The Monopoly of Violence: Evidence from Colombia

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Introduction

- Max Weber defined a state as "a human community that (successfully) claims the *monopoly of the legitimate use of physical force* within a given territory."
- Many states do not have such a monopoly and without it have little hope of enforcing rules, regulations, and laws, providing property rights and public goods.
- Presumption in the existing literature: this is because of the weakness of the state and 'modernization' will ultimately strengthen the state and ensure monopoly of violence.

But

- In many polities, the central state exists side-by-side, and in fact in a '*symbiotic*' relationship with non-state armed actors.
- Examples: Waziristan in Pakistan; Kurdish areas in Iraq; the Mafia in the south of Italy; Southern United States after the Hayes-Tilden agreement of 1877.
- Motivated by these patterns, we develop a new perspective on the political economy of the establishment of a monopoly of violence, develop a model of this in a democratic context, and test some of its predictions using data from Colombia.

The Main Mechanism

- In the model there is an incumbent politician/party facing an election.
- The country is divided into regions some of which are controlled by non-state armed actors.
- The incumbent decides which regions to 'take back' (in the limit establishing a monopoly of violence) and chooses a policy vector in the election.
- Non-state armed actors have preferences over policies and can coerce voters to support one candidate over another.
- This creates an electoral advantage for incumbent politicians they favor and reduces the incentives to eliminate these non-state actors.

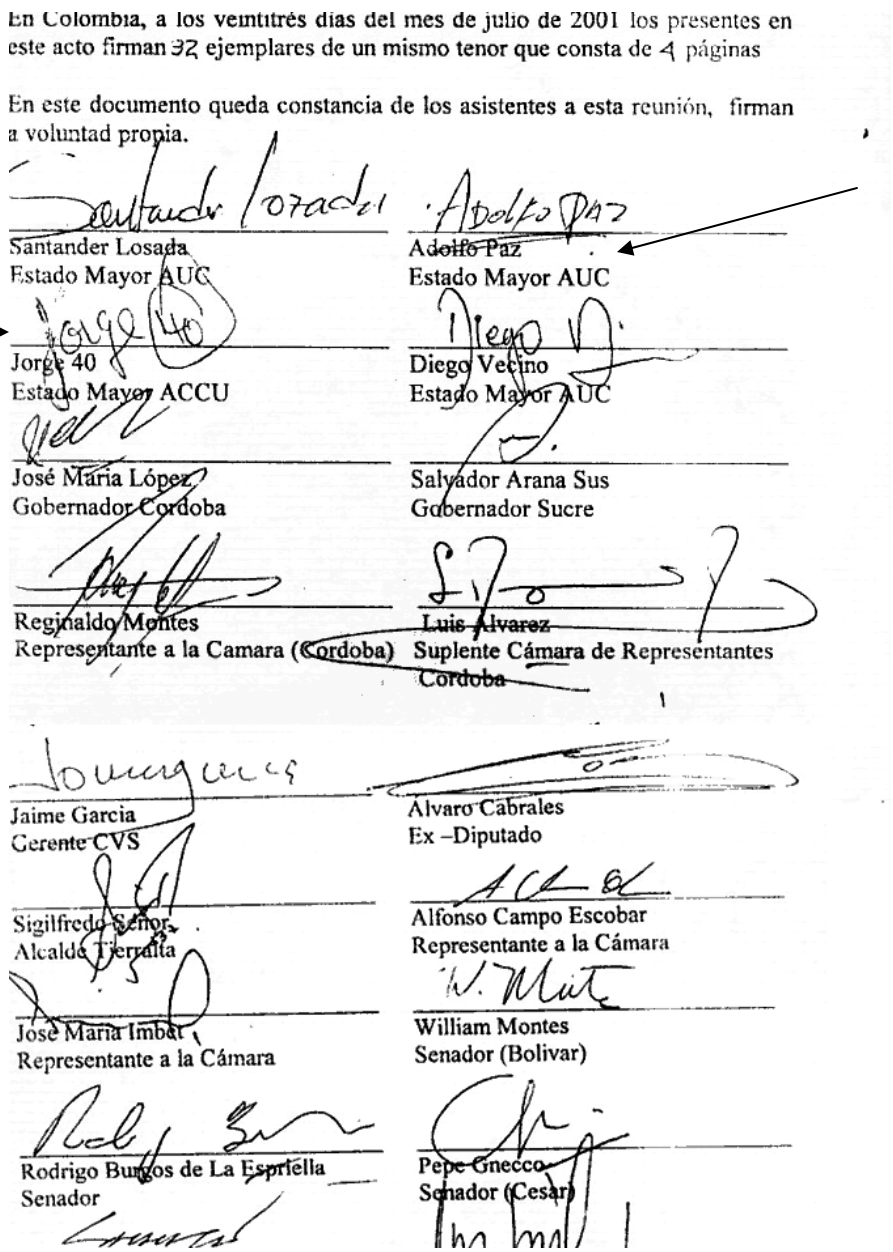
The Main Mechanism (continued)

- The model implies that paramilitaries will tend to persist to the extent that they deliver votes to the incumbent executive and that this effect is larger in areas where the President would otherwise not do well.
- Thus non-state armed actors can persist because they can be in a *symbiotic relationship* with the executive.
  - On the one hand, paramilitaries deliver votes to the President and in addition elect legislators who support the executive.
  - On the other, the executive delivers laws and the policies that the paramilitaries prefer.
- In addition, policies chosen to appease paramilitaries rather than provide public goods and services to the population.

Some Colombian Background

- In recent years Colombia has been dominated by two main non-state armed actors:
  - the 'left-wing' Fuerzas Armadas Revolucionarias de Colombia (FARC—The Revolutionary Armed Forces of Colombia) and
  - the 'right-wing' paramilitary forces which in 1997 coalesced into the Autodefensas Unidas de Colombia (AUC—United Self-Defense Organization of Colombia).
- After the foundation of the AUC in 1997 a strategic decision was taken to influence national politics (possibly taken at Santa Fé de Ralito in 2001 where members of the AUC, politicians and members of congress signed a document calling for the 'refounding of the country.')

Some of Signatures on the Pact of Santa Fé de Ralito, 23 July, 2001



En Colombia, a los veintitrés días del mes de julio de 2001 los presentes en este acto firman 32 ejemplares de un mismo tenor que consta de 4 páginas

En este documento queda constancia de los asistentes a esta reunión, firman a voluntad propia.

Santander Losada
Estado Mayor AUC

Adolfo Paz
Estado Mayor AUC

'Don Berna'

Jorge 40 →

Jorge 40
Estado Mayor ACCU

Diego Vecino
Estado Mayor AUC

José María López
Gobernador Cordoba

Salvador Arana Sus
Gobernador Sucre

Reginaldo Montes
Representante a la Camara (Cordoba)

Luis Alvarez
Suplente Cámara de Representantes
Cordoba

Jaime Garcia
Gerente CVS

Alvaro Cabrales
Ex –Diputado

Sigilfredo Señor
Alcalde Tierralta

Alfonso Campo Escobar
Representante a la Cámara

José María Imbat
Representante a la Cámara

William Montes
Senador (Bolivar)

Rodrigo Burgos de La Espriella
Senador

Pepe Gnecco
Senador (Cesar)

"What I said is that 35% of the Congress was elected in areas where there were states of the Self-Defense groups, in those states we were the ones collecting taxes, we delivered justice, and we had the military and territorial control of the region and all the people who wanted to go into politics had to come and deal with the political representatives we had there."

