Awakening Leviathan

The Effect of Democracy on State Capacity, 1960-2009

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Peking University 2015
28 July 2015

Democracy, state capacity, and development

- State's ability to implement public policies (Skocpol, 1985; Mann 1984; Sikkink, 1991; Slater, 2010; Rogers & Wellers, 2014)
- The dichotomous approach: state capacity and democracy as separate domains (Levi, 2006; Hanson, forthcoming)
  - Good governments are ... (1) representative and accountable... and (2) effective... (Levi, 2006, 5).
- The sequentialist approach: state capacity should and does come before democracy (Fukuyama 2014; Linz & Stepan, 1996; Andersen et al., 2014)
- Largely agreed on the importance of state capacity

State-building **over** democratization

- Huntington: "The most important political distinction among countries concerns not their form of government but their degree of government" (1968, p. 1)
- Linz & Stepan: "No state, no democracy" (1996, p. 13)
- Fukuyama: "Stateness first" (2004)

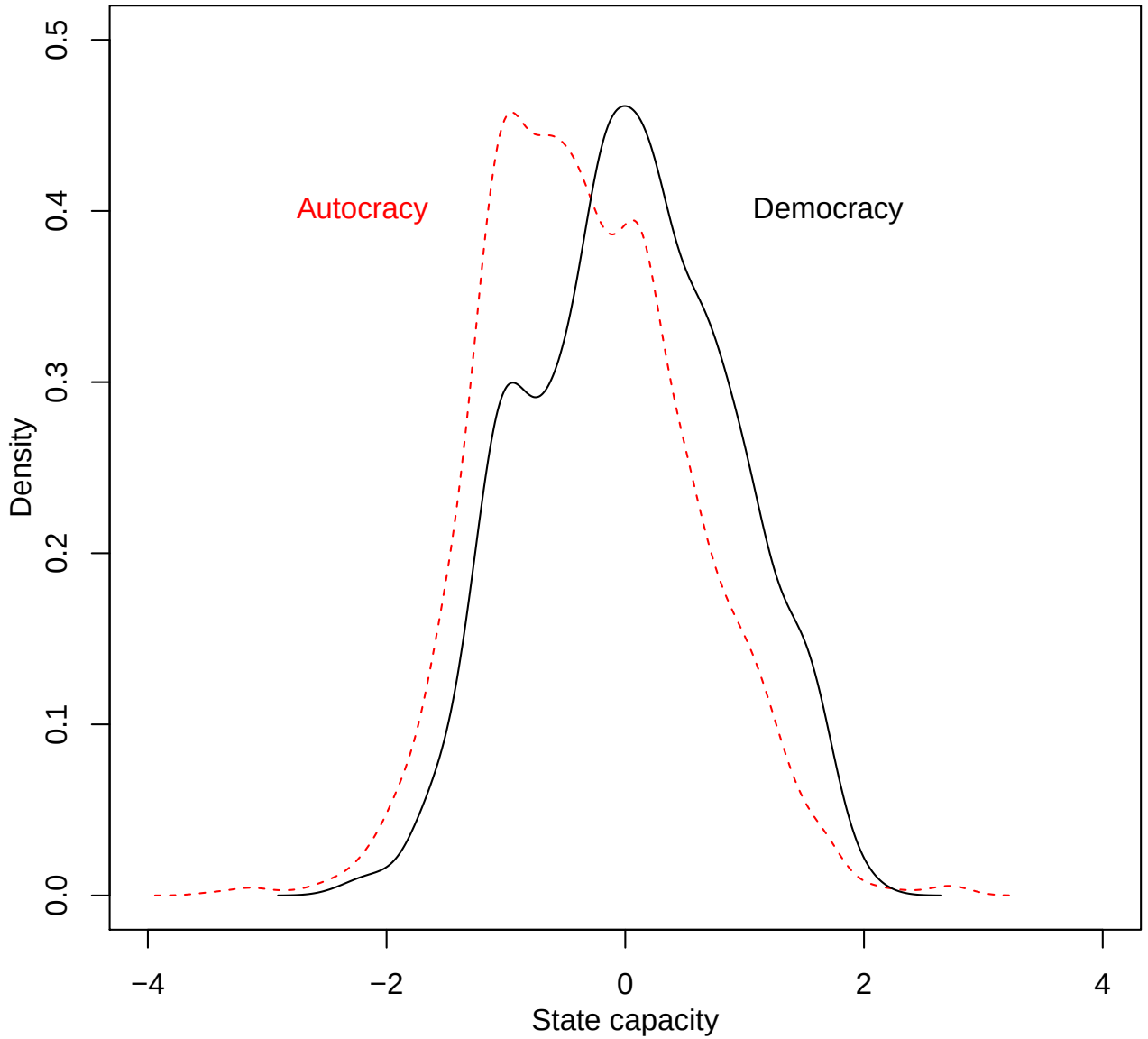
State-building **over** democratization

- Problem with the dichotomous approach: state capacity endogeous to democracy
- Problem with the sequentialist approach: democracy may enhance state capacity

