The Political Economy of Development: PPHA 42310

Lecture 5

James A. Robinson

Chicago

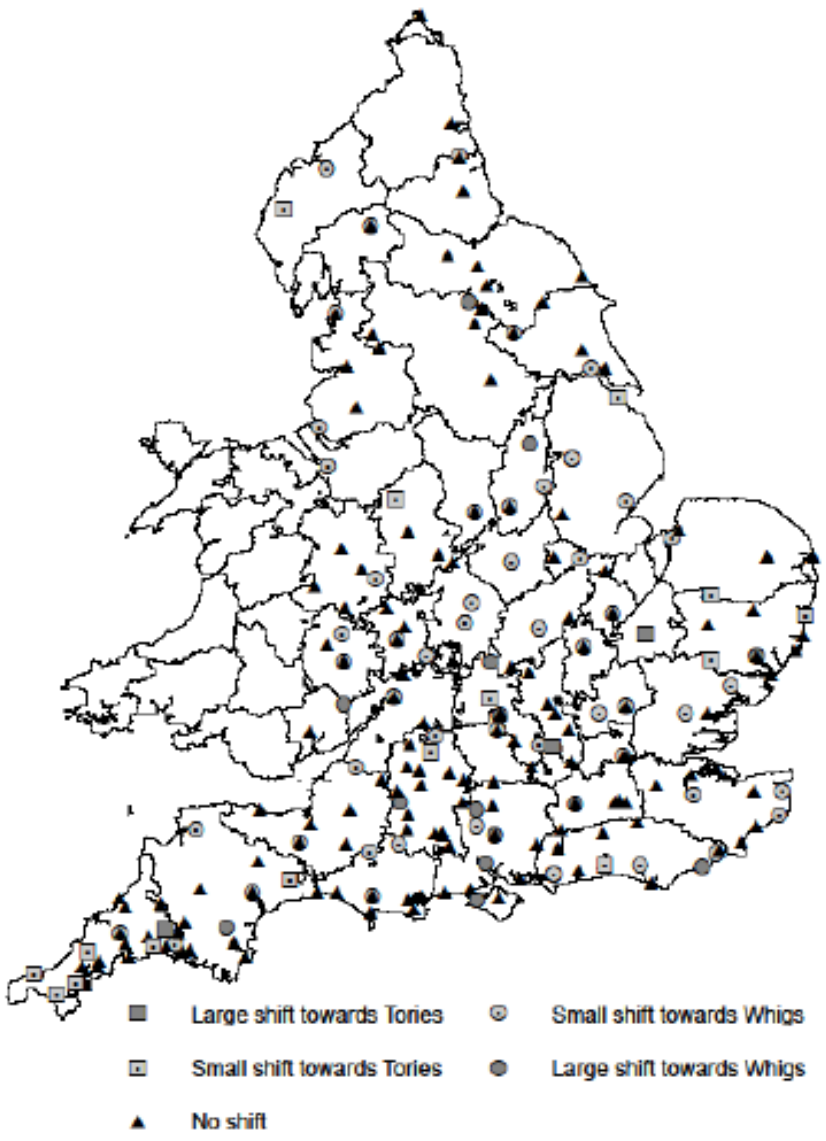
April 19, 2019

Democracy

- What leads to democratization? There are several types of theories
  - collective action by the disenfranchised/threat of revolution (Acemoglu and Robinson, formalizing and extending long case study literature) intra-elite competition (Lizzeri and Persico)
  - elites enfranchise people to make them stake-holders in society in the context of inter-state wars (Ticchi and Vindigni)
  - more recent class of theories suggests that elections may actually be an attractive way of otherwise authoritarian elites to manage power (I'm sceptical... no good model)
  - Clearly a lot of diffusion in democratization and spatial correlation - mechanisms for this are not clear.
- Cross national evidence has remarkably few robust findings (negative economic shocks induce democratization is one of them: "Rain and the Democratic Window of Opportunity," Markus Brückner and Antonio Ciccone, Econometrica, 79, No. 3 (May, 2011), 923–947.)

The 1832 Reform Act

- Aidt and Frank (2015) study the famous reform act which started modern democracy rolling in England.
- They exploit the fact that inbetween the general election of 1830 and the following one in 1831 the so called 'swing riots' broke out. They started in Sevenoaks in Kent and according to historians seem to have spread along roads. Hence they use travel time distance to Sevenoaks along the road network as an instrument for the total number of swing riots within a 10km radius of each constituency.
- The 1831 election was something like a plebiscite on political reform, Whigs and Radicals for, Tories against. They can condition on Whig votes in 1830 and look at the change.
- Quantitatively the IV estimates suggest that the swing riots can explain all of the shift in voting for the Whigs, and thus reform.



Map 1. The shift in the support for the Whigs and the Tories between 1830 and 1831

Map 2. The spatial distribution of the Swing riots

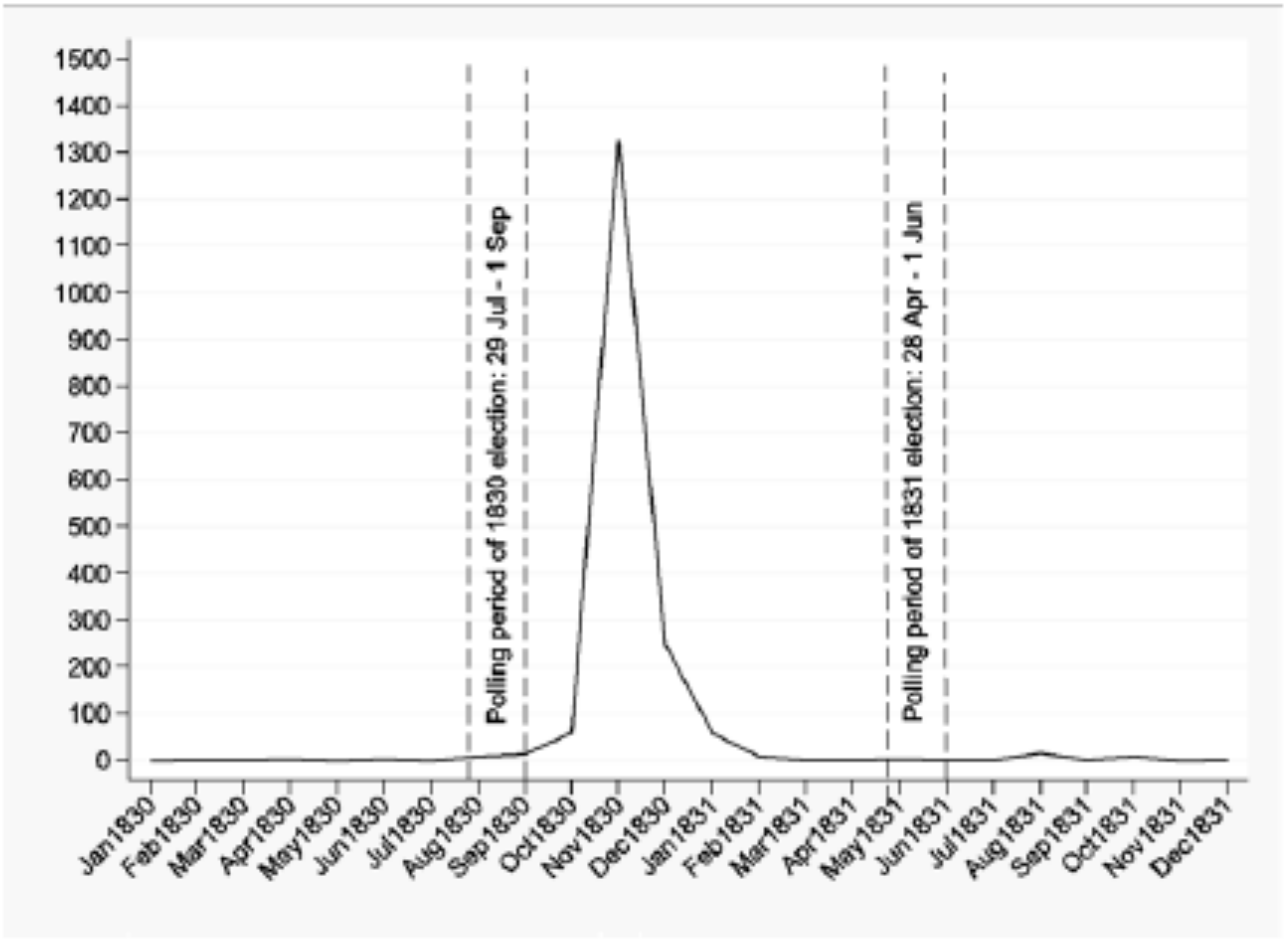


Figure 1. The monthly number of Swing riots and the timing of the 1830 and 1831 general elections (Source: Holland, 2005)