- Salvatore Mancuso

The Involvement of Paramilitaries in Politics

- In 2005 accusations of involvement of the AUC in the elections of 2002. Scandal with the demobilization of Jorge 40 and his 2,000 strong block on March 10, 2006 in La Mesa, César.
- Jorge 40's computer fell into the hands of government officials and it contained emails ordering his men to recruit peasants to pretend to be paramilitaries during demobilization ceremonies and also listed over 500 murders, and many links between politicians and paramilitaries.
- So far around 30,000 paramilitaries have "demobilized" in this process.
- As of May 29, 2009, 39 members of Congress and the Senate were under investigation, 36 were arrested and in detention, and 11 had been found guilty of links with paramilitaries. All in all 1/3 of the legislature, including Mario Uribe, President Uribe's cousin and close political adviser.

Table 1: Top 20 Senators By Vote Share in Paramilitary Areas

Senator		Third Parties (1)	Reelection (2)	Justice and Peace Law (3)	Status (4)	% Votes In Paramilitary Zones (5)
MAURICIO	PIMIENTO BARRERA	yes	yes	yes	Arrested (Guilty)	68.30
DIEB NICOLAS	MALOOF CUSE	yes	yes	yes	Arrested (Guilty)	56.93
ALVARO	ARAUJO CASTRO	yes		yes	Arrested	54.78
JUAN CARLOS	MARTINEZ SINISTERRA	yes	yes		Arrested	51.22
SALOMON DE JESUS	SAADE ABDALA	no	yes		Investigated	41.40
CARLOS ARTURO	CLAVIJO VARGAS	yes			Arrested	39.33
JUAN	GOMEZ MARTINEZ	yes	yes			34.96
ISABEL	CELIS YAÑEZ	no				33.96
PIEDAD	CORDOBA	no	no	no		33.20
GERMAN	HERNANDEZ AGUILERA	no	yes	yes		31.46
FLOR MODESTA	GNECCO ARREGOCES	yes	yes	yes		31.27
RUBEN DARIO	QUINTERO VILLADA	yes			Arrested	30.03
BERNARDO ALEJANDRO	GUERRA HOYOS	no		no		29.48
HUGO	SERRANO GOMEZ	no	no			29.21
WILLIAM ALFONSO	MONTES MEDINA	yes	yes	yes	Arrested (Not Guilty)	28.48
LUIS GUILLERMO	VELEZ TRUJILLO	no	yes	yes		28.44
CONSUELO	DE MUSTAFA	no	yes			28.22
JOSE RENAN	TRUJILLO GARCIA	no	yes	yes		26.80
VICTOR RENAN	BARCO LOPEZ	no	yes	yes	Investigated	26.11
GUILLERMO	GAVIRIA ZAPATA	no	no	yes	Investigated	25.07

Notes: Senators that obtained the twenty highest shares of votes in municipalities with high paramilitary presence. High paramilitary presence is measured by a dummy that takes the value of one if the municipality had a total number of attacks by the paramilitaries per 1.000 inhabitants above the 75th percentile in the 1997-2001 period. A Yes indicates that the senator belongs to a third party in the election of 2002 (column (1)), voted yes to approve reelection (column (2)) or yes to reintroduce Sedition and Reduction of Sentences articles in the Justice and Peace Law (column (3)). The status of the senator (column (4)) is that on May 21 of 2009 and is taken from Indepaz http://www.indepaz.org.co (for reelected senators) and from the news. A blank space in columns (2) or (3) means that the senator did not vote on the measure.

Impact of Paramilitaries on Elections

- We show that after the decision of the AUC to enter politics (i.e., after 2001), the presence of paramilitaries in a municipality is robustly correlated with greater vote shares of 'third parties,' typically connected with paramilitaries and supporting right-wing positions.
- We also show paramilitary presence highly correlated with vote share of winning presidential candidate (President Uribe).
- No robust effects of guerilla presence on voting patterns.
- Generally, the data support the idea that paramilitaries have a large impact on elections. Consistent with the case study literature.

Further Evidence

- We examine the vote in 2005 in the senate to re-introduce two clauses of the Justice and Peace Law which had been vetoed in Congress. These two clauses were to stop former paramilitaries being charged with sedition (avoiding possible extradition), and a limit of the length of prison services they could serve.
- Evidence that the presence of paramilitaries in areas where senate lists received a high proportion of their votes helps to predict the way Senators on the list vote.
- This variable also predicts which Senators were subsequently arrested for connections with paramilitaries.
- See Table 1.

Main Result: Persistence of the Paramilitaries

- We then examine whether or not the persistence of paramilitaries after the 2002 election is related to voting patterns in 2002.
- In line with the predictions of the model, paramilitaries tend to persist more in a municipality, the greater the vote share of President Uribe in 2002. This effect is smaller, the greater was the historical extent of conservative support in the municipality.
- The intuition for this last finding is that in places with strong historical support for conservatives Uribe was confident of winning and therefore needs the support of paramilitaries less.

The Symbiotic Relationship

- Large case study literature suggests that Uribe has delivered to paramilitaries (lenient Justice and Peace Law, refusal to support suspension of alternates in the legislature for arrested politicians).
- We test the other direction by looking at the roll call vote in 2004 to change the constitution to allow for Presidential re-election.
- We show that the greater the proportion of votes a Senate list received in paramilitary areas, the greater the proportion of Senators on the list that voted for re-election.

Relation to Existing Ideas

- Existing literature on state formation sees the absence of the monopoly of violence as being an outcome of
  1. 'Rough terrain' (Fearon and Laitin, 2003) or 'difficult geography' (Herbst, 2000).
  2. Poverty or absence of modernization (Fearon and Laitin, 2003).
  3. Politics of state formation but with very different mechanisms (Acemoglu, Ticchi, Vindigni, 2007, Besley and Persson, 2009).
- We emphasize an anti-modernization view. The non-state armed actors on which we focus are part of the state, not in contradiction to it.

The Model

- We consider a two-period model of political competition between two parties.
- Party A is initially (at $t = 0$) in power and at $t = 1$, it competes in an election against party B.
- The country consists of a large equal-sized number, N, of regions, with each region inhabited by a large number of individuals. We denote the collection of these regions by $\mathcal{N}$.
- The party that wins the majority of the votes over all regions wins the election at the time $t = 1$.
- Regions differ in terms of their policy and ideological preferences and, in addition, some regions are under paramilitary control.
- We assume as in standard Downsian models that parties can make commitments to their policies, but their ideological stance is fixed and captures dimensions of policies to which they cannot make commitments.