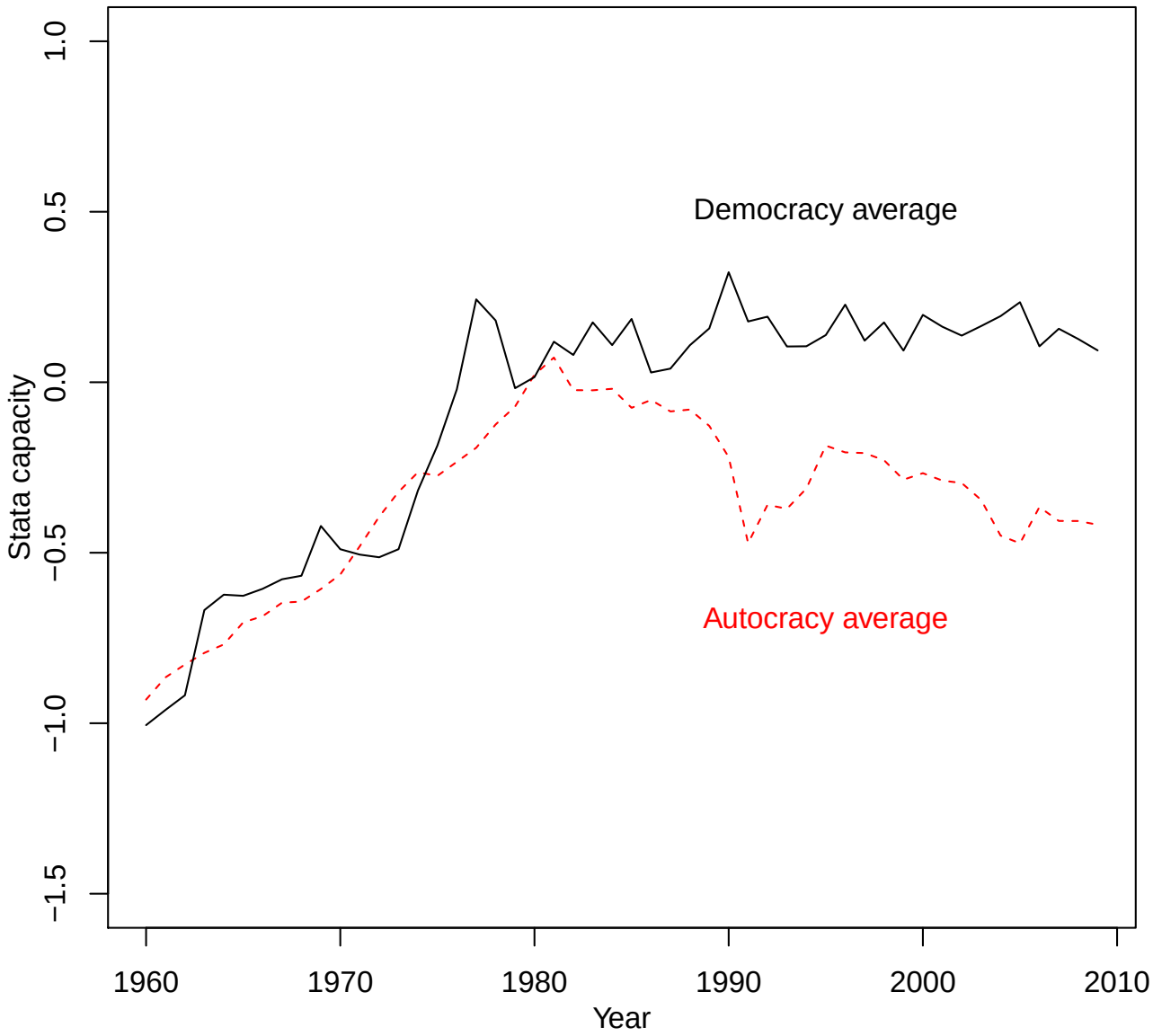
Research question

Does democratization lead to an **increase** in state capacity?