Table 1. Local Swing riots and the outcome of the 1831 election

Baseline results

	(1)	(2)	(3)	(4)	(5)	(6)
Panel A	**Whig share 1831 (%)**					
	Least Squares					
Riots within 10km	0.57	0.37	0.44	0.47	0.47	0.44
	(0.32)*	(0.22)*	(0.18)**	(0.18)**	(0.18)**	(0.18)**
	[0.25]**	[0.19]*	[0.18]**	[0.18]**	[0.19]**	[0.18]**
Whig share 1826		0.87	0.32	0.35	0.38	0.38
		(0.19)***	(0.19)	(0.20)*	(0.20)*	(0.071)***
(Whig share 1826)^2		-0.0045	0.00055	0.00035	-6.8e-06	
		(0.0019)**	(0.0020)	(0.0020)	(0.0020)	
Reform support 1830		12.0	12.1	11.2	12.1	12.6
		(5.60)**	(4.97)**	(5.09)**	(5.14)**	(4.77)**
County constituency			33.0	37.2	35.2	31.6
			(5.14)***	(6.50)***	(7.04)***	(4.68)***
University constituency			-60.8	-58.1	-58.1	-61.8
			(9.39)***	(10.7)***	(8.60)***	(10.50)***
Narrow franchise			-3.35	-2.85	-3.62	
			(5.62)	(5.39)	(5.26)	
Patronage index			-17.0	-13.5	-12.2	-15.3
			(3.42)***	(3.94)***	(3.86)***	(3.52)***
Emp. fract. index				7.52	7.83	
				(30.9)	(29.49)	
Agriculture (emp. share)				-28.4	-27.2	
				(27.5)	(27.0)	
Trade (emp. share)				11.4	14.0	
				(30.9)	(31.1)	
Professionals (emp. share)				-143	-119	
				(120)	(120)	
Population					0.00028	
					(0.009)	
Population density					0.15	
					(2.68)	
Thriving economy					-10.1	
					(5.91)*	
Declining economy					-10.6	-10.3
					(5.86)*	(5.72)*
Selection ratio	n.a.	0.67	2.26	2.54	2.56	2.59
Adjusted R^2	0.021	0.27	0.44	0.44	0.45	0.45
Obs. (constituencies)	244	244	244	244	244	244
Panel B	**Whig elected 1831**					
	Probit					
Riots within 10km	0.0058	0.0056	0.0062	0.0068	0.0056	0.0065
	[0.0029]**	[0.0028]**	[0.0029]**	[0.0029]**	[0.0027]**	[0.0029]**
Obs. (seats)	489	489	489	489	489	489

Table 4. Distance to Sevenoaks and the outcome of the 1831 and 1830 elections
Reduced form estimates

	(1)	(2)	(3)	(4)
Panel A	**Whig share 1831 (%)**			**Whig elected 1831**
	Least squares			Probit
Distance to Sevenoaks	-1.89	-2.60	-2.60	-0.036
Spatial std. errors[a]	(0.84)**	(0.78)***	(0.86)***	
White robust std. errors	[0.67]***	[0.81]***	[0.87]***	
Clustered std. errors[b]				{0.011}***
Adjusted R^2	0.03	0.44	0.43	
Pseudo R^2				0.41
Panel B (Placebo test)	**Whig share 1830 (%)**			**Whig elected1830**
	Least squares			Probit
Distance to Sevenoaks	-0.84	0.39	0.46	0.013
Spatial std. errors[a]	(0.60)	(0.75)	(0.79)	
White robust std. errors	[0.57]	[0.75]	[0.80]	
Clustered std. errors[b]				{0.014}
Adjusted R^2	0.005	0.55	0.55	
Pseudo R^2				0.45
Baseline controls included[c]	NO	YES	YES	YES
Spatial controls included[d]	NO	YES	YES	YES
Kent included	YES	YES	NO	YES
Observations	244	244	235	489

Table 5. Local Swing riots and the outcome of the 1831 and 1830 elections
Instrumental variable estimates

	(1)	(2)	(3)	(4)
Panel A	**Whig share 1831 (%)**			**Whig elected 1831**
	Second stage			
	2SLS	2SLS	2SLS	IV-probit
Riots within 10km (instrumented)	1.32	2.53	3.48	0.078
Spatial GMM std. errors[a]	(0.60)**	(1.08)**	(1.60)**	
2SLS robust std. errors	[0.46]***	[0.87]***	[1.32]***	
Anderson-Rubin p-values[f]	0.006	0.002	0.003	
Clustered std. errors[b]				{0.015}***
Panel B	The instrumented variable is ***Riots within 10km***			
	First stage			
Distance to Sevenoaks	-1.43	-1.03	-0.75	-1.06
White robust std. error	⟨0.17⟩***	⟨0.26⟩***	⟨0.24⟩***	
Clustered std. errors[b]				{0.26}***
Partial R^2 on excluded instrument	0.23	0.05	0.03	
Kleibergen-Paap F statistic	74.3***	15.2***	9.9***	

Some Consequences for Roads

- Natural to believe that democratization implies a big shift in the distribution of power in society which we'd expect to have a first order impact on public policy.
- I think the evidence is consistent with this, though not everyone agrees and there are not that many well identified studies.
- One interesting one if the investigation of Kenyan roadbuilding by Burgess et al. They show there is severe ethnic bias in roadbuilding during authoritarian periods but that it goes away in democracy.
- Very consistent with the "Regional Favoritism" results I briefly (though critically..) discussed last time.

Figure 4: Road Expenditure in Presidential Coethnic and Non-Coethnic Districts, 1963-2011

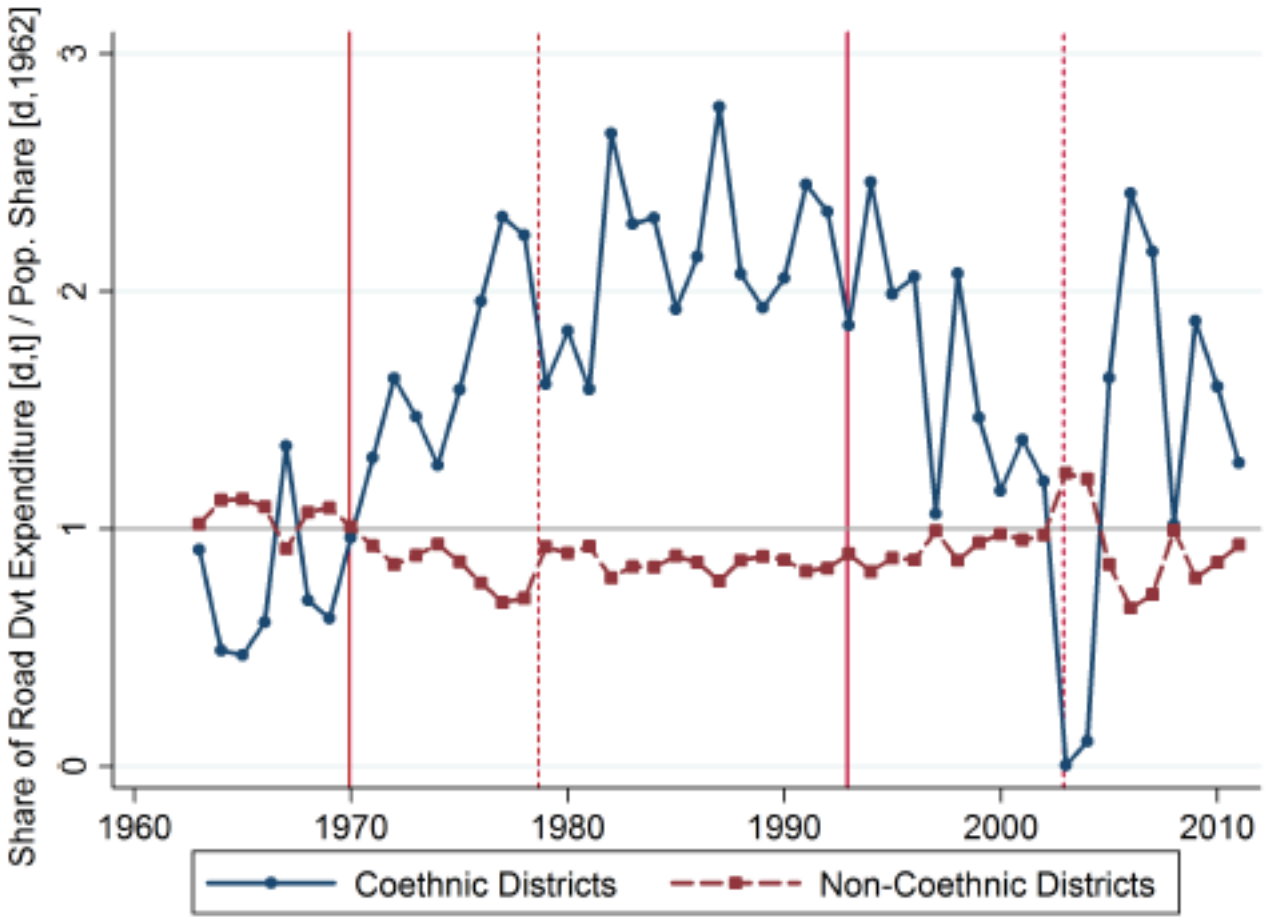
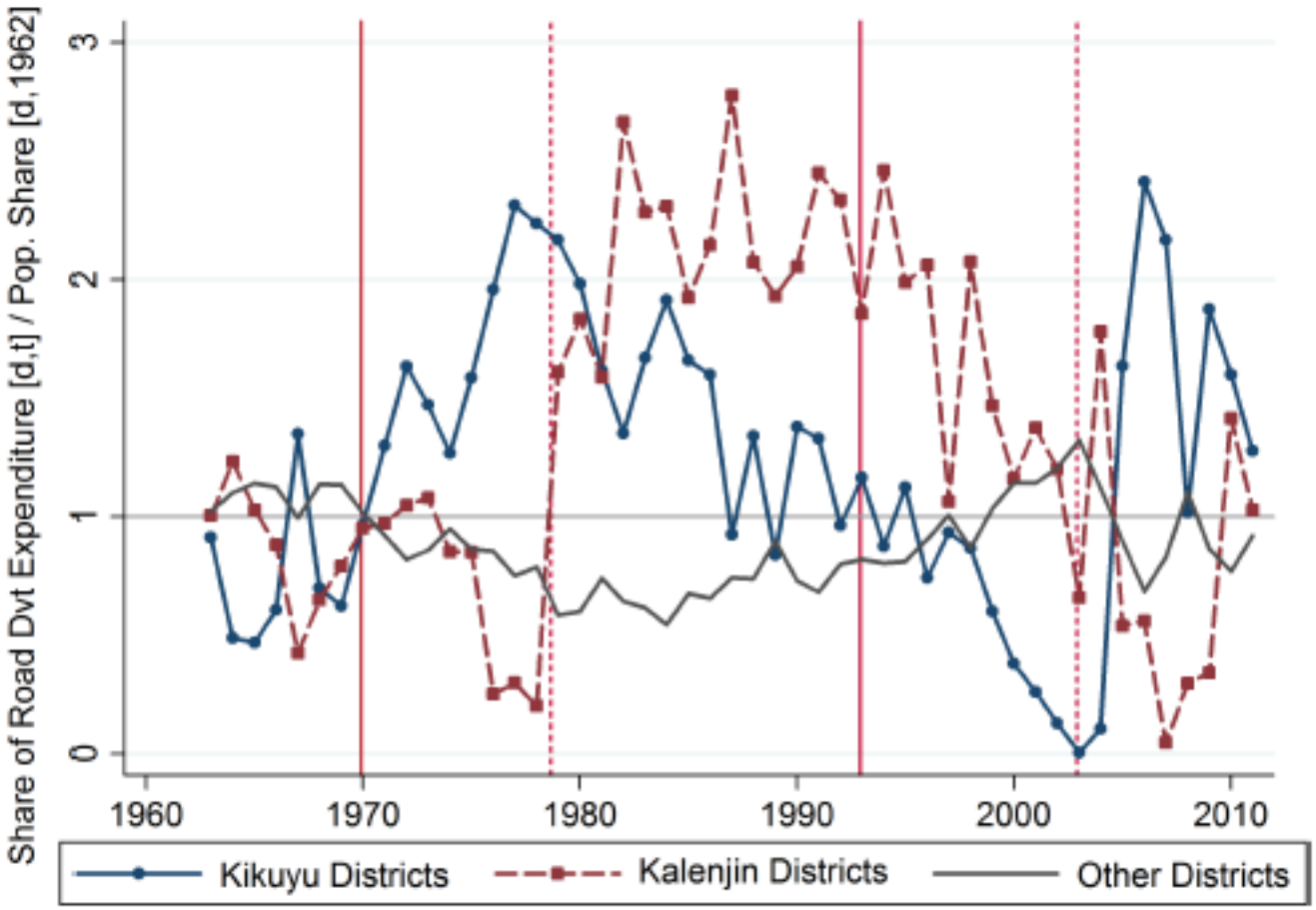