Electoral Competition without Paramilitaries

- Initially ignore the regions that are under paramilitary control.
- The utility of individual i in region $j \in \mathcal{N}$ (i.e. $j = 1, ..., N$) when party $g \in \{A, B\}$ is in power is given by

$$U_{ij}\left(q, \tilde{\theta}^g\right) = u_j\left(q\right) - Y\left(\tilde{\theta}_j - \tilde{\theta}^g\right) + \tilde{\varepsilon}_{ij}^g,$$

  where $q \in Q \subset \mathbb{R}^K$ is a vector of policies, u_j denotes the utility of individuals in region j, $\tilde{\theta}_j$ is the ideological bliss point of the individuals in region $j \in \mathcal{N}$, so that $Y\left(\tilde{\theta}_j - \tilde{\theta}^g\right)$ is a penalty term for the ideological distance of the party in power and the individual.
- Finally, $\tilde{\varepsilon}_{ij}^g$ is an individual-specific utility term where

$$\tilde{\varepsilon}_{ij}^A - \tilde{\varepsilon}_{ij}^B = \zeta + \varepsilon_{ij},$$

  where ζ is a common valance term and ε_{ij} is an iid term.
- ζ and each ε_{ij} have uniform distributions over $\left[-\frac{1}{2\phi}, \frac{1}{2\phi}\right]$.

Electoral Equilibrium

- Standard arguments: probability of winning for Party A:

$$P^A\left(q^A, q^B \mid \boldsymbol{\theta}\right) = \frac{1}{2} + \frac{\phi}{N}\sum_{j=1}^{N}\left[u_j\left(q^A\right) - u_j\left(q^B\right) + \theta_j\right]$$

  where $\theta_j \equiv Y\left(\tilde{\theta}_j - \tilde{\theta}^A\right) - Y\left(\tilde{\theta}_j - \tilde{\theta}^B\right)$.

- In the election at time $t = 1$, the two parties' problems are

$$\max_{q \in Q} P^A\left(q, q^B \mid \boldsymbol{\theta}\right) R^A, \tag{1}$$

$$\max_{q \in Q}\left[1 - P^A\left(q^A, q \mid \boldsymbol{\theta}\right)\right] R^B, \tag{2}$$

  where R^A and R^B are rents from holding office.

- An *electoral equilibrium* at time $t = 1$ is a tuple $\left(q^A, q^B\right)$ that solves problems (1) and (2) simultaneously (given the ideological biases $\boldsymbol{\theta}$).

Proposition 1

- Strict concavity of each u_j immediately implies that $q^A = q^B = q^*$.
- Therefore, party A will win the election at time $t = 1$ with probability

$$P^A\left(q^*, q^* \mid \boldsymbol{\theta}\right) = \frac{1}{2} + \frac{\phi}{N}\sum_{j=1}^{N}\theta_j. \tag{3}$$

Proposition

Without paramilitaries, there exists a unique equilibrium in the electoral competition at $t = 1$ where $q^A = q^B = q^*$. If q^* is interior, it satisfies $\sum_{j\in\mathcal{N}} \nabla u_j\left(q^*\right) = 0$. Party A wins the election with probability given by (3).

1. Without paramilitary presence, national policies are chosen to cater to the preferences of all voters in all regions.
2. Average ideological bias across all regions determines the probability of reelection for party A (which is currently in power).

Elections under Passive Paramilitaries

- A subset of the regions, denoted by $\mathcal{Z}$ are under paramilitary control.
- Denote the total number of these regions by Z.
- In paramilitary-controlled areas voting is not free but influenced by the implicit or explicit pressure of the paramilitaries.
- With *passive paramilitaries*, we take the behavior of the paramilitaries, and of citizens in paramilitary-controlled areas, as given.

Winning Probability under Passive Paramilitaries

- In each region $j \in \mathcal{Z}$, a fraction $\tilde{m}_j$ of the voters will vote for party A regardless of policies.
- Denote the complement of the set $\mathcal{Z}$ by $\mathcal{J} = \mathcal{N} \setminus \mathcal{Z}$ and the total number of regions in this (non-paramilitary-controlled) set by J where $J = N - Z$. Define $m_j \equiv \tilde{m}_j - 1/2$.
- Then with an identical reasoning to that in the previous subsection, the probability that party A will win the election at time $t = 1$ is

$$\begin{aligned} & P^A\left(q^A, q^B \mid \boldsymbol{\theta}, \mathbf{m}\right) \\ = \quad & \frac{1}{2} + \frac{\phi}{J} \sum_{j \in \mathcal{J}} \left[u_j\left(q^A\right) - u_j\left(q^B\right) + \theta_j\right] + \frac{1}{J} \sum_{j \in \mathcal{Z}} m_j, \end{aligned}$$

where $\mathbf{m}$ denotes the vector of m_j's (together with information on which j's are in the set $\mathcal{Z}$).

Proposition 2

Proposition

With passive paramilitaries, there exists a unique equilibrium in the electoral competition at $t = 1$ *where* $q^A = q^B = q^*$. *If* q^* *is interior, it satisfies* $\sum_{j \in \mathcal{J}} \nabla u_j (q^*) = 0$. *Party A wins the election with probability*

$$P^A (q^*, q^* \mid \boldsymbol{\theta}, \mathbf{m}) = \frac{1}{2} + \frac{\phi}{J} \sum_{j \in \mathcal{J}} \theta_j + \frac{1}{J} \sum_{j \in \mathcal{Z}} m_j.$$

1. Both parties target their policies to the voters in the non-paramilitary areas$\Longrightarrow$ public goods and other amenities will be reduced in the paramilitary-controlled areas beyond the direct effect of our paramilitary presence.
2. Electoral outcomes will now be dependent on the influence of the paramilitaries on voting behavior. If $\sum_{j \in \mathcal{Z}} m_j > 0$, then the probability that party A will win the election is greater.

The State and the Paramilitaries

- Taking the electoral equilibrium at time $t = 1$, now consider the decisions of the government (party A) at time $t = 0$ and study the decision of the incumbent to eliminate the paramilitaries.
- Suppose that at time $t = 0$, the objective of the governing party is

$$\sum_{j \in \mathcal{R}} \gamma_j + P^A \left(q, q^B \mid \boldsymbol{\theta} \right) R^A, \tag{4}$$

  where $\mathcal{R} \subset \mathcal{Z}$ is a subset of the areas previously controlled by the paramilitary that are "reconquered" and γ_j is the net benefit of reconquering area $j \in \mathcal{R}$.
- The objective of party A also includes the probability that it will remain in power. If some area $j \in \mathcal{Z}$ is reconquered, then in the subsequent electoral equilibrium at time $t = 1$, party A will obtain a fraction $1/2 + \phi\theta_j$ of the votes from this region as opposed to receiving $\tilde{m}_j = m_j + 1/2$ of the votes had this place remained under paramilitary control.

Proposition 3

- A *subgame perfect equilibrium* of this game is defined as an electoral equilibrium at date $t = 1$ together with decisions by party A at date $t = 0$ that maximizes its utility taking the date $t = 1$ equilibrium as given.

