Empirical evidence on the probabilistic voting model

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Probabilistic voting model (recap)

- Diverge from the Downsian model of electoral competition by assuming that politicians cannot predict perfectly the number of votes they receive
  - In reality, there always exists a median voter, but we do not know who this person is
- Lindbeck and Weibull (1987) assume that voters cast their choice based on both policy preferences (i.e., the level of G_A and G_B that parties promise to deliver if elected) and a random shock
  - Realization of random shock is known to the voter but not to the politician
  - Think of it as ideology; probability of abstension; probability that voter is informed about platforms or just votes randomly

Probabilistic voting model (recap)

- In the simplest form, probabilistic voting model assumes that probability that individual i votes for party A is a continuous and differentiable function of the difference between the utility that individual receives from proposal made by party A and utility that individual receives from proposal made by party B

$$\pi_A^i = f^i(U^i(G_A) - U^i(G_B))$$

where $\frac{df^i(U^i(G_A)-U^i(G_B))}{dU^i(G_A)} > 0$; $\frac{df^i(U^i(G_A)-U^i(G_B))}{dU^i(G_B)} < 0$

  - Notice: in Downs model, $f^i(U^i(G_A) - U^i(G_B))$ is a stepwise function that moves discontinously between 0, 0.5, and 1.

Probabilistic voting model (recap)

- Analogy to Downs model:
  - Office-motivated candidates propose the same platform because they face the same problem
- Differences w.r.t. Downs model:
  - Candidates cannot target the specific preferences of the median voter because each voter has a positive probability of being the median voter
  - Solution puts positive weight on all voters, with weights reflecting the probability that individual i is the median voter (swing-voter weighted social welfare function)
  - Policy divergence is the equilibrium in probabilistic voting model if candidates are policy motivated

How the Electoral College Influences Campaigns and Policy: The Probability of Being Florida (Strömberg – 2008, AER)

- Strömberg (2008) investigates whether a probabilistic voting model can explain American presidential candidates campaign visits across states in 2000
- The electoral system to select the U.S. president is very peculiar
  - Presidential system with indirect ("electoral college") appointment
  - Each state is assigned a number of electoral votes proportional to the state's population. Min.: 3 votes (DC; Delaware). Max.: 55 votes (California).
  - The presidential candidates that wins the popular vote in one state gets all electoral votes assigned to that states
  - The candidate that obtains the majority of electoral votes is elected as the president

How the Electoral College Influences Campaigns and Policy: The Probability of Being Florida (Strömberg – 2008, AER)

- As compared to a country-wide election of the president, where each vote matters the same, in this context the distribution of votes matters more than their number
- If one candidate wins few states by a large margin and loses many states by a small margin it is very unlikely that the candidate becomes the President
- This can be formalized by specifying the function that translates the number of votes received by a candidate into her probability of being elected

How the Electoral College Influences Campaigns and Policy: The Probability of Being Florida (Strömberg – 2008, AER)

- In at-large election:

$$p_i = P(\pi_i \geq \frac{1}{2})$$

- where p_i is the prob. that candidate i becomes the President and π_i is the share of votes received by candidate i
- In electoral college regime:

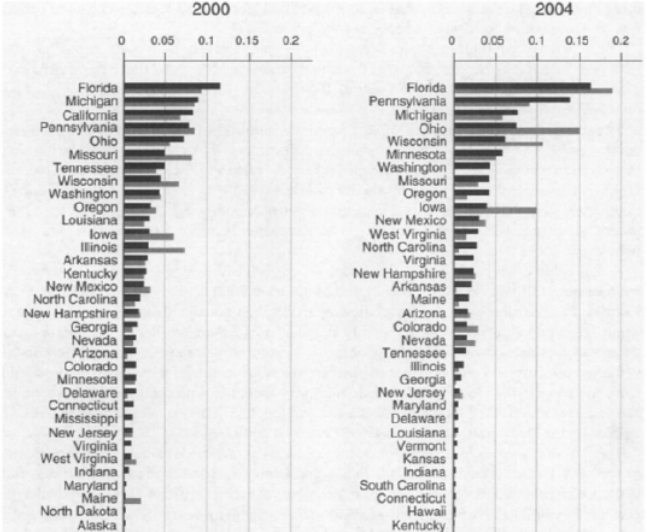
$$p_i = P(\sum_j \omega_j \times p_{i,j}) \geq \frac{1}{2} = P(\sum_j \omega_j \times P(\pi_{i,j} \geq \frac{1}{2})) \geq \frac{1}{2}$$