Figure 5: Road Expenditure in Kikuyu, Kalenjin and Other Ethnic Districts, 1963-2011



What else does Democracy do?

- Last time we saw in the "Regional Favoritism" paper that there are heterogeneous effects from democracy - the more democratic a country is, the less regional favoritism there is.
- According to Jones and Olken's paper democracy makes the impact of leadership on economic growth insignificant as well.

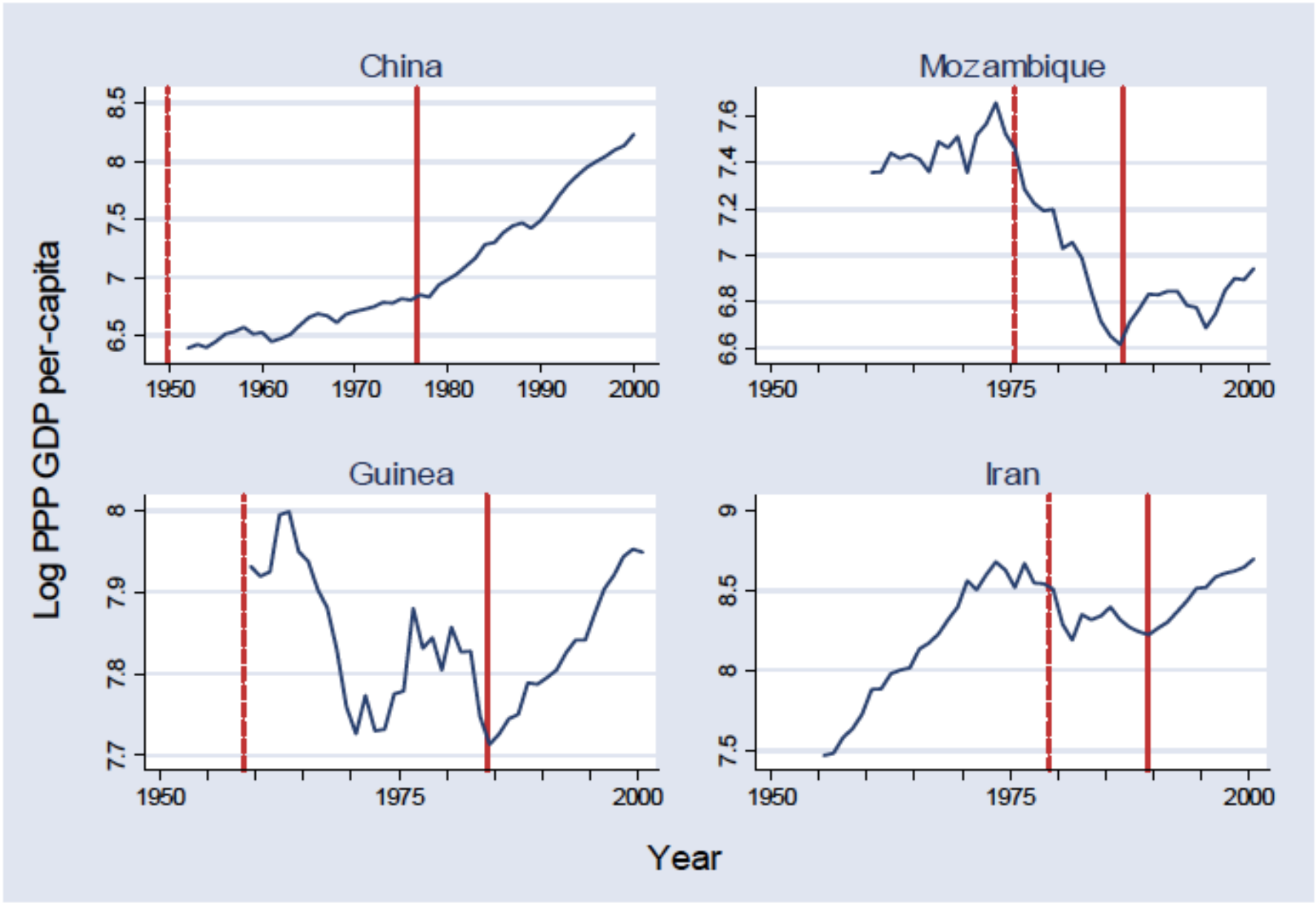


Figure I
Growth and Leader Deaths

The Devil in the Details

- There are many aspects of democratic institutions (and autocratic institutions too, but these are much less studied..)
- In my "Land and Power" (*AER* 2008) paper I investigated(with Jean-Marie Baland) the impact of the introduction of the secret ballot in Chile in 1958. (Until the early 1990s in Colombia the political parties printed their own ballot papers which you had to request when you voted, after that they introduced a unified 'tarjeton', many similar institutional reforms to examine....)
- Fujiwara examines instead the introduction of electronic voting in Brazil. His hypothesis is that this made it much easier for illiterate people, who previously had to read instructions and write in the name or number of the candidate they wanted to vote for, to vote correctly.
- Previous to the reform there were many error ridden and blank ballots that were discarded.