Proposition

Among areas under paramilitary control (in the set $\mathcal{Z}$), Party A will reconquer

$$\text{all } j \text{ such that } \gamma_j - (m_j - \phi\theta_j)\frac{R^A}{J} > 0$$

and will not reconquer

$$\text{any } j \text{ such that } \gamma_j - (m_j - \phi\theta_j)\frac{R^A}{J} < 0.$$

Interpreting Proposition 3

- The willingness of the state to reconquer areas controlled by the paramilitaries is affected not only by the real costs and benefits of doing so, but also by the implications for electoral outcomes.
- If paramilitary-controlled areas have $m_j > \phi\theta_j$, then party A will be reluctant to reconquer these areas.
- The areas that are most valuable in the hands of the paramilitaries are those that have both low θ_j and high m_j; that is, areas that would have otherwise voted for party B, but paramilitaries can force citizens to vote in favor of party A.
- A government that does not require electoral support would reconquer all areas with $\gamma_j > 0$.

Electoral Competition under Active Paramilitaries

- *Active paramilitaries*: change their support according to policies.
- Suppose that, as with the citizens, the preferences of the paramilitaries controlling region $j \in \mathcal{Z}$ is given by

$$W_j\left(q, \theta^g\right) = w_j\left(q\right) - \hat{Y}\left(\tilde{\theta}_j - \tilde{\theta}^g\right) + \tilde{\varepsilon}_j^g,$$

  where $\hat{Y}$ also increasing in $\left|\tilde{\theta}_j - \tilde{\theta}^g\right|$;
- $\tilde{\theta}_j$: policy preference of the group of paramilitaries controlling region j.
- Define

$$\hat{\theta}_j \equiv \hat{Y}\left(\tilde{\theta}_j - \tilde{\theta}^A\right) - \hat{Y}\left(\tilde{\theta}_j - \tilde{\theta}^B\right)$$

  as the ideological leanings of the paramilitaries in region j in favor of party A.
- Suppose that $\tilde{\varepsilon}_j^A - \tilde{\varepsilon}_j^B$ has a uniform distribution over $\left[-\frac{1}{2\hat{\phi}}, \frac{1}{2\hat{\phi}}\right]$.

The Probability of Winning with Coerced Voters

- Assume that paramilitaries can force all voters in their sphere of influence to vote for whichever party they prefer.
- Then the probability that party A will win the election becomes

$$P^A\left(q^A, q^B \mid \hat{\boldsymbol{\theta}}\right) = \frac{1}{2} + \frac{\phi}{J}\sum_{j\in\mathcal{J}}\left[u_j\left(q^A\right) - u_j\left(q^B\right) + \theta_j\right] + \frac{\hat{\phi}}{J}\sum_{j\in\mathcal{Z}}\left[w_j\left(q^A\right) - w_j\left(q^B\right) + \hat{\theta}_j\right],$$

  where now $\hat{\boldsymbol{\theta}}$ denotes the vector of all ideological preferences, including those of the paramilitaries.
- **Result:** electoral competition will lead to the same policy choice for both parties.

Proposition 4

Proposition

With active paramilitaries, there exists a unique equilibrium at $t = 1$ where $q^A = q^B = q^*$. Party A wins the election with probability

$$P^A\left(q^*, q^* \mid \hat{\boldsymbol{\theta}}\right) = \frac{1}{2} + \frac{\phi}{J}\sum_{j\in\mathcal{J}}\theta_j + \frac{\hat{\phi}}{J}\sum_{j\in\mathcal{Z}}\hat{\theta}_j.$$

At time $t = 0$, among areas under paramilitary control (in the set $\mathcal{Z}$),

$$\text{Party A will reconquer all } j \text{ such that } \gamma_j - \left(\hat{\phi}\hat{\theta}_j - \phi\theta_j\right)\frac{R^A}{J} > 0,$$

$$\text{and will not reconquer any } j \text{ such that } \gamma_j - \left(\hat{\phi}\hat{\theta}_j - \phi\theta_j\right)\frac{R^A}{J} < 0.$$

Interpreting Proposition 4

- When paramilitaries are active the two parties change their policies in order to "appease" the paramilitaries.
- Two features determine how slanted towards the paramilitaries policies are:

1. The size of the paramilitary-controlled areas (the greater is z the more influential are the paramilitaries in shaping equilibrium policy).
2. The relative responsiveness of the paramilitaries to policy concessions (the greater is $\hat{\phi}$ relative to ϕ, the more responsive are policies to paramilitary preferences relative to citizen preferences).

- Because electoral competition makes both parties cater to the wishes of the paramilitaries their ideological preferences still play a central role in whether they force the population to vote for party A or party B.
- Similar results if parties choose their ideologies.

Empirical Predictions of the Model

- We investigate the predictions of the model using Colombian data.

1. Non-state armed actors (AUC) once they became sufficiently powerful, should start influencing electoral outcomes favoring 'conservative' candidates. In presidential elections supporting President Uribe.
2. Paramilitaries located in areas that voted for Uribe in great numbers but in past elections tended to vote for more liberal politicians are more likely to persist between the presidential election in 2002 and the later years in our sample.
3. There is a policy quid pro quo between President Uribe and the Senators and Congressmen elected from high parameter areas.

Measuring Paramilitary and Guerrilla Presence

- We use two types of data on paramilitary presence and several measures:

1. The sum of *Paramilitary Attacks* between 1997 and 2005 in municipality m per 10,000 inhabitants where the population measure is the average population between 1993 and 2005.
2. A dummy that takes the value of 1 if municipality m has a value of *Paramilitary Attacks* above the 75th percentile.
3. The sum of displaced people that reported being displaced from municipality m by the paramilitaries between 1997 and 2006 per 10,000 inhabitants. The population measure is the average population between 1993 and 2005, and similarly constructed dummy.
4. Dummy combining information from Attacks and Displaced.
5. Principal component of two measures.

- Identical measures for guerrilla.