- where p_i is the prob. that candidate i becomes the President; $p_{i,j} = P(\pi_{i,j} \geq \frac{1}{2})$ is the prob. that candidate i wins the electoral votes assigned to state j, and ω_j is the share of the total electoral votes that are assigned to state j

How the Electoral College Influences Campaigns and Policy: The Probability of Being Florida (Strömberg – 2008, AER)

- According to the last formula, a marginal increase in the share of votes received by candidate *i* in state *j* has a differential impact on the probability of winning the election that depends on i) the probability that the state is decisive to swing the majority of the electoral college and ii) the probability that the race to win the state is very close
- Strömberg tests this conjecture using data from US elections 1948–2004
- The probability that each state faces a close competition and the probability that each state is decisive in swinging the majority of the electoral college are estimated using data from election polls, previous years' election results, economic conditions, incumbent party at the local level..
- The estimated weights are then correlated with actual data on campaign visit by Democrat and Republican presidential candidates

How the Electoral College Influences Campaigns and Policy: The Probability of Being Florida (Strömberg – 2008, AER)



How the Electoral College Influences Campaigns and Policy: The Probability of Being Florida (Strömberg – 2008, AER)

TABLE 4—OLS REGRESSIONS ON CANDIDATE VISIT SHARES, 2000 AND 2004

	Levels			Changes 2004–2000		
	(1)	(2)	(3)	(4)	(5)	(6)
Q_s share	1.00		0.97	0.89		0.93
	(0.05)**		(0.07)**	(0.17)**		(0.17)**
No. electoral votes		0.50	0.02		2.08	3.36
		(0.17)**	(0.10)		(2.69)	(2.14)
Close state election		3.97	0.37		2.15	2.75
		(0.87)**	(0.55)		(3.46)	(2.74)
Dem. vote share		0.76	0.14		2.21	−1.46
		(0.67)	(0.38)		(4.25)	(3.43)
Observations	102	102	102	51	51	51
R-squared	0.77	0.29	0.77	0.37	0.03	0.41

Notes: All variables have been rescaled, dividing by the sum of the variable in that year. The variable "close state election" equals 50 |% *Democraticvotes* 50|. Standard errors in parentheses.

*** Significant at the 1 percent level.

** Significant at the 5 percent level.

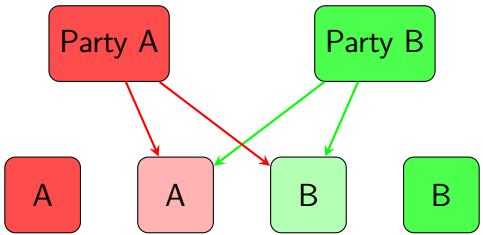
Does electoral competition curb party favoritism? (Curto-Grau, Solé-Ollé, and Sorribas-Navarro – 2018, AEJ: Applied Econ)

Introduction

- Focus on allocation of transfers to municipalities in Spain
- Workhorse theoretical models (e.g., probabilistic voting) predict that central government allocates resources to local units based on population; density of swing voters; how voters living in that unit react to transfers received
- It should not matter whether the same party that rules at the upper level is also in power at the local level or not

Does electoral competition curb party favoritism? (Curto-Grau, Solé-Ollé, and Sorribas-Navarro – 2018, AEJ: Applied Econ)

Introduction



Does electoral competition curb party favoritism? (Curto-Grau, Solé-Ollé, and Sorribas-Navarro – 2018, AEJ: Applied Econ)