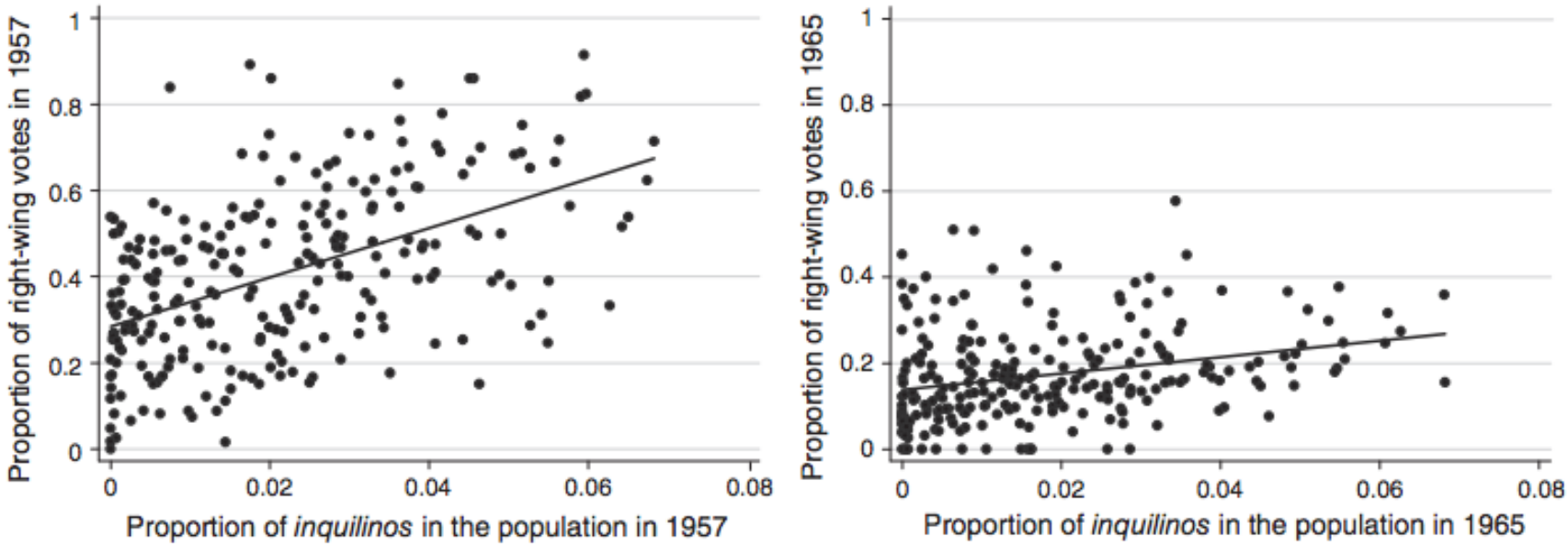
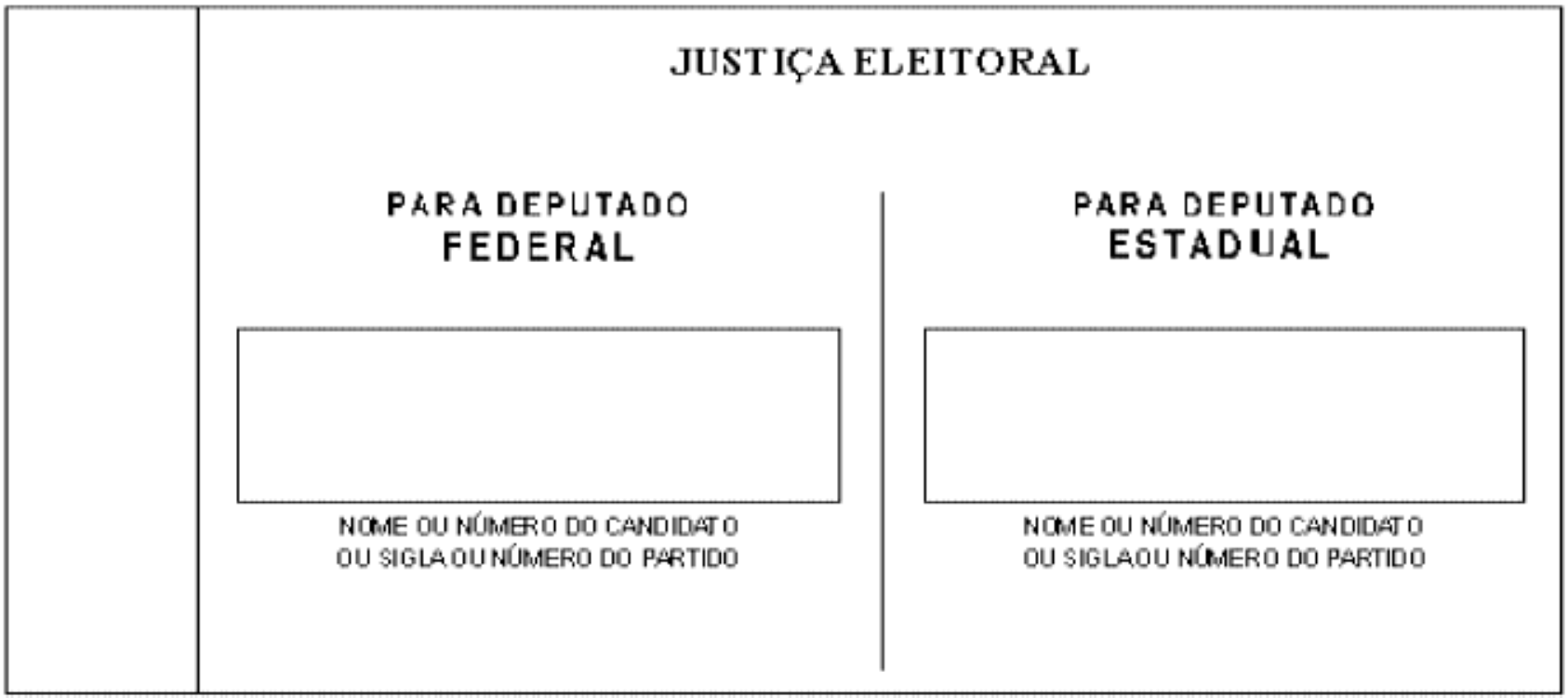


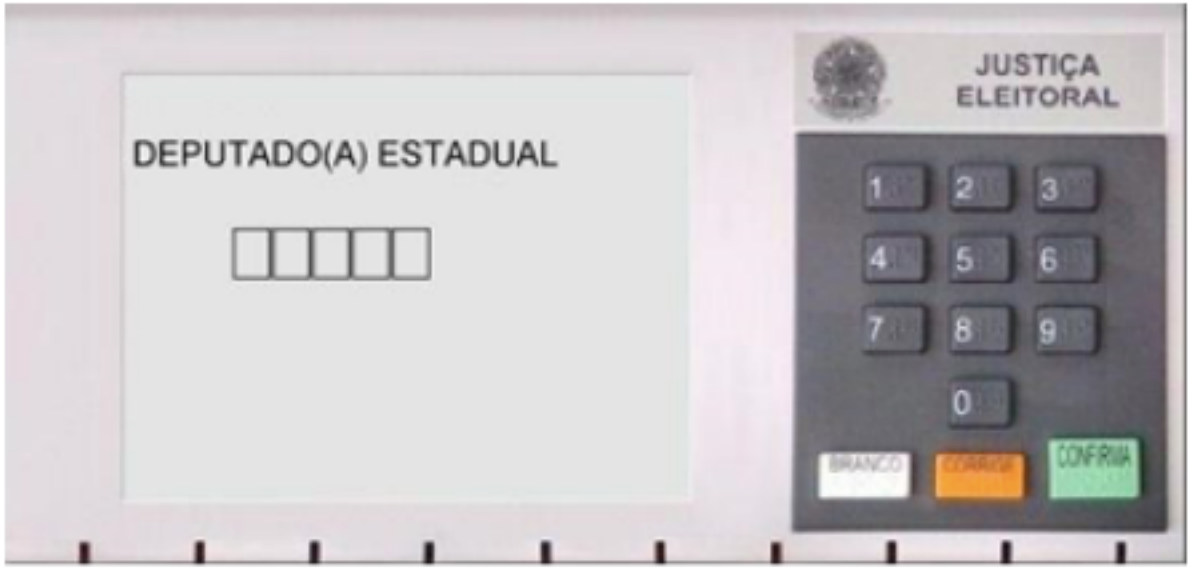
FIGURE 1. RIGHT-WING VOTES AND THE RATIO OF *INQUILINOS* TO REGISTERED VOTERS IN 1957 AND 1965
(Scatter plot and simple regression line)

The Impact

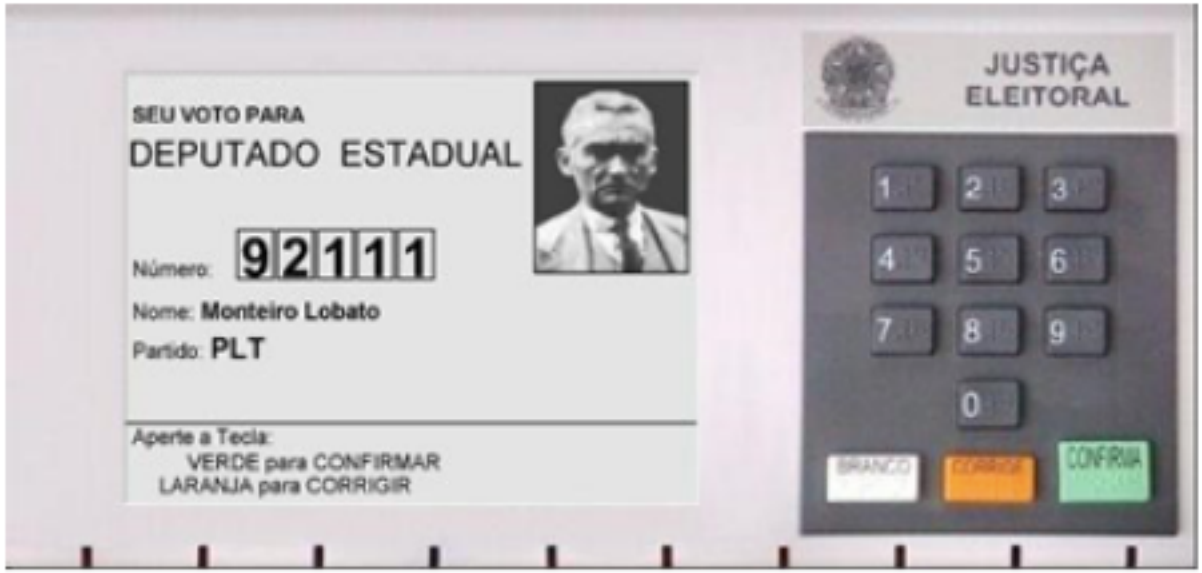
- In the 1998 election only municipalities with more than 40,500 people used the new technology. In 2002 all municipalities used it. He uses regression discontinuity design on municipal population.
- His results show that such a simple change seems to have a large effect on enfranchising uneducated voters which led to
  - election of more left-wing state legislators
  - increased public health care expenditure
  - increased health care utilization
  - led to improved infant health (birthweight)



Paper ballot



Initial screen of the voting technology



Voting for (fictional) candidate number 92111 (name: Monteiro Lobato, party: PLT)