Figure A1: Guerrilla Attacks, 1997-2005

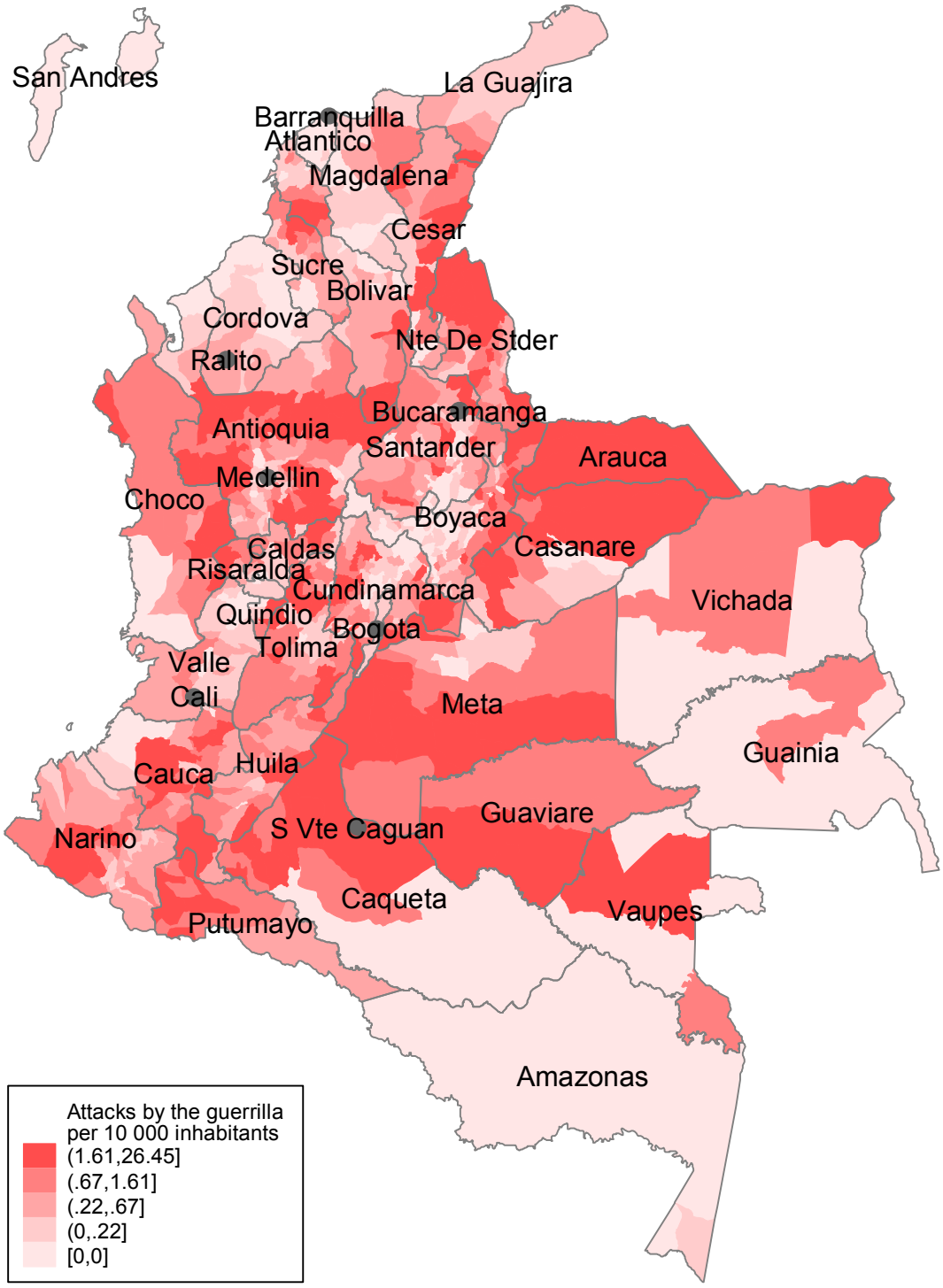
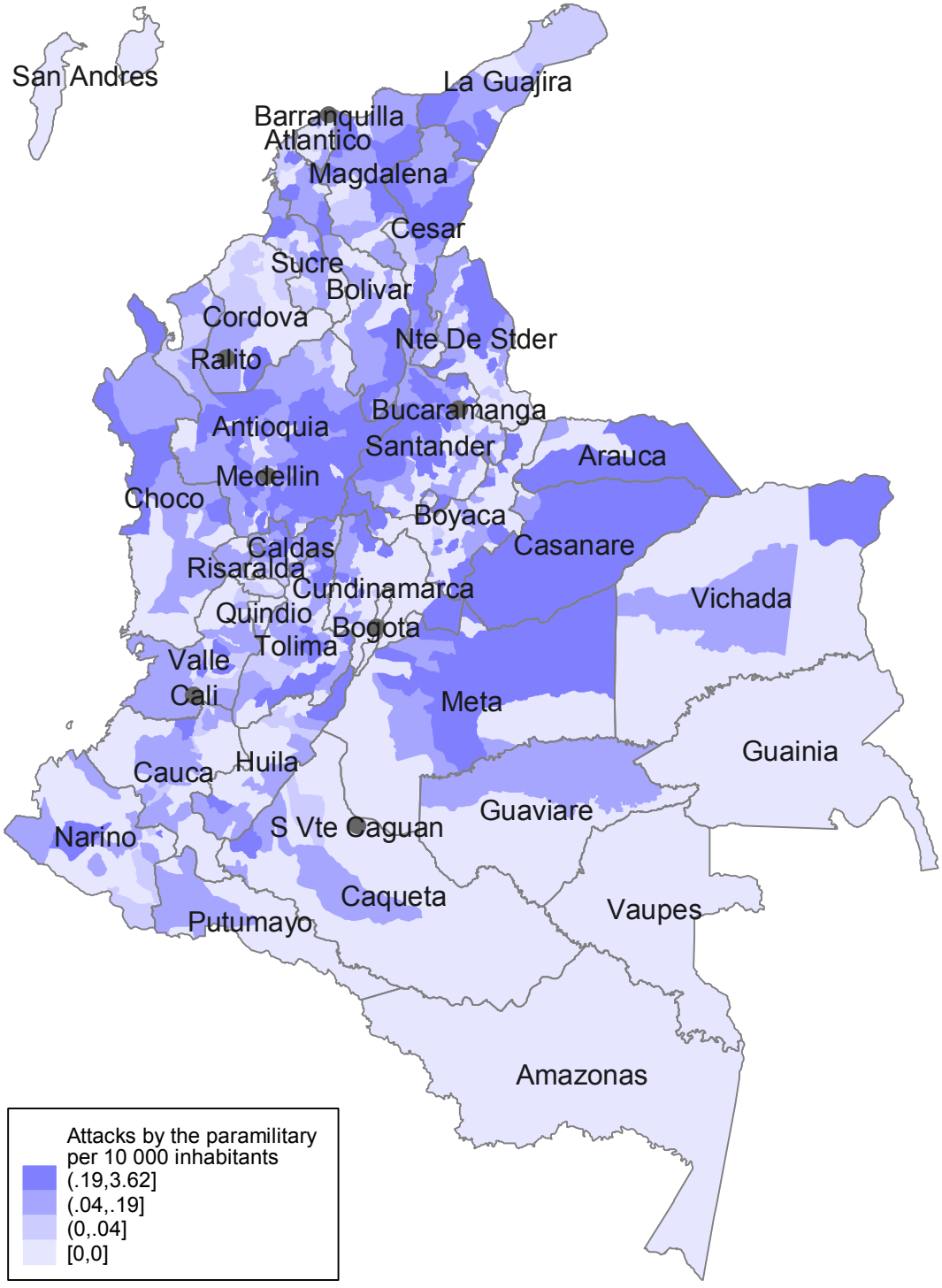


Figure A2: Paramilitary Attacks, 1997-2005



Other Data

- We classify parties into 'third,' 'traditional' (Liberals or Conservatives) and 'Socialist' (the 'Democratic Pole' alliance) and compute vote shares for senate and congress elections.
- We measure electoral concentration by the vote share of the most popular list in municipality m.
- Roll call votes were extracted from the *Gacetas del Senado*.
- Other covariates from CEDE database at the University of the Andes in Bogotá.