Empirical strategy

- Compare municipalities in which the mayor is (barely) politically aligned with the regional government and municipalities in which the mayor is (barely) not politically aligned with the regional government
- Additional empirical challenges:
  (1) Spain has a multi-party system $\rightarrow$ not necessarily winner receives $>50\%$ and there might be more than 1 loser party
  (2) Spain has a PR system at all election levels $\rightarrow$ not necessarily one more vote results in one more seats
  (3) Government coalitions might be in power
  (4) Mayors are not directly elected by voters

Does electoral competition curb party favoritism? (Curto-Grau, Solé-Ollé, and Sorribas-Navarro – 2018, AEJ: Applied Econ)

Challenge 1: Multi-party system

- When only two parties run, the **sum of their vote shares is 1**
  - Moving 2 percent of the electorate swings a 51-49 majority to 49-51
- With more than 2 parties, this is not true
  - Moving 2 percent of the electorate can swing a 45-43-12 election to a 43-45-12 election but may also result in a 43-43-14
- Solution: **simulate counterfactual elections** in which each extra votes received by most voted party is re-assigned at random until a change in rank occurs
  - Notice: probability of assigning a vote to each party is assumed to be proportional to vote share received in the actual election

Does electoral competition curb party favoritism? (Curto-Grau, Solé-Ollé, and Sorribas-Navarro – 2018, AEJ: Applied Econ)

Challenge 2: Proportional election system

- In majoritarian elections, receiving more votes than the other candidates is a **sufficient condition** to win
- This is not necessarily true in PR system
  - For instance, one party may receive more votes but the same number of seats as another
- Solution: define the running variable to measure the **distance to a change in seat majority** (rather than being the distance to a change in vote share majority)
  - Need to take into account the electoral system specifity (allocation rule, entry threshold) and calculate both the actual and any counterfactual seat distributions

Does electoral competition curb party favoritism? (Curto-Grau, Solé-Ollé, and Sorribas-Navarro – 2018, AEJ: Applied Econ)

Challenge 3: Government coalitions

- In Spain it is quite common that a **coalition of parties** supports the regional government
- Parties supporting the regional government run **separately** in local elections
  - Solution: calculate the **aggregate share of seats** assigned to the regional government coalition and define alignment to be equal 1 if such coalition holds the majority (rather than a single party)

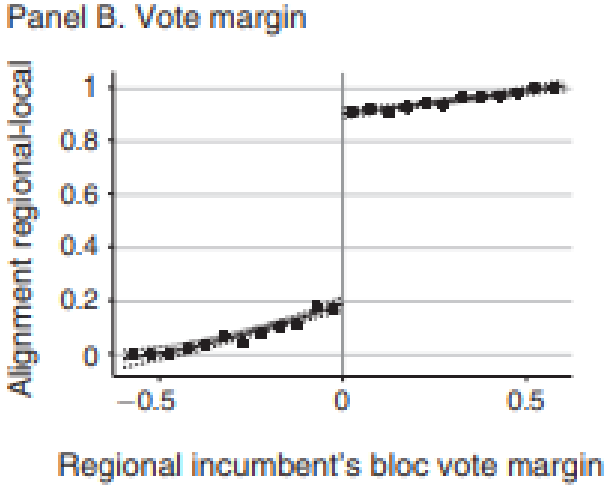
Does electoral competition curb party favoritism? (Curto-Grau, Solé-Ollé, and Sorribas-Navarro – 2018, AEJ: Applied Econ)

Challenge 4: Mayors are not directly elected

- Likewise parliamentary democracies (and pre-1993 Italian municipalities), mayors in Spain are **not directly elected by voters**
  - Voters elect **members of the council** who, in turn, elect the mayor
- In the bargaining stage, it may happen that the **mayor does not belong to the most voted** party/coalition
  - There is no sharp treatment: moving alignment council from 0 to 1 does not move from 0 to 1 the probability that mayor is aligned
- Solution: Fuzzy-RD $\rightarrow$ use alignment of the majority in congress as an **instrument** for the mayor's alignment