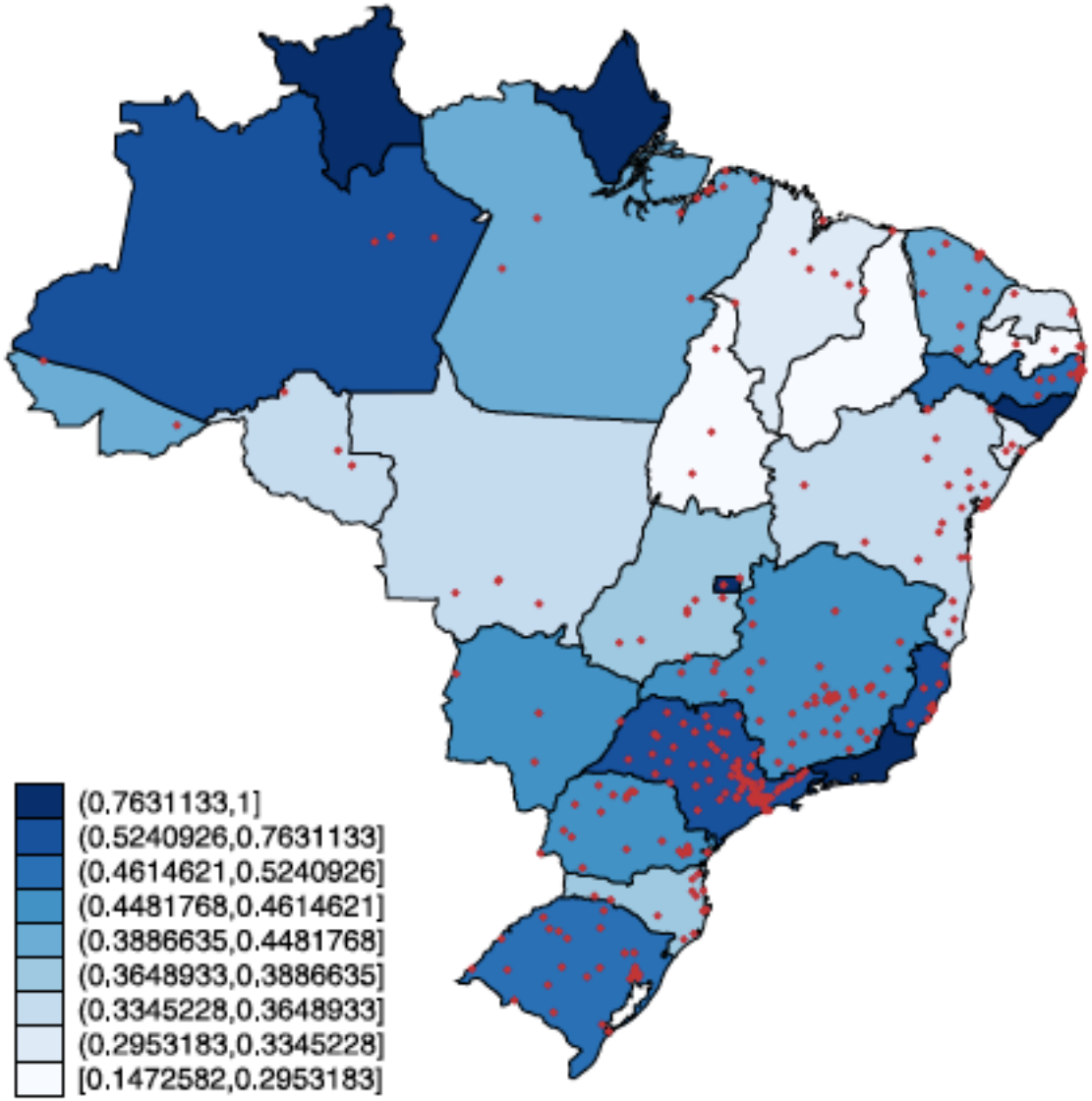


FIGURE 5.—Share of electorate using electronic voting: 1998 election. Markers represent the location of the centroid of municipalities using electronic voting in the 1998 election (except in the four states not following the discontinuous rule).

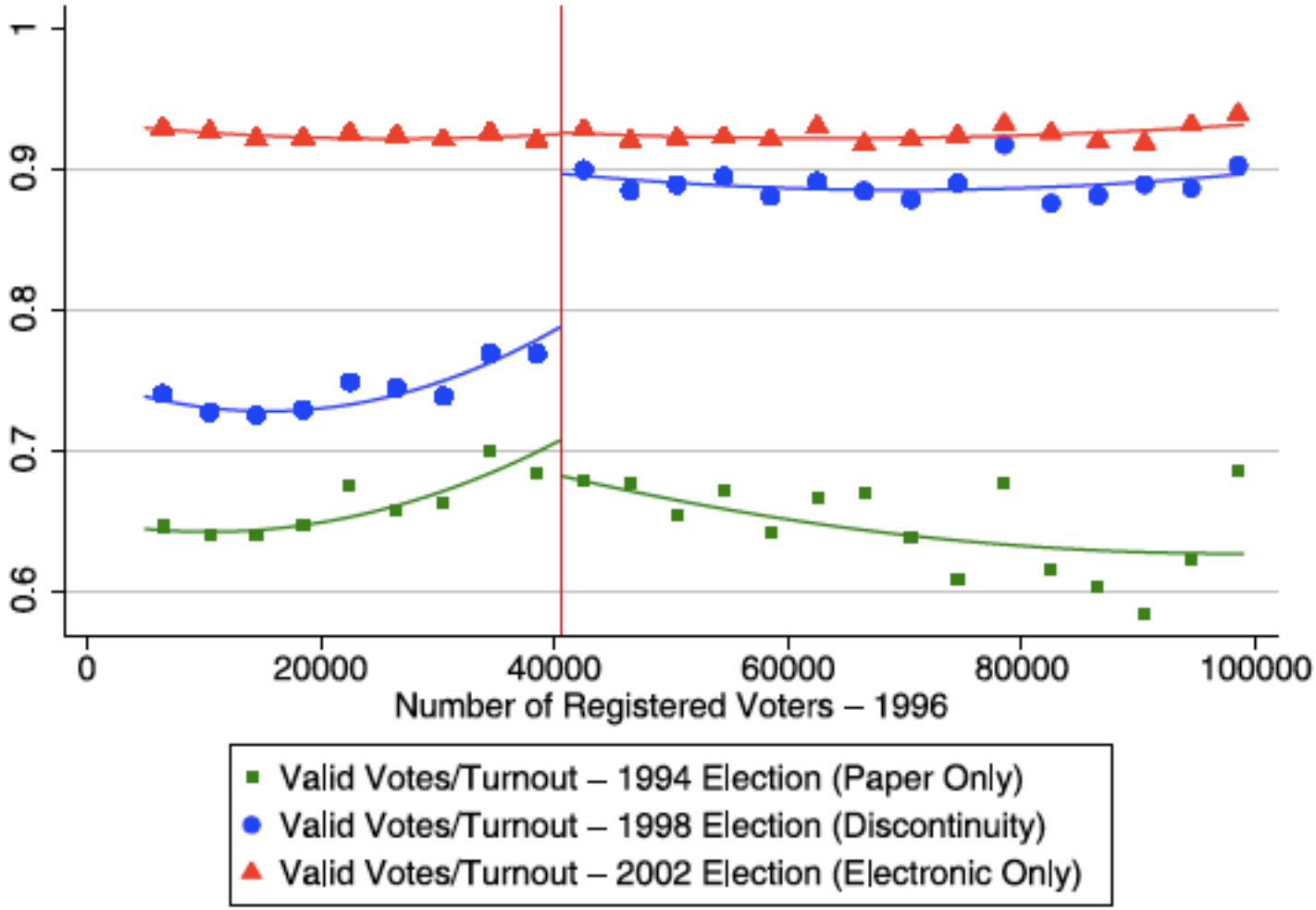

1
0.9
0.8
0.7
0.6
0
20000
40000
60000
80000
100000
Number of Registered Voters – 1996
Valid Votes/Turnout – 1994 Election (Paper Only)
Valid Votes/Turnout – 1998 Election (Discontinuity)
Valid Votes/Turnout – 2002 Election (Electronic Only)

TABLE II

TREATMENT EFFECTS OF ELECTRONIC VOTING[a]

	Full Sample Mean	Pre-Treat. Mean	IKBW {Obs.}	(1)	(2)	(3)
Panel A: Baseline Results						
Valid Votes/Turnout	0.755	0.780	11,873	0.118	0.121	0.124
(1998 Election)	[0.087]	(0.013)	{265}	(0.015)	(0.016)	(0.025)
Turnout/Reg. Voters	0.765	0.785	12,438	−0.005	0.013	0.007
(1998 Election)	[0.091]	(0.011)	{283}	(0.019)	(0.021)	(0.033)
Reg. Voters/Population	0.748	0.737	15,956	−0.004	0.010	0.032
(1998 Election)	[0.141]	(0.010)	{388}	(0.027)	(0.034)	(0.044)
Panel B: Placebo Tests (Election Years Without Discontinuous Assignment)						
Valid Votes/Turnout	0.653	0.697	17,111	−0.013	−0.008	0.006
(1994 Election)	[0.099]	(0.011)	{433}	(0.019)	(0.023)	(0.032)
Valid Votes/Turnout	0.928	0.921	17,204	0.005	0.008	0.009
(2002 Election)	[0.026]	(0.002)	{437}	(0.005)	(0.006)	(0.010)
Panel C: Do Left-Wing Parties Benefit Disproportionately From Electronic Voting?						
Vote-Weighted Party	5.397	5.162	20,000	−0.222	−0.250	−0.108
Ideology (1998 Elec.)	[0.692]	(0.094)	{558}	(0.100)	(0.081)	(0.170)
Bandwidth				IKBW	10,000	5000
Specification				Linear	Linear	Linear
N	5281			—	229	116

