25**	**173.21**
p-value	**0.000**	**0.000**	**0.000**	**0.000**

Result 2

- **Table 2 fixed-effects negative binomial**
  - **Regime effect is inverted U-shaped**
  - **Intervention/foreign policy variables not really important**
  - **Civil War important**
  - **Log GDP per capita**

- **Figure 2**

Table 2. HHG's fixed-effects negative binomial regressions

	GTD Dom	GTD Trans	ITERATE	ITER Nat.	GTD Dom	GTD Trans	ITERATE	ITER Nat.
Polity2	5.641***	4.495***	3.173***	3.251***	5.891***	4.687***	2.990***	2.891**
	(0.888)	(0.895)	(0.952)	(1.085)	(1.055)	(1.006)	(0.967)	(1.234)
Polity2 Sqrd	–4.655***	–3.679***	–2.644***	–2.987***	–4.930***	–3.682***	–2.411***	–2.582**
	(0.815)	(0.824)	(0.900)	(0.982)	(0.966)	(0.854)	(0.809)	(1.066)
U.S. Alliance					0.080	–0.158	–0.181	–0.176
					(0.170)	(0.249)	(0.286)	(0.291)
Intervention					–0.019	–0.026	0.007	0.139
					(0.110)	(0.099)	(0.124)	(0.159)
International Crisis					0.479***	0.294*	0.103	0.156
					(0.136)	(0.166)	(0.103)	(0.138)
Durable	0.001	–0.004	–0.004	–0.003	0.000	0.000	–0.004	–0.001
	(0.002)	(0.003)	(0.003)	(0.003)	(0.003)	(0.005)	(0.004)	(0.005)
Civil War	0.196**	0.196***	0.126**	0.186**	0.160*	0.183**	0.116*	0.190**
	(0.084)	(0.061)	(0.050)	(0.084)	(0.092)	(0.078)	(0.068)	(0.095)
Discriminated POP	0.131	–0.217	0.186	0.476	0.245	–0.049	0.370	0.702
	(0.413)	(0.560)	(0.365)	(0.507)	(0.528)	(0.653)	(0.684)	(0.833)
log(GDP/POP)	0.287***	0.282***	0.258***	0.219**	0.244**	0.272***	0.254**	0.345***
	(0.066)	(0.071)	(0.077)	(0.086)	(0.109)	(0.102)	(0.101)	(0.119)
log(POP)	0.084	0.112	0.243***	0.171*	–0.002	0.127	0.165	0.026
	(0.055)	(0.069)	(0.076)	(0.098)	(0.096)	(0.109)	(0.135)	(0.143)
National Capability					1.572	–10.332	1.516	–3.241
					(8.421)	(8.885)	(10.095)	(6.846)
Econ. Globalization					–0.001	–0.003	–0.002	–0.024**
					(0.007)	(0.008)	(0.007)	(0.010)
Polit. Globalization					0.008	0.009	0.004	0.008
					(0.006)	(0.007)	(0.006)	(0.008)
Time Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
NT	1050	1005	1023	934	877	835	847	774