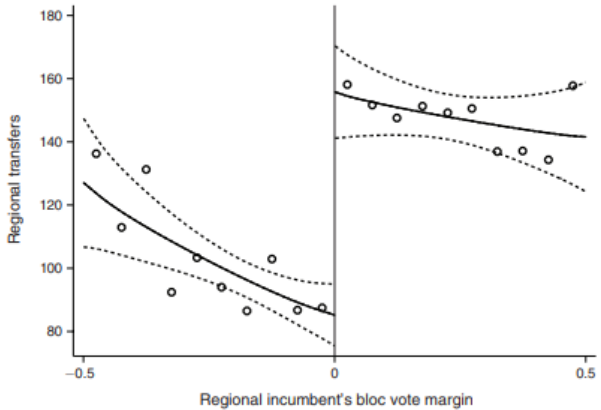
Does electoral competition curb party favoritism? (Curto-Grau, Solé-Ollé, and Sorribas-Navarro – 2018, AEJ: Applied Econ)

Results: First stage



Does electoral competition curb party favoritism? (Curto-Grau, Solé-Ollé, and Sorribas-Navarro – 2018, AEJ: Applied Econ)

Results: Reduced form



Does electoral competition curb party favoritism? (Curto-Grau, Solé-Ollé, and Sorribas-Navarro – 2018, AEJ: Applied Econ)

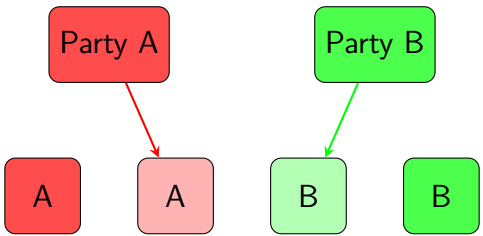
Results: 2SLS

TABLE 1—AVERAGE EFFECT OF PARTISAN ALIGNMENT ON CAPITAL TRANSFERS

	RD				
	Global (1)	Local (2)	Local (3)	Local (4)	Local (5)
Panel A. Second stage (dependent variable: capital transfers per capita)					
Alignment	98.06	94.79	102.57	86.99	71.70
	(15.71)	(13.72)	(18.65)	(23.40)	(31.40)
	[0.000]	[0.000]	[0.001]	[0.000]	[0.049]
Polynomial order	2	1	1	1	1
Bandwidth (percent)	100	$2h^* = 38.6$	$h^* = 19.3$	$h^*/2 = 9.65$	$h^*/4 = 4.8$
Observations	6,050	4,410	2,576	1,383	683

Does electoral competition curb party favoritism? (Curto-Grau, Solé-Ollé, and Sorribas-Navarro – 2018, AEJ: Applied Econ)

Results



Political preferences (orthogonal to policy) in probabilistic voting model

- Voter i supports party A if and only if

$$U(G^A) \geq U(G^B) + \sigma_i + \delta$$

- $\sigma_i \sim \mathcal{U}[-\frac{1}{2\phi}; \frac{1}{2\phi}]$ is exogenous ideological bias of voter i
- $\delta \sim \mathcal{U}[-\frac{1}{2\psi}; \frac{1}{2\psi}]$ is exogenous "popularity shock" at aggregate level

What if σ_i and/or δ are endogenous?

Do Political Protests Matter? (Madestam, Shoag, Veuger, and Yanagizawa-Drott – 2013, QJE)

Introduction

- Research question
  - Do political protests affect political beliefs, voting behavior, and policy-making?
- Empirical challenge
  - Political protests are obviously **endogenous to the political-economic environment**