TABLE III

TREATMENT EFFECTS OF ELECTRONIC VOTING, BY ILLITERACY RATE[a]

	Pre-Treat. Mean	IKBW {Obs.}	(1)	(2)	(3)	(4)
Panel A: Municipalities With Above-Median Illiteracy						
Valid Votes/Turnout	0.759	11,873	0.147	0.150	0.152	0.176
	(0.017)		(0.019)	(0.015)	(0.020)	(0.031)
N	—	—	116	279	103	49
Panel B: Municipalities With Below-Median Illiteracy						
Valid Votes/Turnout	0.799	11,873	0.092	0.113	0.096	0.089
	(0.018)		(0.020)	(0.016)	(0.022)	(0.032)
N	—	—	149	279	126	67
Test of Equality in TEs (*p*-Value)	—	—	0.049	0.090	0.056	0.054
Bandwidth	—	—	IKBW	20,000	10,000	5000

TABLE IV

MAIN OUTCOMES AND THE SIGN-SWITCH PATTERN[a]

Parameter:		θ^{98}	θ^{02}	Linear Combinations	
Sample (Terms):		1994–1998 (Paper–Disc.)	1998–2002 (Disc.–Electr.)	$(\theta^{98}-\theta^{02})/2$	$(\theta^{98}+\theta^{02})/2$
	Sample Avg.	(1)	(2)	(3)	(4)
Panel A: Electoral Outcomes					
Valid Votes/Turnout	0.829	0.092	−0.111	0.102	−0.009
	[0.112]	(0.033)	(0.010)	(0.017)	(0.018)
		{0.102}	{0.002}	{0.008}	{0.630}
Seat-Weighted	4.623	−0.112	0.299	−0.206	0.094
Policy Position	[0.601]	(0.641)	(0.167)	(0.350)	(0.302)
		{0.842}	{0.154}	{0.574}	{0.800}
Panel B: Fiscal Outcomes (Health Care Spending)					
log(Total Spending)	—	−0.004	−0.257	0.127	−0.131
		(0.093)	(0.156)	(0.097)	(0.082)
		{0.946}	{0.274}	{0.254}	{0.228}
Share of Spending	0.099	0.039	−0.029	0.034	0.005
in Health Care	[0.037]	(0.017)	(0.013)	(0.008)	(0.013)
		{0.104}	{0.044}	{0.000}	{0.678}
log(Health	—	0.428	−0.677	0.552	−0.125
Spending p.c.)		(0.264)	(0.262)	(0.096)	(0.242)
		{0.200}	{0.034}	{0.000}	{0.628}
Panel C: Birth Outcomes (Mothers Without Primary Schooling)					
Share With 7+ Visits	0.362	0.122	−0.023	0.069	0.047
	[0.123]	(0.065)	(0.033)	(0.040)	(0.039)
		{0.154}	{0.558}	{0.182}	{0.320}
Share With Low-Weight	7.721	−0.370	0.528	−0.529	0.201
Births (×100)	[1.110]	(0.304)	(0.269)	(0.246)	(0.236)
		{0.266}	{0.104}	{0.044}	{0.450}
N (State-Terms)	—	54	54	—	—
N (States/First-Diffs)	—	27	27	—	—

The Transition to Democracy

- In these last several empirical examples it seems non-problematic that a transition to democracy redistributes power which generates different social choices and policies.
- But even if non-democratic elites have to give away their 'de jure' power, don't they still have a lot of de facto power (money, resources, armed thugs...)?
- Couldn't this severely limit the transformative impact of democracy?
- Yes, is the answer, Acemoglu and I developed a model to look at this (though it is there in the form of the "coup constraint" in our "Theory of Political Transitions" paper).

A Baseline Model

- Consider an infinite-horizon society in discrete time with a finite number L of citizens/workers and M elites.
- Assume that citizens are significantly more numerous than the elite:

Assumption 1 $L >> M$.

- Let $h \in \{E, C\}$ denote whether an individual is from the elite or a citizen, and $\mathcal{E}$ and $\mathcal{C}$ to denote the the set of elites and citizens, respectively.
- All agents have the same risk-neutral preferences given by

$$\sum_{j=0}^{\infty} \beta^j \left(c_{t+j}^{h,i} + G_{t+j}^{h} \right) \tag{1}$$

Public Goods

- The elite and citizens enjoy different types of public goods.
- Assume that in each period only one of two types of public goods can be provided (and this is without any costs).
- The first type of public good is only valued by the elite, while the second is only valued by the citizens.
- We use $g_{t+j} \in \{e, c\}$ to denote the decision about which public good to provide, with $g_{t+j} = e$ denoting that the public good valued by the elite is provided, hence $G^E_{t+j} = \gamma^E > 0$ and $G^C_{t+j} = 0$, while if $g_{t+j} = c$, the public good valued by the citizens is provided so $G^E_{t+j} = 0$ and $G^C_{t+j} = \gamma^C > 0$.

Production and Distribution: Competitive Markets

- Each citizen owns one unit of labor. Each member of the elite $i \in \mathcal{E}$ has access to a linear production function to produce the unique private good with constant marginal productivity of A.
- We consider production and distribution under two different sets of (reduced-form) *economic institutions*.
- In the first, labor markets are *competitive* and we index these institutions by the subscript c. When there are competitive labor markets, $\tau_t = c$, the wage rate (and the wage earnings of each citizen) is:

$$w_c \equiv A. \tag{2}$$

The return to a member of the elite with competitive markets is similarly

$$R_c \equiv 0. \tag{3}$$

Production and Distribution: Distorted Markets

- The alternative set of economic institutions favor the elite and are *labor repressive* ($\tau_t = e$).
- We parameterize the distribution of resources under labor repression as follows: $\lambda < 1$ denotes the share of national income accruing to citizens and $\delta \in [0, 1)$ is the fraction of potential national income, AL, that is lost because of the inefficiency of labor repression.
- This implies that factor prices under these economic institutions can be expressed as:

$$w_e \equiv \lambda (1 - \delta) A, \tag{4}$$

and

$$R_e \equiv (1 - \lambda) (1 - \delta) \frac{AL}{M}. \tag{5}$$

Factor Prices

- Factor prices can then be written as a function of economic institutions as $w_t = w(\tau_t = e) = w_e$, $R_t = R(\tau_t = e) = R_e$, $w_t = w(\tau_t = c) = w_c$ and $R_t = R(\tau_t = c) = R_c$. For future reference, let us also define

$$\Delta R \equiv R_e - R_c = (1-\lambda)(1-\delta)\frac{AL}{M} > 0, \tag{6}$$

and

$$\Delta w \equiv w_c - w_e = (1-\lambda(1-\delta))A > 0 \tag{7}$$

- Since the citizens are significantly more numerous, i.e., $L >> M$, (6) and (7) imply that $\Delta R >> \Delta w$.

Political Regimes and De Facto Political Power: The Elite

- There are two possible political regimes, democracy and nondemocracy, denoted respectively by D and N.
- At time t, the "state" of this society will be represented by $s_t \in \{D, N\}$.
- Political power is determined by the interaction of de facto and de jure political power. Both groups can invest to garner further de facto political power. In particular, suppose that elite $i \in \mathcal{E}$ spends an amount $\theta_t^i \geq 0$ as a contribution to activities increasing their group's de facto power. Then total elite spending on such activities will be $\sum_{i \in \mathcal{E}} \theta_t^i$, and we assume that their de facto political power is

$$P_t^E(s) = \phi^E(s) \sum_{i \in \mathcal{E}} \theta_t^i(s), \tag{8}$$

where $\phi^E(s) > 0$.

Political Regimes and De Facto Political Power: The Citizens

- Citizens' power comes from three distinct sources. First, they can invest in de facto political power.
- Second, they may sometimes solve their collective action problem and exercise additional de facto political power.
- Finally, citizens will have greater power in democracy than in nondemocracy.
- Overall, the power of the citizens when citizen $i \in \mathcal{C}$ spends an amount $\theta_t^i \geq 0$ is

$$P_t^{\mathcal{C}}(s) = \phi^{\mathcal{C}}(s) \sum_{i \in \mathcal{C}} \theta_t^i(s) + \omega_t + \eta I(s_t = D), \tag{9}$$

where $\phi^{\mathcal{C}}(s) > 0$, ω_t is a random variable drawn independently and identically over time from a given distribution $F(\cdot)$, $I(s = D) \in \{0, 1\}$ is an indicator function for $s = D$, and η is a strictly positive parameter measuring citizens' de jure power in democracy.

Timing of Events

At each date t, society starts with a state variable $s_t \in \{D, N\}$. Then:

1. The group in power decides which public good to provide, $g_t \in \{e, c\}$.
2. Each elite agent $i \in \mathcal{E}$ and each citizen $i \in \mathcal{C}$ simultaneously chooses how much to spend to acquire de facto political power for their group, $\theta_t^i \geq 0$, and P_t^E is determined according to (8).
3. The random variable ω_t is drawn from the distribution F, and P_t^C is determined according to (9).
4. If $P_t^E \geq P_t^C$ (i.e., $\pi_t = e$), a representative (e.g., randomly chosen) elite agent chooses (τ_t, s_{t+1}), and if $P_t^E < P_t^C$ (i.e., $\pi_t = c$), a representative citizen chooses (τ_t, s_{t+1}).
5. Given τ_t, R_t and w_t are determined and paid to elites and citizens respectively, and consumption takes place.