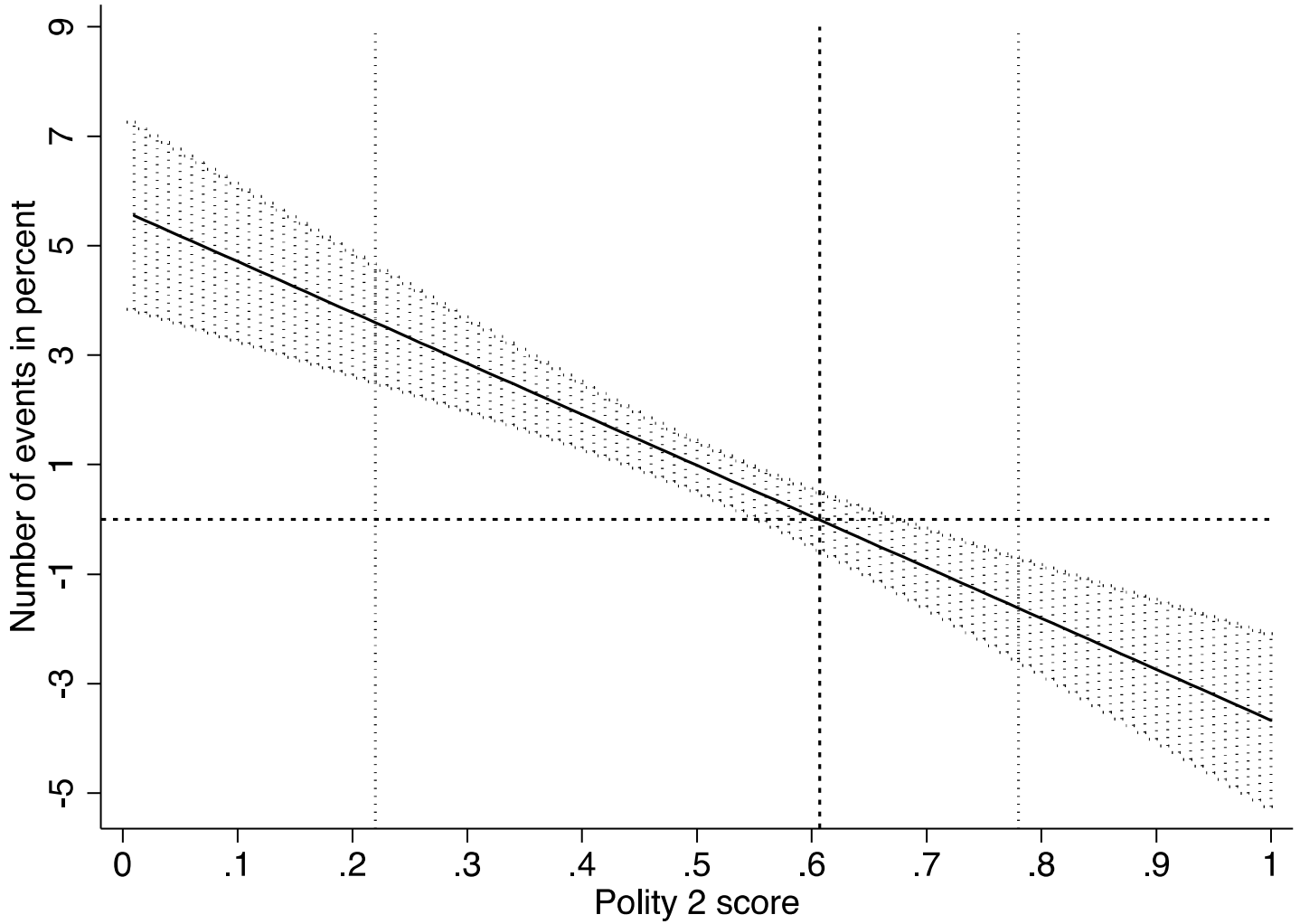

Figure 2. Semielasticity of GTD Dom with respect to Polity 2 (95% CIs)

Results 3

- **Table 3 – how foreign policy variables' influence disappears when we use fixed effect (FENB) rather than pooled NB.**

- **Regime inverted U-shaped relationship remains**

Robustness

- **Table 5 – Number of casualties**
  - **UFENB is unconditional fixed-effects negative binomial**
  - **PFE is Poisson fixed-effects estimator**

Table 3. Robustness of foreign policy measures to alternative specifications

	1970-2001 (Annual)				*1970-2005 (Annual)*		*1970-2009 (5-yr av.)*	
	PNB	***PNB***	***FENB***	***FENB***	***PNB***	***FENB***	***PNB***	***FENB***
Polity2	0.711***	2.822**	0.664***	1.982**	2.487*	2.436***	2.931	3.072***
	(0.251)	(1.357)	(0.190)	(0.807)	(1.305)	(0.790)	(1.832)	(0.863)
Polity2 Sqrd		–2.070		–1.276*	–1.928	–1.775**	–2.631	–2.534***
		(1.262)		(0.718)	(1.216)	(0.719)	(1.643)	(0.737)
U.S. Alliance	0.816***	0.866***	(0.022)	(0.021)	0.917***	(0.055)	0.915***	–0.088
	(0.191)	(0.196)	(0.201)	(0.203)	(0.196)	(0.196)	(0.213)	(0.252)
Intervention	0.259***	0.238**	0.044	0.039	0.234**	0.010	0.195	–0.011
	(0.095)	(0.095)	(0.048)	(0.049)	(0.098)	(0.056)	(0.150)	(0.118)
International Crisis	0.422***	0.429***	0.114	0.118	0.464***	0.110	0.964***	0.079
	(0.136)	(0.134)	(0.091)	(0.092)	(0.128)	(0.084)	(0.204)	(0.126)
Time Effects	No	No	Yes	Yes	No	Yes	No	Yes
NT	3867	3867	3759	3759	4461	4183	1030	964

Table 5. Using the number of casualties as a dependent variable

	GTD Dom	*GTD Trans*	*ITERATE*	*GTD Dom*	*GTD Trans*	*ITERATE*	*GTD Dom*	*GTD Trans*	*ITERATE*
	HHG's FENB			*UFENB*			*PFE*		
Polity2	6.089***	4.610***	3.249***	6.985***	5.178***	2.931*	7.453***	2.631	2.168
	(1.307)	(1.075)	(1.070)	(2.560)	(1.677)	(1.597)	(2.586)	(1.911)	(1.361)
Polity2 Sqrd	–4.933***	–3.780***	–2.703***	–6.731***	–5.065***	–3.220**	–6.872***	–2.878**	–2.307*
	(1.165)	(0.899)	(0.944)	(2.077)	(1.419)	(1.320)	(1.958)	(1.457)	(1.227)
NT	869	831	779	892	892	892	869	831	779