Research question



Research question



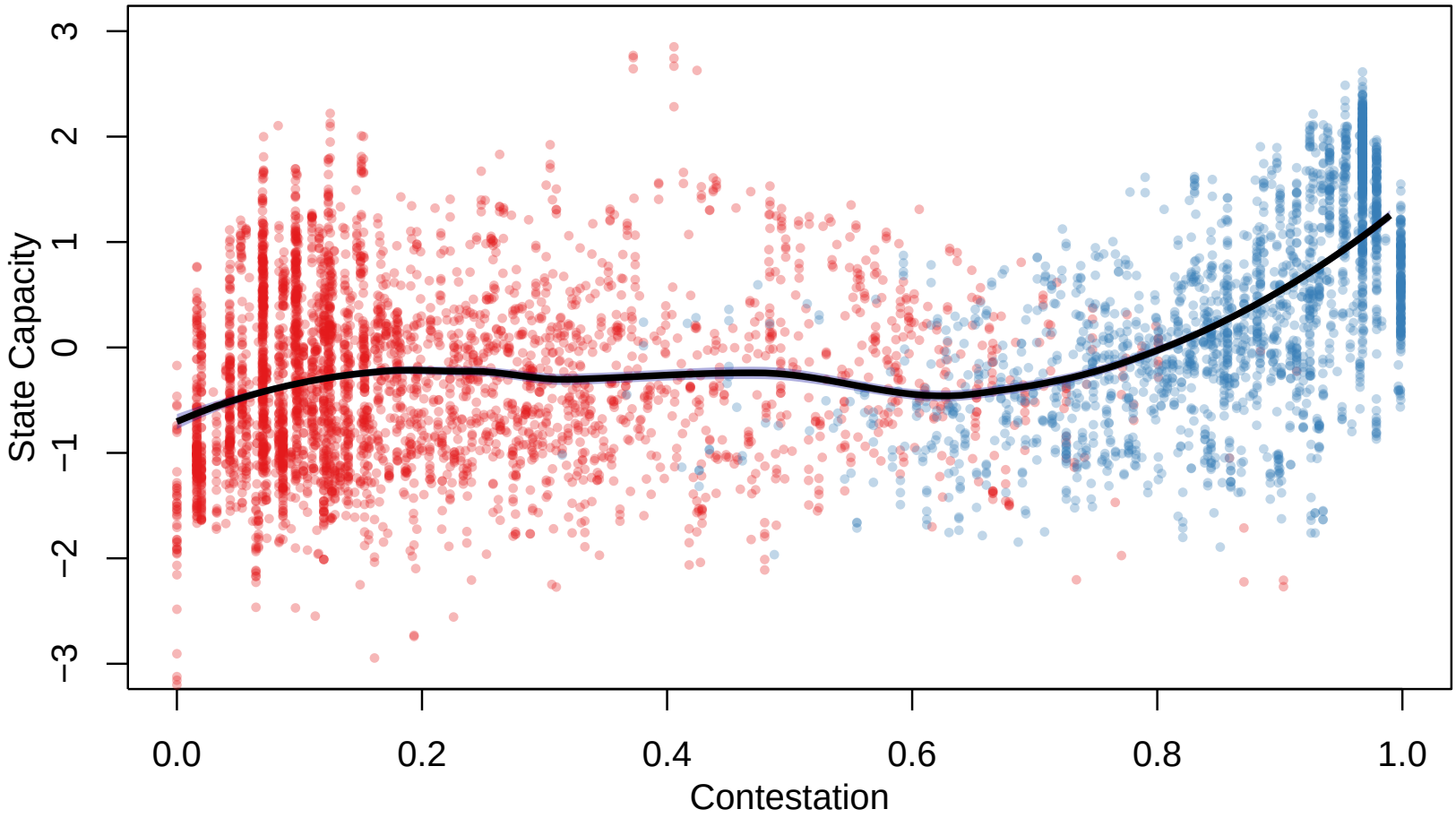
Why? Proposed mechanisms

- Integrity (Chowdhury, 2004)
- Legitimacy (Bratton & Chang, 2006)
- Stability

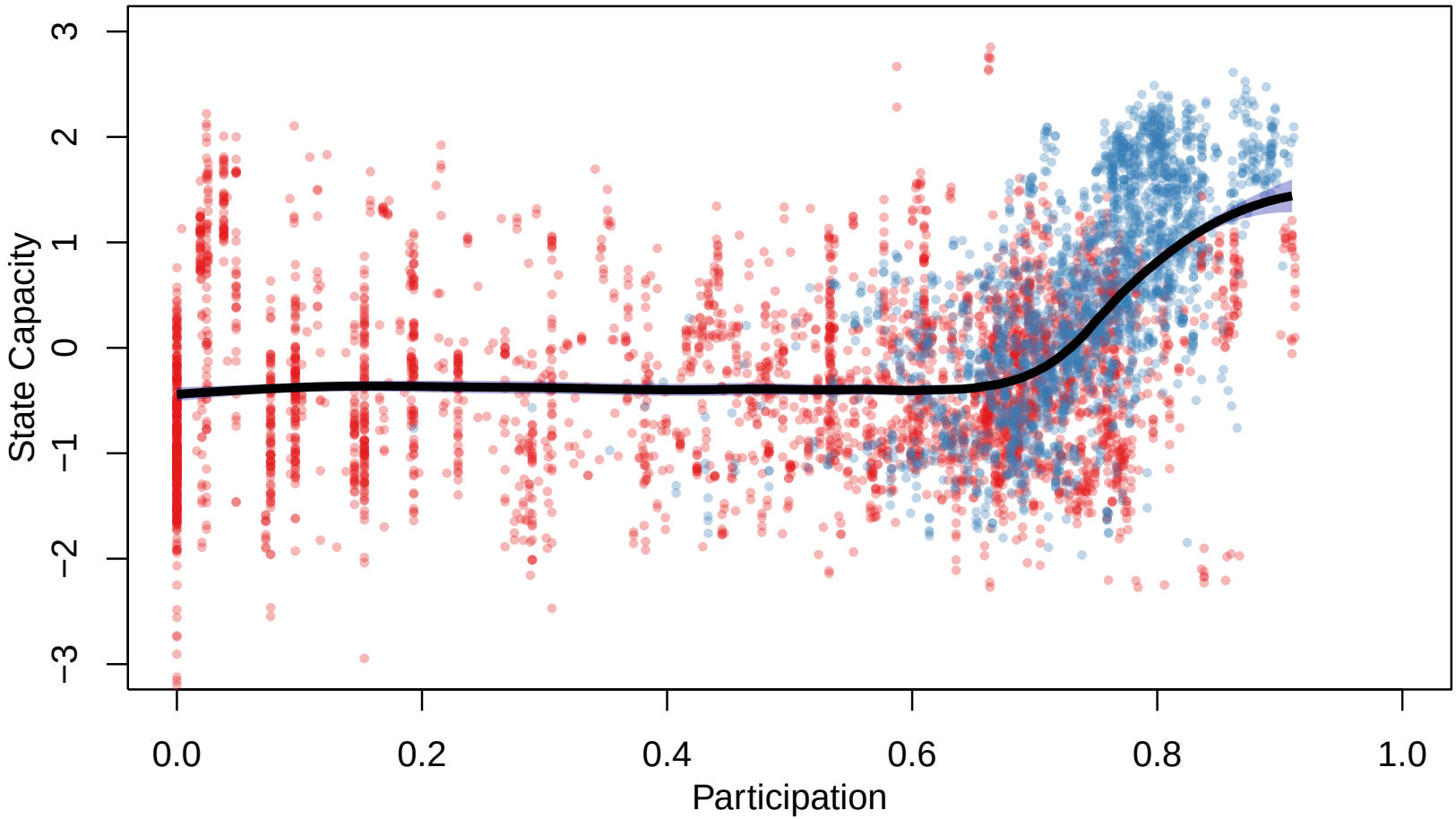
Why? Our mechanisms

- Contestation (Moe, 1990; Geddes, 1994; Grzymala-Busse, 2007)
  - Anticipation: anticipating exit from power, the incumbent coalition establish formal state institutions that would constrain both themselves *and their successors*.
  - Moderation: opposition capable of moderating incumbent's behavior
  - Examples: South Korea, Lithuania, Spain, etc.
- Participation

Mechanisms: contestation strengthens the state



Mechanisms: contestation strengthens the state



1. Motivation

2. Data and Empirical Strategies
   - Data
   - Estimation Strategies

3. Results
   - Baseline Results
   - IV Estimations and Robustness Checks
   - Mechanisms

4. Concluding thoughts

Measuring state capacity: integrating the three dimensions

- Administrative capacity (e.g. ICRG bureaucratic quality index)
- Extractive capacity (e.g. tax/GDP, income tax/GDP)
- Coercive capacity (e.g. Military personnel per capita)

Our criteria

- Wide spatial and temporal coverage
- A latent variable
- No conflation with other variables, especially democracy

Introducing Hanson & Sigman (2013)

- A latent variable analysis using Bayesian Markov Chain Monte-carlo method
- 24 existing "safe" indicators mapped onto the three dimensions
- Impressive data coverage (163 countries for 1960-2009)