Symmetric Markov Perfect Equilibria

Suppose that all other elite agents, except $i \in \mathcal{E}$, have chosen a level of contribution to de facto power equal to $\theta^E(s)$ and all citizens have chosen a contribution level $\theta^C(s)$. Consequently, when agent $i \in \mathcal{E}$ chooses θ^i, the total power of the elite will be

$$P^E\left(\theta^i, \boldsymbol{\theta}(s) \mid s\right) = \phi^E(s)\left((M-1)\theta^E(s) + \theta^i\right).$$

The elite will have political power if

$$P^E\left(\theta^i, \boldsymbol{\theta}(s) \mid s\right) \geq \phi^C(s) L \theta^C(s) + \eta I(s = D) + \omega_t. \tag{10}$$

Expressed differently, the probability that the elite have political power in state $s \in \{N, D\}$ is

$$p(s) = F\left[\phi^E(s)\left((M-1)\theta^E(s) + \theta^i\right) - \phi^C(s) L \theta^C(s) - \eta I(s = D)\right]. \tag{11}$$

Value Function of Elite in Nondemocracy

We can write the payoff of an elite agent i recursively as follows:

$$V^E(N \mid \boldsymbol{\theta}) = \max_{\theta^i \geq 0.} \left\{ -\theta^i + \gamma^E + p(N) \left(R_e + \beta V^E(N \mid \boldsymbol{\theta}) \right) \right.$$
$$\left. + (1 - p(N)) \left(R_c + \beta V^E(D \mid \boldsymbol{\theta}) \right) \right\}. \tag{12}$$

The first-order necessary condition for the optimal choice of θ^i by elite agent i can be written as

$$\phi^E f \left[\phi^E \left((M-1)\theta^E(N) + \theta^i \right) - \phi^C L \theta^C(N) \right] \left[\Delta R + \beta \Delta V^E \right] \leq 1, \tag{13}$$

and $\theta^i \geq 0$, with complementary slackness, where
$\Delta V^E \equiv V^E(N \mid \boldsymbol{\theta}) - V^E(D \mid \boldsymbol{\theta})$

Value Function of Citizens in Nondemocracy

The value function for a citizen when the initial political state is nondemocracy is

$$V^C(N \mid \boldsymbol{\theta}) = \max_{\theta^i \geq 0.} \left\{ -\theta^i + p_0(N) \left(w_e + \beta V^C(N \mid \boldsymbol{\theta}) \right) \right.$$
$$\left. + (1 - p_0(N)) \left(w_c + \beta V^C(D \mid \boldsymbol{\theta}) \right) \right\}, \quad (14)$$

The probability that $\pi = e$ is now given by the function

$$p_0(s) = F\left[\phi^E(s) M \theta^E(s) - \phi^C(s) \left((L-1)\theta^C(s) + \theta^i \right) - \eta I(s = D) \right], \quad (15)$$

The first-order necessary condition is similar to (13) and can be written as

$$\phi^C f \left[\phi^E M \theta^E(N) - \phi^C \left((L-1)\theta^C(N) + \theta^i \right) \right] \left[\Delta w + \beta \Delta V^C \right] \leq 1 \quad (16)$$

and $\theta^i \geq 0$ with complementary slackness.

Value for Elite in Democracy

The value function for the elite in democracy is given by:

$$V^E(D \mid \boldsymbol{\theta}) = \max_{\theta^i \geq 0} \left\{ -\theta^i + p(D) \left(R_e + \beta V^E(N \mid \boldsymbol{\theta}) \right) \right. \tag{17}$$
$$\left. + (1 - p(D) \left(R_c + \beta V^E(D \mid \boldsymbol{\theta}) \right) \right\},$$

where $p(D)$ is again given by (11).
The first-order necessary condition for the investment of an elite agent in democracy then becomes:

$$\phi^E f \left[\phi^E \left((M-1)\theta^E(D) + \theta^i \right) - \phi^C L \theta^C(D) - \eta \right] \left[\Delta R + \beta \Delta V^E \right] \leq 1, \tag{18}$$

and $\theta^i \geq 0$.

Value for Citizens in Democracy

Value for the citizens in democracy, we have

$$V^C(D \mid \boldsymbol{\theta}) = \max_{\theta^i \geq 0} \left\{ -\theta^i + \gamma^C + p_0(D) \left(w_e + \beta V^C(N \mid \boldsymbol{\theta}) \right) + (1 - p_0(D)) \left(w_c + \beta V^C(D \mid \boldsymbol{\theta}) \right) \right\}, \tag{19}$$

which incorporates the utility from the public good γ^C since the regime is democratic, and $p_0(D)$ is given by (15).
The first-order necessary condition is now

$$\phi^C f \left[\phi^E M \theta^E(D) - \phi^C \left((L-1)\theta^C(D) + \theta^i \right) - \eta \right] \left[\Delta w + \beta \Delta V^C \right] \leq 1, \tag{20}$$

and $\theta^i \geq 0$.

Equilibrium

- Both (13) and (16) cannot generally hold as equalities. The comparison of (18) and (20) also leads to the same conclusion.
- ‘“Generically” only one of the two groups will invest to increase their de facto political power and this will be the one that has the highest gains from doing so.
- Recall that $L >> M$ implies $\Delta R >> \Delta w$. Consequently, it will be the elite that have more to gain from controlling politics and that will invest to increase their de facto power.

Lemma

Suppose Assumptions 1 and 2 hold. Then any symmetric MPE involves $\theta^C(D) = \theta^C(N) = 0$.

First-order Conditions

- Given Lemma 1, we can also write the equilibrium probabilities that the elite will have more political power as:

$$p(N) \equiv F\left[\phi^E(N) M\theta^E(N)\right] \text{ and } p(D) \equiv F\left[\phi^E(D) M\theta^E(D) - \eta\right]. \tag{21}$$

Next, incorporating symmetry and the fact that $\theta^C(D) = \theta^C(N) = 0$ into the first-order conditions (13) and (18) and assuming the existence of an interior solution (with $\theta^E(N) > 0$ and $\theta^E(D) > 0$), we obtain the following two equations that characterize interior equilibria:

$$\phi^E(N) f\left[\phi^E(N) M\theta^E(N)\right]\left[\Delta R + \beta \Delta V^E\right] = 1, \tag{22}$$

and

$$\phi^E(D) f\left[\phi^E(D) M\theta^E(D) - \eta\right]\left[\Delta R + \beta \Delta V^E\right] = 1. \tag{23}$$

State Dependence

- Given this assumption, we have the following characterization result.

Proposition

(State Dependence) *Suppose that Assumptions 1, 2 and 3 hold. Then any symmetric MPE leads to a Markov regime switching structure where the society fluctuates between democracy with associated competitive economic institutions ($\tau = c$) and nondemocracy with associated labor repressive economic institutions ($\tau = e$), with switching probabilities $p(N) \in (0,1)$ and $1 - p(D) \in (0,1)$. Moreover, provided that $\phi^E(N) > \phi^E(D)$, $p(D) < p(N)$.*

Equilibrium Invariance

- The role of investments in de facto power in counteracting changes in de jure power can be seen more starkly in the special case where $\phi^E(N) = \phi^E(D)$, so that elite investments in de facto power are equally effective in nondemocracy and in democracy. In this case, we obtain the following important corollary to Proposition 2.

Corollary

(Invariance) *Suppose Assumptions 1-3 hold and that* $\phi^E(N) = \phi^E(D)$. *Then there exists a unique symmetric MPE. This equilibrium involves* $p(D) = p(N) \in (0,1)$, *so that the probability distribution over economic institutions is non-degenerate and independent of whether the society is democratic or nondemocratic.*

Intuition for Result

- This corollary shows a striking result; the effects of changes in political institutions are totally offset by changes in investments in de facto power.
- The intuition for this result is straightforward and can be obtained by comparing (22) and (23) in the special case where $\phi^E(N) = \phi^E(D) = \phi^E$. These two conditions can hold as equality only if

$$f\left[\phi^E M\theta^E(N)\right] = f\left[\phi^E M\theta^E(D) - \eta\right]. \tag{24}$$

The fact that F is single peaked (cf. Assumption 2) combined with the second-order conditions implies that $M\theta^E(N) = M\theta^E(D) - \eta$, or in other words,

$$\theta^E(D) = \theta^E(N) + \frac{\eta}{\phi^E M}. \tag{25}$$

(21) then implies that $p(D) = p(N)$, which is the *invariance* result

Comparative Statics

Proposition

(Comparative Statics) *Suppose that Assumptions 1-3 hold and that* $\phi^E(N) = \phi^E(D) = \phi^E$. *Then:*

1. $\frac{\partial \theta^*(N)}{\partial \Delta R} > 0$, $\frac{\partial \theta^*(D)}{\partial \Delta R} > 0$ *and* $\frac{\partial p^*}{\partial \Delta R} > 0$.
2. $\frac{\partial \theta^*(N)}{\partial \beta} > 0$, $\frac{\partial \theta^*(D)}{\partial \beta} > 0$ *and* $\frac{\partial p^*}{\partial \beta} > 0$.
3. $\frac{\partial \theta^*(N)}{\partial M} < 0$, $\frac{\partial \theta^*(D)}{\partial M} < 0$, *and* $\frac{\partial p^*}{\partial M} < 0$.
4. $\frac{\partial \theta^*(N)}{\partial \eta} > 0$, $\frac{\partial \theta^*(D)}{\partial \eta} > 0$, *and* $\frac{\partial p^*}{\partial \eta} > 0$.
5. $\frac{\partial p^*}{\partial \phi^E} > 0$.