Further Robustness

- **Autocracy and Democracy with anocracy as the missing type in Table 6**
- **Freedom House Political Rights (no endogeneity)**
- **Political Participation**
- **Executive Constraint**
- **Main findings are generally confirmed**

Table 6. Analysis of alternative measures of regime type

Dep. Var.	*Autocracy*	*Democracy*	*FHPR*	*FHPR Sqrd*	*VPP*	*VPP Sqrd*	*XCONST*	*VPP*
	HHG's FENB		*HHG's FENB*		*HHG's FENB*		*HHG's FENB*	
GTD Dom	–0.962***	–0.255*	3.380***	–3.079***	1.881*	–2.792**	0.812***	–0.854***
	(0.160)	(0.149)	(0.784)	(0.747)	(0.973)	(1.085)	(0.272)	(0.330)
GTD Trans	–0.823***	–0.108	2.935***	–2.449***	2.920***	–3.695***	0.858***	–0.574
	(0.168)	(0.159)	(0.775)	(0.774)	(0.963)	(1.042)	(0.274)	(0.376)
ITERATE	–0.590***	–0.140	1.663*	–1.482*	2.023**	–2.265***	0.358	–0.004
	(0.153)	(0.137)	(0.872)	(0.778)	(0.830)	(0.796)	(0.235)	(0.376)
ITER Nat.	–0.532***	–0.295*	1.341	–1.247	1.047	–1.037	0.081	0.178
	(0.197)	(0.174)	(0.939)	(0.871)	(1.159)	(1.278)	(0.303)	(0.427)
	UFENB		*UFENB*		*UFENB*		*UFENB*	
GTD Dom	–0.726**	–0.705***	4.380***	–5.086***	3.375**	–6.393***	0.146	–1.713***
	(0.369)	(0.270)	(1.435)	(1.366)	(1.570)	(1.687)	(0.563)	(0.659)
GTD Trans	–0.686***	–0.530**	2.723***	–2.845***	3.127**	–4.961***	0.510	–0.802
	(0.254)	(0.213)	(1.024)	(1.008)	(1.314)	(1.420)	(0.420)	(0.580)
ITERATE	–0.535**	–0.583***	2.493***	–2.810***	1.354	–2.083*	–0.157	–0.120
	(0.209)	(0.181)	(0.952)	(0.922)	(1.097)	(1.108)	(0.343)	(0.492)
ITER Nat.	–0.472*	–0.925***	1.906	–2.655**	0.656	–1.576	–0.459	–0.177
	(0.258)	(0.225)	(1.184)	(1.215)	(1.371)	(1.594)	(0.424)	(0.587)

	PFE		*PFE*		*PFE*		*PFE*	
GTD Dom	–0.664	–0.400*	1.650	–2.595**	2.365	–4.748***	0.723	–1.866***
	(0.511)	(0.207)	(1.311)	(1.036)	(1.750)	(1.831)	(0.451)	(0.693)
GTD Trans	–0.440	–0.254*	2.907**	–2.777***	2.966**	–3.917**	0.610*	–0.558
	(0.375)	(0.150)	(1.368)	(1.062)	(1.402)	(1.559)	(0.355)	(0.484)
ITERATE	–0.608***	–0.383**	1.980*	–1.810*	1.642	–2.008*	0.169	–0.125
	(0.186)	(0.161)	(1.130)	(1.002)	(1.009)	(1.111)	(0.337)	(0.412)
ITER Nat.	–0.553***	–0.713***	1.462	–1.916	1.243	–1.870	0.006	–0.290
	(0.209)	(0.199)	(1.238)	(1.191)	(1.435)	(1.647)	(0.502)	(0.598)

Endogeneity

- **Linear fixed-effects IV with Anocracy**

- **Why cannot do quadratic test**

- **Use external instrument of waves of regional change in regime type.**
  - **Neighboring regime changes spillover to other countries in the region, but they have no direct impact on a country's terrorism for excludability condition to hold.**

- **Pooled Poisson instrumental variable regression using the control function method.**

- **Instrument is correlated with the endogenous variable and instrument is strong.**

Concluding remarks

Table 7. Instrumental variables regressions

	GTD Dom	*GTD Trans*	*ITERATE*	*ITER Nat.*
		Linear fixed-effects IV		
Anocracy	7.071***	6.127***	3.643***	1.374
	(2.149)	(1.797)	(1.305)	(1.283)
NT	883	883	883	883
		Poisson control function		
Anocracy	5.045**	2.909**	2.886**	0.345
	(2.174)	(1.214)	(1.202)	(1.289)
Residual 1st	–4.184**	–1.733	–1.783	0.809
stage	(2.092)	(1.159)	(1.190)	(1.299)
NT	884	884	884	884