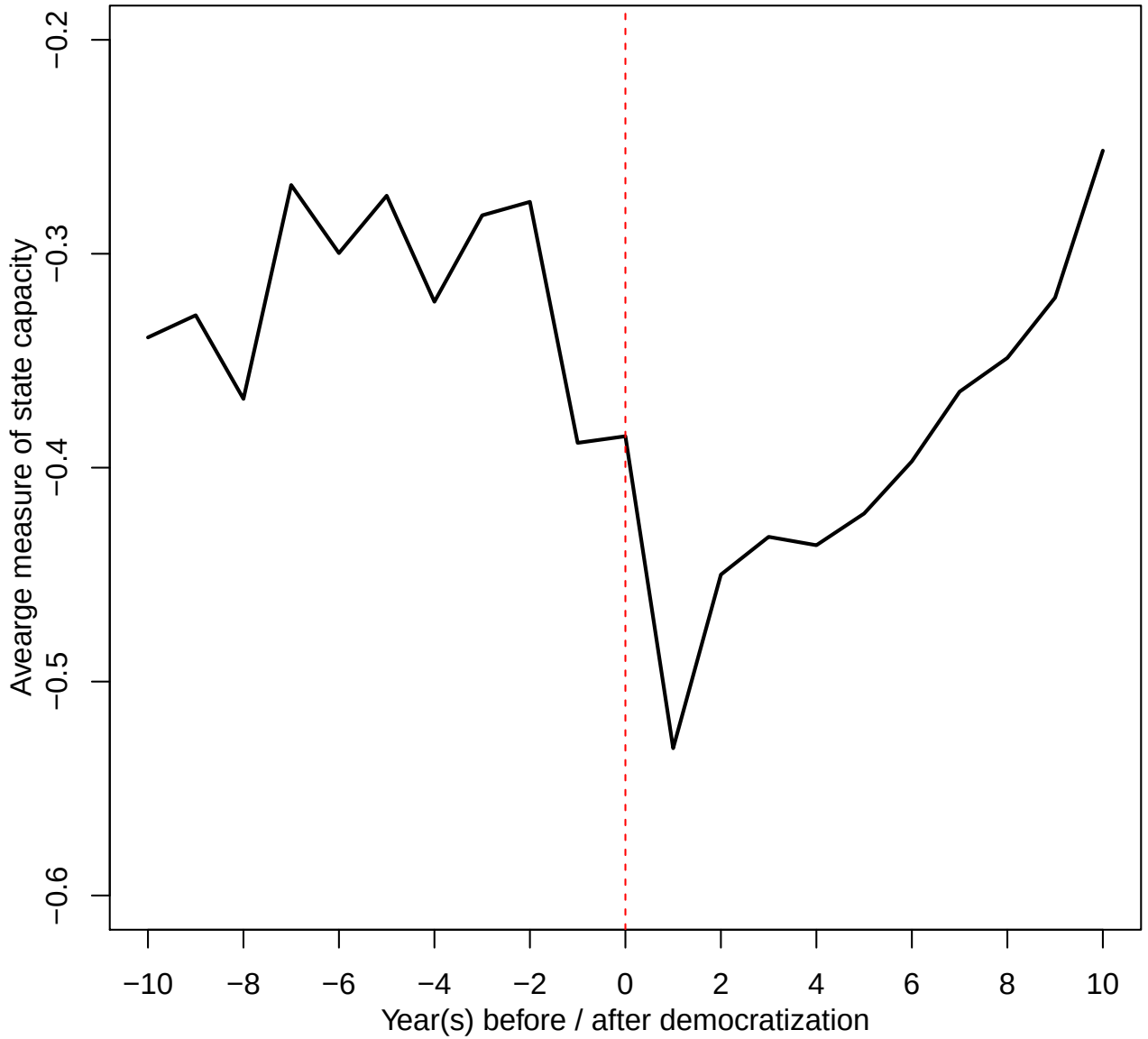
Measuring democratization

- Binary measure: Boix, Miller & Rosato (2013)
- Continuous measure: Polity IV
- Democratization defined as "any process in which countries become democracies or not" (Coppedge, 2012).

Descriptive statistics

Variable	Obs.	Mean	Median	SD	Min.	Max.
State capacity	5,722	-0.25	-0.29	0.86	-3.51	2.86
Democracy	5,722	0.24	0.00	0.43	0.0	1.0
Polity>6	5,722	0.23	0.00	0.42	0.0	1.0
Polity Score/10	5,722	-0.21	-0.50	0.66	-1.00	1.00
Log population	5,619	8.95	9.01	1.45	4.81	14.07
ELF	5,144	0.45	0.48	0.31	0.00	1.00
Log per capita GDP	5,297	7.68	7.66	0.95	5.33	10.67
Urban population	5,630	0.22	0.18	0.18	0.00	1.00
Agricultural share	5,307	0.24	0.20	0.17	0.00	0.94
Minerals	5,250	0.08	0.02	0.14	0.00	0.95
Resources/income	5,529	-2.62	-3.08	1.97	-4.61	4.40
Civil war	5,722	0.08	0.00	0.28	0.00	1.00
Log foreign aid	5,315	2.40	2.50	1.53	0.00	6.69
literacy	5,595	0.60	0.65	0.29	0.00	1.00
Exports/GDP	5,307	0.31	0.25	0.24	0.00	2.33
Trade/GDP	5,153	0.70	0.59	0.48	0.02	4.57
Tax/GDP	5,053	0.16	0.15	0.09	0.01	0.74
Log millitary personnel	5,618	3.59	3.58	1.66	0.00	8.47

Estimation strategies: challenges



Estimation strategies

- Sufficient number of year lags in the two-way fixed-effect framework (Acemoglu et al., 2014)

$$Capacity_{it} = \beta D_{i,t-1} + \sum_{j=1}^{p} \delta_j Capacity_{i,t-j} + X'_{i,t-1}\theta + \alpha_i + \delta_t + \epsilon_{it},$$

- Calculating the cumulative effect:

$$CE = \frac{\hat{\beta}}{1 - \sum_{j=1}^{p} \hat{\delta}_j}$$

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Baseline results

Dependent variable	State Capacity (t)				
	(1)	(2)	(3)	(4)	(5)
Democracy (*t-1*)	0.099*	0.026**	0.024**	0.021**	0.022**
	(0.051)	(0.012)	(0.010)	(0.010)	(0.009)
State Capacity (*t-1*)		0.839***	0.779***	0.785***	0.791***
		(0.021)	(0.029)	(0.032)	(0.033)
State Capacity (*t-2*)			0.113***	0.106***	0.087***
			(0.026)	(0.028)	(0.030)
State Capacity (*t-3*)				0.004	0.000
				(0.016)	(0.019)
State Capacity (*t-4*)					0.016
					(0.017)
Cumulative effect	0.099	0.161	0.222	0.200	0.208
State and year FEs	x	x	x	x	x
Observations	7,012	7,012	6,838	6,664	6,490
Number of countries	174	174	174	174	172
R-squared	0.857	0.960	0.966	0.967	0.968