Effective Reform

- The comparative statics tell us about what types of reforms may lead to better institutions.
- First, if democracy creates a substantial advantage for the citizens in the form of a large value of η, then as shown by Corollary **??** this will end the cycle of institutional persistence and make the permanent consolidation of democracy and non-repressive labor markets an equilibrium.
- Second, if one of the following reforms is undertaken *simultaneously* with the switch to democracy, then the economy is less likely to switch back to nondemocracy and labor repressive economic institutions: (1) a reduction in $\phi^E(D)$, so that the elite are more limited in their ability to control democratic politics; (2) an increase in $\phi^C(D)$; (3) a reduction in ΔR, for example, by means of an increase in λ, which will reduce the potential rents that the elite can obtain and discourage further investments in de facto political power.

A Bit of a Test

- The model suggests that democracy may be captured by the de facto power of elites to such an extent that the expected economic policy would be the same as in dictatorship!
- I'm not sure there is any evidence for that but the paper by Martinez-Bravo, Mukherjee and Stegmann provides a little evidence about the potential for the capture of democracy by elites.
- The setting is the 'unanticipated' collapse of the dictatorship of Soeharto (does anyone know his last name?) in Indonesia in 1998.
- Mayors who had been appointed were allowed to serve out their five year term which meant that some districts got stuck much longer with Soeharto appointees even after democracy was created.

Results

- They show that the longer you got stuck with a Soeharto mayor after democratization
  - the lower public good provision is
  - the higher are illegal payments made to the police or military
  - the more likely it is that subsequent elected mayors are people who were connected to Soeharto or part of his Golkar party
  - the power is political competition.
- The data is consistent with Soeharto appointees using their position to significantly influence the democratic political system.

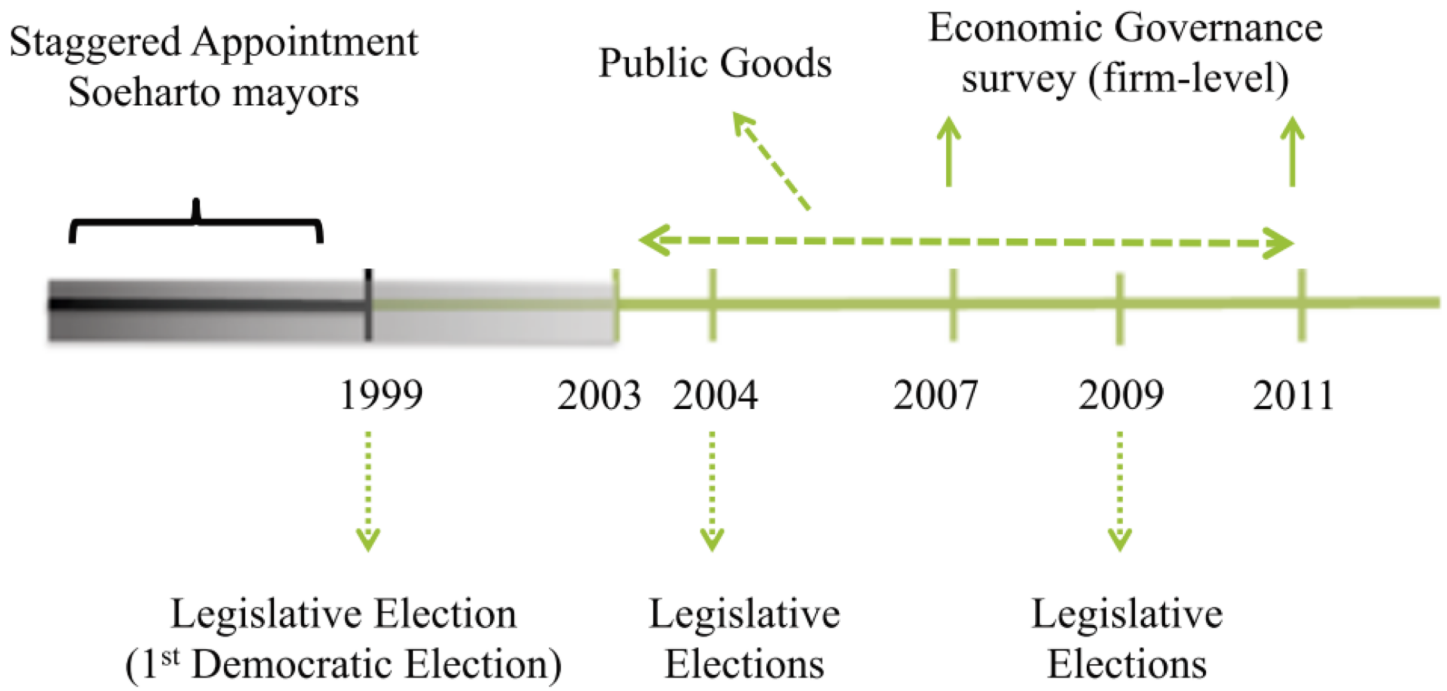


FIGURE 1.—Timeline of events and outcome measurement.

TABLE I

EFFECTS OF EXPOSURE TO SOEHARTO MAYORS ON QUALITY OF GOVERNANCE[a]

	Dependent Variables					
	Illegal Payments to Military or Police		Z-Score Education Public Goods per Capita		Z-Score Health Public Goods per Capita	
	(1)	(2)	(3)	(4)	(5)	(6)
Mean Dep. Var.	*0.14*	*0.14*	*0*	*0*	*0*	*0*
Year of Appointment	0.024***		−0.047***		−0.061**	
	(0.009)		(0.017)		(0.024)	
Appointment 1995		0.042***		−0.060		−0.021
		(0.015)		(0.062)		(0.063)
Appointment 1996		0.049**		−0.115**		−0.185***
		(0.023)		(0.057)		(0.069)
Appointment 1997		0.076***		−0.128**		−0.068
		(0.029)		(0.055)		(0.078)
Observations	8,147	8,147	13,014	13,014	12,665	12,665
R-squared	0.039	0.039	0.117	0.117	0.119	0.126
Number of Clusters	127	127	108	108	108	108

TABLE II

EFFECTS OF EXPOSURE TO SOEHARTO MAYORS ON ELITE CAPTURE[a]

	Dependent Variables				
	Elite Persistence		Support for Golkar in Parliamentary Elections		
	Elected Mayor Connected to Soeharto (2005–2008)	Elected Mayor Supported by Golkar Coalition (2005–2008)	Golkar Most Voted Party in the Village (2004)	Golkar District-Level Vote Share (2004)	Golkar District-Level Vote Share (2009)
	(1)	(2)	(3)	(4)	(5)
Dep. Var. Mean	*0.71*	*0.21*	*0.32*	*21.62*	*15.22*
	Panel A. Linear Treatment Effect				
Year of Appointment	0.109**	0.131***	0.072***	1.595**	1.381**
	(0.044)	(0.048)	(0.018)	(0.665)	(0.658)
Observations	119	122	21,826	129	129
R-squared	0.218	0.084	0.196	0.509	0.306
Number of Districts	119	122	129	129	129
	Panel B. Flexible Treatment Effect				
Appointment 1995	−0.048	0.019	0.072**	−0.396	0.002
	(0.106)	(0.095)	(0.036)	(1.702)	(1.675)
Appointment 1996	0.215*	0.235*	0.157***	2.421	1.580
	(0.126)	(0.131)	(0.051)	(1.863)	(1.643)
Appointment 1997	0.287**	0.376**	0.204***	4.581**	4.502**
	(0.139)	(0.169)	(0.057)	(2.228)	(2.214)
Observations	119	122	21,826	129	129
R-squared	0.242	0.098	0.197	0.516	0.313
Number of Districts	119	122	129	129	129

TABLE III

EFFECTS OF EXPOSURE TO SOEHARTO MAYORS ON POLITICAL COMPETITION[a]

	Dependent Variables					
	Number of Candidates (1)	Number of Independent Candidates (2)	Share of Independent Candidates (3)	Herfindahl Index (4)	Incumbent Not Reelected (5)	Z-Score col 1–5 (6)
Mean Dep. Var.	*3.85*	*0.13*	*0.02*	*0.62*	*0.40*	*0.00*
			Panel A. Linear Treatment Effect			
Year of Appointment	−0.282*	−0.153**	−0.029***	−0.000	−0.096*	−0.200**
	(0.143)	(0.068)	(0.011)	(0.013)	(0.053)	(0.081)
Observations	129	129	129	126	129	126
R-squared	0.193	0.247	0.238	0.207	0.124	0.272
			Panel B. Flexible Treatment Effect			
Appointment 1995	−0.166	−0.188	−0.033	−0.011	−0.035	−0.210
	(0.271)	(0.129)	(0.022)	(0.028)	(0.122)	(0.157)
Appointment 1996	0.040	−0.130	−0.040*	0.034	−0.129	−0.142
	(0.358)	(0.151)	(0.022)	(0.035)	(0.142)	(0.183)
Appointment 1997	−1.388***	−0.639***	−0.104***	−0.041	−0.329*	−0.875***
	(0.528)	(0.240)	(0.039)	(0.046)	(0.181)	(0.286)
Observations	129	129	129	126	129	126
R-squared	0.238	0.275	0.248	0.225	0.128	0.303

Dictatorship and Democracy

- We've seen some models and evidence that suggests that democracies ought to provide more public goods than dictatorships.
- But this is subject to a lot of caveats - is democracy captured?
- What also seems to matter is the details of democracy - is there a secret ballot and how does balloting take place?
- Some evidence that democracy is created by the collective action of the disenfranchised, like in Sudan and Algeria in the past couple of weeks, but that pressure is hard to turn into real democracy.