Basic Econometric Model

- We estimate a panel data model of the following form:

$$y_{m,t} = d_t + \delta_m + \alpha_t \cdot P_m + \beta_t \cdot G_m + \mathbf{X}'_{m,t} \cdot \boldsymbol{\pi} + \varepsilon_{m,t}, \qquad (5)$$

  where $y_{m,t}$ is the outcome variable in municipality m at time t, the d_t denote time effects, the δ_m are municipality fixed effects, $\mathbf{X}_{m,t}$ is a vector of covariates, and $\varepsilon_{m,t}$ is a disturbance term.
- P_m is paramilitary presence and G_m guerilla presence.
- The term $\alpha_t \cdot P_m$ estimates a potentially differential growth effect for every time period (relative to the baseline).
- Our working hypothesis that the AUC influenced elections after it developed a political strategy implies that we should see $\alpha_t = 0$ for dates before 2002 and $\alpha_t > 0$ after 2002.
- Also allow for time-varying measures $P_{m,t-1}$ and $G_{m,t-1}$.

Paramilitary Presence and Third Party Vote Share

- Table 3 investigates impact of paramilitary presence on third-party vote share in Senate.
- Large quantitative effect: about 10 percentage points gained in third-party vote share relative to a base of 15%.
- Results very robust to different specifications, controls and alternative measures of paramilitary presence.
- Guerrilla presence has no effect on third-party vote share or socialist party vote share.
- Similar results for Congress elections.

Table 3: Paramilitary Presence and Third Parties Share of Votes in the Elections for the Senate

Dependent Variable is Vote Share obtained by Third Parties in the Elections for the Senate	Panel 1991-2006 (1)	Panel 1991-2006 (2)	Panel 1991-2006 (3)	Panel 1991-2006 (4)	Panel 1991-2006 (5)	Panel 1991-2006 (6)	Panel 1998-2006 (7)	Panel 1998-2006 (8)
	Armed Actors Presence is Measured by:							
	Attacks			Attacks Dummy			Time Varying Attacks Dummy	
Paramilitary Presence							-11.35	-10.79
							(2.67)	(2.75)
Paramilitary Presence X 1994	4.95	0.79	0.57	4.15	1.91	1.33		
	(1.54)	(1.47)	(1.61)	(1.25)	(1.24)	(1.31)		
Paramilitary Presence X 1998	4.22	0.34	0.41	2.86	0.12	0.29		
	(1.99)	(2.09)	(2.20)	(1.68)	(1.73)	(1.86)		
Paramilitary Presence X 2002	20.97	15.88	15.80	13.71	10.62	10.47	17.81	17.02
	(3.14)	(3.18)	(3.23)	(1.98)	(1.94)	(2.01)	(2.87)	(3.01)
Paramilitary Presence X 2006	22.10	10.79	10.29	14.54	8.48	8.31	18.02	17.21
	(3.19)	(3.03)	(3.04)	(1.99)	(1.66)	(1.73)	(3.01)	(3.15)
Guerrilla Presence								-1.06
								(1.78)
Guerrilla presence X 1994			0.20			2.49		
			(0.56)			(1.54)		
Guerrilla Presence X 1998			-0.06			-0.72		
			(0.66)			(1.89)		
Guerrilla Presence X 2002			0.07			0.66		2.00
			(0.70)			(1.99)		(2.16)
Guerrilla Presence X 2006			0.45			0.70		2.79
			(0.61)			(1.80)		(2.32)
Controls Interacted with Year Dummies	No	Yes	Yes	No	Yes	Yes	No	No
Observations	5379	4915	4915	5379	4915	4915	3286	3286

Notes: Robust Standard errors clustered at the municipality level in parentheses. Panel regressions with full set of municipality and year dummies. Dependent variable is share of votes of third parties lists (not Conservative, nor Liberal, nor from the left) in the elections for the Senate. We report results with three different measures of paramilitary presence: **i.** The sum of paramilitary attacks per 1,000 inhabitants in municipality *m* during the 1997-2005 period in columns (1), (2) and (3); **ii.** A time invariant dummy that takes the value of one if the sum of paramilitary attacks per 1,000 inhabitants in municipality *m* during the 1997-2005 period is above the 75th percentile in columns (4), (5) and (6); **iii.** A time varying attacks dummy that takes the value of one in municipality *m* and time *t* if time varying measure of attacks over population is above the 75th percentile (calculated over all municipalities and years) in columns (7) and (8). When guerrilla presence is included, in columns (3), (6) and (8), it is measured as the corresponding paramilitary presence measure. Columns (2), (3), (5) and (6) include the following controls interacted with time dummies: altitude, distance to the state capital, precipitation, average population between 1993 and 2005, rurality index in 1993, land gini in 1985, unfulfilled basic needs in 1993, dummy for coca cultivation in 1994, dummy for opium cultivation in 1994, preferences for the Right in 1986 and preferences for the Left in 1986.

Paramilitary Presence and President Vote Share

- Table 4 looks at the vote share of the winning presidential candidate.
- Significant effect in 2002 (2.5-3 percentage points).
- Much larger in 2006 (7-11 percentage points).
- Plausible: President Uribe became much more popular with paramilitaries during his first term, particularly, because of his policies concerning demobilization and the Justice and Peace Law.
    - Jairo Angarita, former leader of the AUC's Sinú and San Jorge blocs and Salvatore Mancuso's deputy, in September 2005:

"[proud to be working for the] reelection of the best President we have ever had".

Tables 4: Paramilitary Presence and Winning Presidential Candidate Share of Votes

Dependent Variable is Winning Presidential Candidate Vote Share	Panel 1998-2006 (1)	Panel 1998-2006 (2)	Panel 1998-2006 (3)	Panel 1998-2006 (4)	Panel 1998-2006 (5)	Panel 1998-2006 (6)	Panel 1998-2006 (7)	Panel 1998-2006 (8)
	Armed Actors Presence is Measured by:							
	Attacks			Attacks Dummy			Time Varying Attacks Dummy	
Paramilitary Presence							-6.92	-6.91
							(3.59)	(3.65)
Paramilitary Presence X 2002	10.16	5.31	7.43	3.11	1.26	2.14	8.87	10.49
	(1.99)	(1.53)	(1.59)	(1.45)	(1.11)	(1.13)	(3.58)	(3.65)
Paramilitary Presence X 2006	21.60	13.67	12.32	11.45	8.17	6.66	12.53	12.23
	(2.41)	(1.71)	(1.64)	(1.67)	(1.21)	(1.20)	(3.77)	(3.86)
Guerrilla Presence								-3.54
								(1.61)
Guerrilla Presence X 2002			-1.73			-3.71		-5.53
			(0.34)			(1.14)		(1.73)
Guerrilla Presence X 2006			1.22			6.47		1.70
			(0.41)			(1.45)		(2.21)
Controls Interacted with Year Dummies	No	Yes	Yes	No	Yes	Yes	No	No
Observations	3297	2951	2951	3297	2951	2951	3297	3297

Notes: Robust Standard errors clustered at the municipality level in parentheses. Panel regressions with full set of municipality and year dummies. Dependent variable is share of votes of the winning presidential candidate. We report results with three different measures of paramilitary presence: **i.** The sum of paramilitary attacks per 1,000 inhabitants in municipality *m* during the 1997-2005 period in columns (1), (2) and (3); **ii.** A time invariant dummy that takes the value of one if the sum of paramilitary attacks per 1,000 inhabitants in municipality *m* during the 1997-2005 period is above the 75^{th} percentile in columns (4), (5) and (6); **iii.** A time varying attacks dummy that takes the value of one in municipality *m* and time *t* if time varying measure of attacks over population is above the 75^{th} percentile (calculated over all municipalities and years) in columns (7) and (8). When guerrilla presence is included, in columns (3), (6) and (8), it is measured as the corresponding paramilitary presence measure. Columns (2), (3), (5) and (6) include the following controls interacted with time dummies: altitude, distance to the state capital, precipitation, average population between 1993 and 2005, rurality index in 1993, land gini in 1985, unfulfilled basic needs in 1993, dummy for coca cultivation in 1994, dummy for opium cultivation in 1994 , preferences for the Right in 1986 and preferences for the Left in 1986.