Note: Robust standard error clustered at the state level are in the parentheses. State and year fixed effects are controlled for in all the regressions. *** p<0.01, ** p<0.05, * p<0.1

Including controls

	Dependent variable: State Capacity (t)						
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Democracy (t-1)	0.022**	0.026**	0.023**	0.027***	0.025**	0.023**	0.023*
	(0.009)	(0.011)	(0.011)	(0.010)	(0.010)	(0.009)	(0.011)
Log population (t-1)		-0.004					0.092***
		(0.004)					(0.020)
ELF (t-1)		-0.079					0.008
		(0.055)					(0.075)
Log per capita GDP (t-1)			0.096***				-0.056
			(0.018)				(0.059)
Agricultural share (t-1)			0.000				-0.046
			(0.075)				(0.036)
Literacy rate (t-1)			-0.110**				-0.102***
			(0.044)				(0.035)
Minerals (t-1)				-0.131			-0.261**
				(0.105)			(0.102)
Resources/income (t-1)				0.018**			0.017***
				(0.008)			(0.006)
Log foreign aid (t-1)					0.000		0.005
					(0.003)		(0.004)
Tax/GDP (t-1)					0.132***		0.105***
					(0.030)		(0.030)
Civil war (t)						-0.023	-0.025*
						(0.014)	(0.015)
Territorial threat (t)						0.022	0.015
						(0.021)	(0.018)
Cumulative effect	0.208	0.239	0.148	0.235	0.219	0.219	0.135
Four lags of state capacity	x	x	x	x	x	x	x
State and year FEs	x	x	x	x	x	x	x
Observations	6,490	5,487	5,444	5,708	6,071	6,490	4,955
Number of countries	172	154	149	159	156	172	141
R-squared	0.968	0.970	0.971	0.969	0.970	0.968	0.973

Concerns of endogeneity

- The specter of reverse causation could still haunt us...
- Unobserved time-varying confounders might still exist despite a large set of controls
- Solution: "**Diffusion** is no illusion" (Brinks & Coppedge, 2006)!

An instrumental variable (IV) design

- Following the footsteps of Stasavage (2005), Miller (2014), Albertus & Menaldo (2014), and Acemoglu et al. (2014)
- Using regional democratic diffusion to instrument for democracy

IV Results

Dependent variables	Democracy (*t-1*)	State capacity (t)	Democracy (*t-1*)	State capacity (*t*)
	[1st stage]	[2nd stage]	[1st stage]	[2nd stage]
	(1)	(2)	(3)	(4)
Democracy (*t-1*)		0.105**		0.133**
		(0.047)		(0.056)
Democratic wave (*t-2*)	0.630***		0.654***	
	(0.099)		(0.110)	
Democratic wave (*t-3*)	0.073		0.144	
	(0.136)		(0.152)	
Democratic wave (*t-4*)	0.058		-0.084	
	(0.099)		(0.111)	
Log population (*t-1*)			-0.011	-0.038
			(0.038)	(0.039)
ELF (*t-1*)			0.266***	-0.132***
			(0.058)	(0.045)
Log per capita GDP (*t-1*)			0.081	-0.047
			(0.070)	(0.056)
Agricultural share (*t-1*)			-0.037	0.098***
			(0.022)	(0.022)
Literacy rate (*t-1*)			-0.633***	0.079
			(0.082)	(0.097)
Minerals (*t-1*)			-0.357***	-0.224**
			(0.084)	(0.107)
Resources/income (*t-1*)			0.008	0.017***
			(0.008)	(0.006)
Log foreign aid (*t-1*)			0.046***	-0.001
			(0.006)	(0.006)
Export/GDP (*t-1*)			0.120**	0.086***
			(0.047)	(0.032)
Civil war (*t*)			0.050***	-0.030*
			(0.016)	(0.016)
			0.026	0.009
			(0.029)	(0.018)
Four lags of state capacity	x	x	x	x
State and year FEs	x	x	x	x

Robustness checks

- Measure of democratic institutions
- Spill-over of state-building
- Initial conditions

Robustness checks

Dependent variable	State Capacity (t)			
	(1)	(2)	(3)	(4)
Polity>6 (*t-1*)	0.021**	0.027**		
	(0.009)	(0.011)		
Polity Score/10 (*t-1*)			0.022***	0.026***
			(0.007)	(0.008)
Log population (*t-1*)		-0.045		-0.042
		(0.036)		(0.036)
ELF (*t-1*)		-0.100***		-0.108***
		(0.033)		(0.033)
Log per capita GDP (*t-1*)		-0.055		-0.062
		(0.059)		(0.058)
Agricultural share (*t-1*)		0.093***		0.094***
		(0.020)		(0.019)
Literacy rate (*t-1*)		0.007		0.009
		(0.076)		(0.077)
Minerals (*t-1*)		-0.257**		-0.255**
		(0.104)		(0.099)
Resources/income (*t-1*)		0.017***		0.017***
		(0.006)		(0.005)
Log foreign aid (*t-1*)		0.005		0.004
		(0.004)		(0.004)
Tax/GDP (*t-1*)		0.102***		0.101***
		(0.030)		(0.030)
Civil war (*t-1*)		-0.025*		-0.027*
		(0.014)		(0.014)
		0.014		0.014
		(0.018)		(0.018)
Four lags of state capacity	x	x	x	x
State and year FEs	x	x	x	x
Observations	6,490	4,955	6,490	4,955

Robustness checks

Dependent variable	State Capacity (t)		
	(1)	(2)	(3)
Democracy (*t-1*)	0.022**	0.027***	0.024**
	(0.009)	(0.010)	(0.012)
Regional Capacity (*t-1*)		0.109**	0.060
		(0.043)	(0.042)
Regional Capacity (*t-2*)		-0.058	-0.021
		(0.049)	(0.049)
Regional Capacity (*t-3*)		0.021	0.012
		(0.042)	(0.046)
Regional Capacity (*t-4*)		-0.020	-0.032
		(0.030)	(0.034)
Cumulative effect	0.239	0.185	0.405
Four lags of state capacity	x	x	x
State and year FEs	x	x	x
Controls			x
Observations	6,490	6,490	4,955
Number of countries	172	172	141
R-squared	0.968	0.968	0.973

Note: Robust standard error clustered at the state level are in the parentheses. Four lags of state capacity, as well as state and year fixed effects, are controlled for in all the regressions. *** p<0.01,

Robustness checks

	Dependent variable: State Capacity (t)					
	(1)	(2)	(3)	(4)	(5)	(6)
Democracy (*t-1*)	0.022**	0.024**	0.028***	0.024**	0.024***	0.023*
	(0.009)	(0.009)	(0.009)	(0.009)	(0.009)	(0.012)
Cumulative effect	0.208	0.250	0.283	0.235	0.255	0.141
Initial state capacity * i.year		x			x	x
Initial democratic history * i.year			x		x	x
Initial state history * i.year				x	x	x
Four lags of state capacity	x	x	x	x	x	x
State and year FEs	x	x	x	x	x	x
Controls						x
Observations	5,178	5,178	5,127	4,804	4,804	4,269
Number of countries	136	136	133	121	121	108
R-squared	0.952	0.953	0.953	0.953	0.954	0.955

Note: Robust standard error clustered at the state level are in the parentheses. Four lags of state capacity, as well as state and year fixed effects, are controlled for in all the regressions. *** p<0.01, ** p<0.05, * p<0.1. Control variables include log population, ELF, log per capita GDP, share of urban population, share of agriculture in economy, minerals, the ratio of resources to income, civil war, log foreign aid. All controls are lagged for one year.

Mechanisms

Dependent variable	State Capacity (t)					
	(1)	(2)	(3)	(4)	(5)	(6)
Democracy (*t-1*)	0.027**		0.003		0.020	0.004
	(0.011)		(0.020)		(0.014)	(0.020)
Contestation (*t-1*)		0.042***	0.038			0.038
		(0.015)	(0.027)			(0.032)
Participation (*t-1*)				0.027	0.015	0.010
				(0.018)	(0.022)	(0.024)
Controls	x	x	x	x	x	x
State and year FEs	x	x	x	x	x	x
Four lags of state capacity	x	x	x	x	x	x
Observations	4,060	3,835	3,835	3,837	3,837	3,828
Number of countries	141	141	141	141	141	141
R-squared	0.955	0.953	0.953	0.953	0.953	0.953

Note: Robust standard error clustered at the state level are in the parentheses. Four lags of state capacity, a full set of control variables, as well as state and year fixed effects, are

Modes of democratization (Miller, 2014)