Predicting Arrests

- A useful 'reality check' on whether our measures of paramilitary presence are informative is to examine whether or not they help to predict which members of the Senate would be arrested. This is further evidence that paramilitaries have influenced elections.
- Define ω_{lP} to be the proportion of total vote that list l receives in municipalities with high paramilitary presence. Similarly ω_{lG} is the proportion of total vote that list l receives in municipalities with high guerilla presence.
- Define Δ_l to be the proportion of senators on list l who have been arrested for links with paramilitaries. We estimate

$$\Delta_l = \rho \cdot \omega_{lP} + \lambda \cdot \omega_{lG} + \mathbf{X}_l' \cdot \gamma + \epsilon_l \tag{6}$$

- Since citizens vote for lists we must use the votes cast for lists to try to predict the proportion of senators on the list that will be arrested. Our hypothesis is that $\rho > 0$.
- Table 5.

Table 5: Senators and Congressmen Arrested, Justice and Peace Law and Votes from High Paramilitary Presence Areas

	Cross Section (1)	Cross Section (2)	Cross Section (3)	Cross Section (4)	Cross Section (5)	Cross Section (6)	Cross Section (7)	Cross Section (8)	Cross Section (9)	Cross Section (10)	Cross Section (11)	Cross Section (12)
	Dependent Variable is the Fraction of Arrested Senators/Congressmen in list l.								*Dependent Variable is the Fraction of Senators in List l that Voted Yes for Reintroducing the Articles of Sedition and Reduction of Sentences in the Justice and Peace Law .*			
	Senate				Congress				Senate			
Dummy Conservative	0.05			0.12	-0.01			0.09	0.41			0.38
	(0.12)			(0.14)	(0.06)			(0.09)	(0.12)			(0.14)
Dummy Left	-0.10			-0.03	-0.06			-0.02	-0.59			-0.54
	(0.06)			(0.07)	(0.03)			(0.04)	(0.12)			(0.14)
Dummy Third Parties	0.19			0.21	0.06			0.08	0.34			0.33
	(0.09)			(0.09)	(0.05)			(0.05)	(0.13)			(0.13)
Share of Votes From:												
Paramilitary Areas		1.38	1.03	0.92		0.26	0.20	0.18		0.83	1.33	0.93
		(0.42)	(0.51)	(0.45)		(0.12)	(0.13)	(0.13)		(0.41)	(0.53)	(0.54)
Guerrilla Areas		-0.59	-0.13	0.02		-0.01	0.03	0.07		-0.86	-1.63	-1.26
		(0.72)	(0.81)	(0.75)		(0.07)	(0.07)	(0.08)		(0.73)	(0.89)	(0.83)
Right Oriented Areas			-0.41	-0.55			-0.31	-0.44			1.37	0.52
			(0.42)	(0.39)			(0.12)	(0.21)			(0.46)	(0.47)
Left Oriented Areas			-0.27	-0.29			-0.09	-0.10			-0.13	-0.05
			(0.18)	(0.18)			(0.06)	(0.06)			(0.27)	(0.23)
Observations	96	96	96	96	162	162	162	162	57	57	57	57
R-squared	0.06	0.13	0.15	0.21	0.01	0.04	0.06	0.08	0.41	0.04	0.13	0.45

Notes: Robust standard errors in parentheses. **Left hand panel:** OLS regressions relating arrests of senators/congressmen to votes obtained in areas with presence of non-state armed actors. Dependent variable is the proportion of senators on list *l* arrested for being involved with the paramilitary. **Right hand panel:** OLS regressions linking votes in the senate to votes obtained in areas with presence of non-state armed actors. Dependent variable is the proportion of senators on list *l* that voted yes. The vote is for reintroducing the articles of Sedition and Reduction of Sentences in the Justice and Peace Law (since only three lists have more than one candidate in the senate in the legislature of 2002-2006 and since candidates in the same list voted in the same manner, the dependent variable is a dummy). **Both Panels:** To measure the share of votes of list *l* from a given area we first create dummies for places with high presence of paramilitary and guerrilla, Right oriented preferences or Left oriented preferences (municipality *m* is a high presence area if the value of the corresponding variable in municipality *m* is above the 75th percentile; paramilitary and guerrilla presence measures are the sum of attacks per 1,000 inhabitant in the 1997-2001 period, just before the elections of 2002). Then, with each of these dummies, we compute the share of votes in national elections obtained by list *l* in areas where the dummy takes the value of one.

Voting for Pro-Paramilitary Laws

- Last 4 columns of Table 5 examines voting on the two 'pro-paramilitary' clauses in the Justice and Peace Law.
- We estimate the same econometric model but now Δ_l is the proportion of senators on list l who voted in favor of reintroducing the two clauses.
- We again hypothesize $\rho > 0$.
- Similar results: both third party status and ω_{lP} predict the way a senator votes.

Paramilitary Persistence—Econometric Model

- Baseline model

$$P_{m,t>2002} = \alpha P_{m,t<2002} + \beta v^u_{m,2002} + \gamma v^u_{m,2002} \cdot v^p_{m,1998} + \delta \cdot v^p_{m,1998} + \mathbf{X}'_m \cdot \chi + \varepsilon_m \quad (7)$$

  where $v^u_{m,2002}$ is the vote share of President Uribe in municipality m in 2002 and $v^p_{m,1998}$ is the vote share of Pastrana in 1998.
- Our model predicts that $\beta > 0$, a greater share of votes for Uribe would lead to greater paramilitary presence after 2002, and $\gamma < 0$, so that the higher was Pastrana's vote share in 1998, the more confident Uribe would be of winning a lot of votes, and the less he would need the support of the paramilitaries.
- We also use a more direct way of addressing this hypothesis by using the variable $\max\{0, v^u_{m,2002} - v^p_{m,1998}\}$, which captures the vote advantage of Uribe in 2002 relative to Pastrana's vote in 1998.
- Again, large quantitative effects.