Dependent variable	State Capacity (t)					
Mode of transition	Coup-led Democratization		Transition from Electoral Authoritarianism		Other Modes of Transitions	
	(1)	(2)	(3)	(4)	(5)	(6)
Democracy (*t-1*)	0.054***	0.047***	0.013	-0.006	0.012	0.014
	(0.011)	(0.015)	(0.017)	(0.024)	(0.014)	(0.016)
Log population (*t-1*)		-0.057*		-0.063**		-0.059*
		(0.033)		(0.032)		(0.033)
ELF (*t-1*)		-0.110**		-0.097**		-0.100**
		(0.043)		(0.048)		(0.047)
Log per capita GDP (*t-1*)		0.096***		0.095***		0.096***
		(0.018)		(0.018)		(0.019)
Urban population (*t-1*)		-0.083		-0.078		-0.078
		(0.077)		(0.079)		(0.079)
Agricultural share (*t-1*)		-0.021		-0.037		-0.035
		(0.069)		(0.070)		(0.071)
Minerals (*t-1*)		-0.253***		-0.260***		-0.259***
		(0.087)		(0.086)		(0.086)
Resources/income (*t-1*)		0.010		0.011		0.011
		(0.008)		(0.008)		(0.008)
Civil war (*t-1*)		0.002		0.003		0.003
		(0.015)		(0.015)		(0.015)
Log foreign aid (*t-1*)		0.010*		0.010*		0.009*
		(0.005)		(0.005)		(0.005)
Independent variable mean	0.091	0.108	0.028	0.030	0.126	0.133
Cumulative effect	0.478	0.285	0.119	-0.037	0.109	0.086
State and year FEs	x	x	x	x	x	x
Four lags of state capacity	x	x	x	x	x	x
Observations	5,178	4,304	5,178	4,304	5,178	4,304
Number of countries	136	109	136	109	136	109
R-squared	0.952	0.955	0.952	0.955	0.952	0.955

Note: Robust standard error clustered at the state level are in the parentheses. Four lags of state capacity, as well as state and year fixed effects, are controlled for in all the regressions.

Limitation and implications

- Measurement
- Restoring the democratic advantage?

Concluding thoughts

Thank you!

Robustness Check: RPE

Dependent variable	State Capacity (t)					
	(1)	(2)	(3)	(4)	(5)	(6)
Democracy (*t-1*)	0.099**	0.033**	0.027**	0.024**	0.022*	0.025*
	(0.043)	(0.013)	(0.012)	(0.012)	(0.012)	(0.013)
State Capacity (*t-1*)		0.773***	0.724***	0.721***	0.716***	0.721***
		(0.016)	(0.027)	(0.028)	(0.029)	(0.034)
State Capacity (*t-2*)			0.062**	0.041	0.044	0.048
			(0.024)	(0.035)	(0.035)	(0.042)
State Capacity (*t-3*)				0.032	0.008	-0.008
				(0.025)	(0.026)	(0.029)
State Capacity (*t-4*)					0.030**	0.027
					(0.015)	(0.018)
Cumulative effect	0.099	0.145	0.126	0.117	0.109	0.118
State and year FEs	x	x	x	x	x	x
Controls						x
Observations	6,152	6,135	5,981	5,827	5,673	4,670
Number of countries	174	174	174	174	172	172
R-squared	0.583	0.843	0.846	0.848	0.849	0.847

Note: Robust standard error clustered at the state level are in the parentheses. State and year fixed effects are controlled for in all the regressions. *** p<0.01, ** p<0.05, * p<0.1

Robustness Check: Mechanism using RPE

Dependent variable	RPE Agriculture (t)					
	(1)	(2)	(3)	(4)	(5)	(6)
Democracy (*t-1*)	0.025*		-0.010		0.012	-0.008
	(0.013)		(0.016)		(0.013)	(0.016)
Contestation (*t-1*)		0.047**	0.059**			0.044
		(0.020)	(0.027)			(0.033)
Participation (*t-1*)				0.045	0.038	0.024
				(0.028)	(0.030)	(0.034)
Controls	x	x	x	x	x	x
State and year FEs	x	x	x	x	x	x
Four lags of state capacity	x	x	x	x	x	x
Observations	4,670	4,526	4,526	4,527	4,527	4,519
Number of countries	106	106	106	106	106	106
R-squared	0.847	0.846	0.846	0.846	0.846	0.846

Note: Robust standard error clustered at the state level are in the parentheses. Four lags of state capacity, a full set of control variables, as well as state and year fixed effects, are controlled for in all the regressions. *** p<0.01, ** p<0.05, * p<0.1.

Robustness Check: GMM

Dependent variable	State Capacity (t)			
			Panel A: "Second Stage"	
	GMM (1)	*GMM* (2)	*GMM* (3)	*GMM* (4)
Democracy (*t-1*)	0.090**	0.090**	0.089***	0.084***
	(0.041)	(0.041)	(0.025)	(0.024)
State Capacity (*t-1*)	0.832***	0.832***	0.829***	0.837***
	(0.083)	(0.083)	(0.082)	(0.085)
State Capacity (*t-2*)	0.092	0.092	0.099	0.094
	(0.079)	(0.079)	(0.077)	(0.079)
State Capacity (*t-3*)	0.067	0.067	0.063	0.066
	(0.044)	(0.044)	(0.043)	(0.042)
State Capacity (*t-4*)	-0.025	-0.025	-0.025	-0.026
	(0.030)	(0.030)	(0.029)	(0.029)
Instruments	Lag Capacity 5-7	Lag Capacity 5-8	Capacity Lag 5-8; Wave Lag 2-4	Capacity Lag 5-8; Wave Lag 2-4
State and year FEs	x	x	x	x
Observations	6,490	6,490	6,490	6,318
Number of countries	172	172	172	172
			Panel B: "First Stage"	