Table 6: Persistence of Paramilitaries and Vote Share for Alvaro Uribe

Dependent Variable is Paramilitary Presence in 2004-2005	Cross-Section (1)	Cross-Section (2)	Cross-Section (3)	Cross-Section (4)	Cross-Section (5)	Cross-Section (6)	Cross-Section (7)	Cross-Section (8)	Cross-Section (9)	Cross-Section (10)	Cross-Section (11)	Cross-Section (12)
	Sample is Restricted to Municiaplities with Paramilitary Presence in 2000-2001											
	Armed Actors Presence is Measured by:											
	Attacks				Log Attacks		Displaced		Log Displaced		Principal Component Attacks and Displaced	
Max{0, Uribe-Pastrana vote share}				0.25		0.56		10.16		0.39		2.57
				(0.15)		(0.30)		(2.95)		(0.13)		(0.83)
Uribe Vote Share	0.14	0.15	0.15		0.11		4.09		0.32		1.17	
	(0.08)	(0.09)	(0.08)		(0.27)		(1.98)		(0.10)		(0.49)	
Patrana Vote Share	-0.22	-0.09	-0.09		0.07		-0.85		0.31		-1.30	
	(0.08)	(0.10)	(0.11)		(0.41)		(2.81)		(0.17)		(0.66)	
Uribe Vote Share X Pastrana Vote Share	-0.63	-0.41	-0.42		-0.46		-12.68		-0.10		-3.65	
	(0.33)	(0.33)	(0.36)		(0.22)		(5.60)		(0.09)		(1.46)	
Paramilitary Presence in 2000-2001	0.42	0.42	0.42	0.40	0.35	0.34	0.04	0.03	0.22	0.21	0.37	0.35
	(0.17)	(0.18)	(0.19)	(0.18)	(0.12)	(0.12)	(0.02)	(0.02)	(0.06)	(0.06)	(0.15)	(0.14)
Guerrilla Presence in 2000-2001			-0.00	0.00	0.00	0.01	0.05	0.05	0.21	0.21	-0.08	-0.08
			(0.02)	(0.02)	(0.10)	(0.10)	(0.02)	(0.02)	(0.06)	(0.06)	(0.09)	(0.09)
Controls	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	299	291	291	291	88	88	616	616	503	503	643	643
R-squared	0.25	0.27	0.27	0.27	0.64	0.61	0.19	0.20	0.43	0.41	0.21	0.22

Notes: Robust standard errors in parentheses. Cross Section regressions restricting the sample to municipalities with paramilitary presence in 2000-2001. Dependent variable is paramilitary presence in 2004-2005. We report results with three measures of paramilitary presence: **i.** Attacks by the paramilitaries in columns (1) to (6) is the sum of paramilitary attacks per 1,000 inhabitants in municipality *m* during the 2004-2005 period (dependent variable) and during the 2000-2001 period (paramilitary presence before 2002 variable); **ii.** Displaced by the paramilitaries in columns (7) to (10) is the sum of people displaced by the paramilitary per 1,000 inhabitants in municipality *m* during the 2004-2005 period (dependent variable) and during the 2000-2001 period (paramilitary presence before 2002 variable); **iii.** The principal component of attacks by the paramilitary and displaced by the paramilitary in columns (11) and (12). Guerrilla presence before 2002 is measured as paramilitary presence before 2002. In columns (5), (6), (9) and (10) all variables are in logs. Uribe and Pastrana vote shares are the vote shares of Álvaro Uribe in 2002 and Andrés Pastrana in 1998 (first round), respectively. These two variables are measured in a scale from zero to one for ease of exposition (to report fewer decimals) and they are also demeaned to interpret the derivatives at the mean of the interactions in all columns except in columns (4), (8) and (12). In these columns, the variable of interest is the maximum between zero and the difference between Álvaro Uribe's vote share in 2002 and Andrés Pastrana's vote share in 1998 in municipality *m*. All specifications include the same controls as in Table 3: altitude, distance to the state capital, precipitation, average population between 1993 and 2005, rurality index in 1993, land gini in 1985, unfulfilled basic needs in 1993, dummy for coca cultivation in 1994, dummy for opium cultivation in 1994 , preferences for the Right in 1986 and preferences for the Left in 1986.

Table 7 : Reelection and Senators Elected from High Paramilitary Presence Areas

Dependent Variable is the Fraction of Senators in List l that Voted Yes for Changing the Constitution to Allow the Reelection of the President	Cross Section (1)	Cross Section (2)	Cross Section (3)	Cross Section (4)	Cross Section (5)	Cross Section (6)	Cross Section (7)
		Armed Presence Measured By:					
		Attacks			Displaced		
Dummy Conservative	0.48			0.36			0.33
	(0.11)			(0.12)			(0.12)
Dummy Left	-0.52			-0.48			-0.50
	(0.11)			(0.11)			(0.12)
Dummy Third Parties	0.31			0.30			0.28
	(0.13)			(0.12)			(0.13)
Share of Votes From:							
Paramilitary Areas		1.26	1.79	1.61	1.02	1.28	0.63
		(0.41)	(0.55)	(0.60)	(0.41)	(0.44)	(0.36)
Guerrilla Areas		-0.92	-1.87	-1.39	-0.88	-1.05	-0.21
		(0.73)	(0.82)	(0.80)	(0.79)	0.78	(0.65)
Right Oriented Areas			1.81	1.11		1.55	0.88
			(0.36)	(0.34)		(0.34)	(0.32)
Left Oriented Areas			-0.17	-0.02		-0.27	-0.16
			(0.24)	(0.21)		(0.23)	(0.21)
Observations	76	76	76	76	76	76	76
R-squared	0.38	0.07	0.21	0.45	0.04	0.17	0.39

Notes: Robust standard errors in parentheses. OLS regressions linking votes in the Senate to votes obtained in areas with presence of non-state armed actors. Dependent variable is the proportion of senators in list *l* that voted yes (since only three lists have more than one candidate in the senate in the legislature of 2002-2006 and since candidates in the same list voted in the same manner, the dependent variable is a dummy). The vote is for changing the constitution to allow the president to be elected for a second consecutive term. To measure the share of votes of list *l* from a given area we first create dummies for places with high presence of paramilitary, guerrilla, right-oriented preferences or left-oriented preferences (municipality *m* is a high presence area if the value of the corresponding variable in municipality *m* is above the 75th percentile; paramilitary and guerrilla presence measures are the sum of attacks per 1,000 inhabitant in the 1997-2001 period, just before the elections of 2002). Then, with each of these dummies, we compute the share of votes in national elections obtained by list *l* in areas where the dummy takes the value of one. Columns (2) to (4) use attacks to define the presence dummies, columns (5) to (7) use displaced.

Conclusions

- We developed a new approach to state formation focusing on the creation of the monopoly of violence. This is the sine qua non of an effective state. The approach emphasizes the political disincentives of eliminating non-state armed actors. We built a model of this in a democracy and tested some of its' implications in Colombia.
- The data broadly consistent with the empirical predictions of the model.
- Different interpretations—maybe people in paramilitary areas are naturally pro-law and order (but fixed effects, controls for 'baseline conservatism', and other evidence).
- External validity...
  - But Waziristan in Pakistan; Kurdish areas in Iraq; the Mafia in the south of Italy; Southern United States after the Hayes-Tilden agreement of 1877.