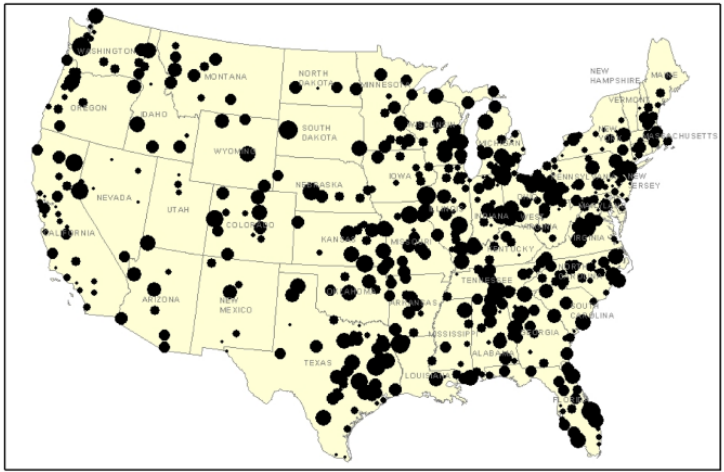
Do Political Protests Matter? (Madestam, Shoag, Veuger, and Yanagizawa-Drott – 2013, QJE)

Empirical setting

- Focus on the Tea Party protests in the US on April 15, 2009
- April 15 is deadline to submit individual tax declaration to US govt. (known as "Tax Day")
- Tea Party organized nationwide protests against taxation and Obama's presidency on that day
- Right-wing side of the Republican party at the time
- Movement founded in early 2009 and become popular after the Tax Day rallies. Leader of Tea Party nominated as VP for Republican party in 2012 elections

Do Political Protests Matter? (Madestam, Shoag, Veuger, and Yanagizawa-Drott – 2013, QJE)

Event prevalently in red States and swing States



Do Political Protests Matter? (Madestam, Shoag, Veuger, and Yanagizawa-Drott – 2013, QJE)

Empirical strategy: «Rainy day politics»

Sunny

Rainy

- **Use rainfall during the protests (conditional on probability of rainfall) as an instrument for attendance at the rally**

Do Political Protests Matter? (Madestam, Shoag, Veuger, and Yanagizawa-Drott – 2013, QJE)

Empirical strategy: «Rainy day politics»

- Key assumptions of instrumental-variables regressions
  - Conditional on the probability of rainfall on April 15, whether it rains or not on that day is random (**Exogeneity**)
  - Rainfall on that specific day can only affect political preferences through the protests (**Exclusion restriction**)
  - Rainfall reduces participation to Tea Party's rallies (**First-stage**)
  - No localities in which rainfall actually increases participation to rallies (**Monotonicity**)

Do Political Protests Matter? (Madestam, Shoag, Veuger, and Yanagizawa-Drott – 2013, QJE)

Empirical strategy: «Rainy day politics»

- Exclusion restriction only holds in a weak version
  - Rainfalls negatively impact protests in several ways beyond reducing no. participants
  - Less media reporting? Cancelled events? Participants are less involved? Reduced enthusiasm?
- Hard to interpret IV coefficient. Still, OLS of rainfall on outcomes (**reduced-form**) identifies a causal effect of protests
  - **Intention-to-treat analysis**
- Also show 2SLS estimates to ease the interpretation (recall $\beta_{2SLS} = \frac{\beta_{RF}}{\beta_{FS}}$)

Do Political Protests Matter? (Madestam, Shoag, Veuger, and Yanagizawa-Drott – 2013, QJE)

Instrument exogeneity

	Republican Votes, 2008,						Democratic Votes, 2008				Turnout, 2008				Obama Vote Share, 2008	
Dependent Variable	'000		% of pop.		% of votes		'000		% of pop.		'000		% of pop.		Vote Share	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)
Rainy Protest	0.18	0.71	0.53	0.46	0.61	0.99	0.71	0.81	0.66	0.23	0.58	0.73	0.93	0.47	1.25	0.58
	(0.59)	(0.96)	(0.50)	(0.52)	(1.25)	(1.32)	(0.96)	(0.86)	(0.63)	(0.62)	(1.16)	(1.04)	(0.63)	(0.62)	(1.39)	(1.00)
Observations	2,758	2,758	2,758	2,758	2,758	2,758	2,758	2,758	2,758	2,758	2,758	2,758	2,758	2,758	2,758	2,758
R-squared	0.96	0.98	0.77	0.79	0.74	0.76	0.98	0.98	0.76	0.79	0.98	0.98	0.73	0.78	0.66	0.81
Election Controls	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Demogr. Controls	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y
Dep. Var. Mean	17.4	17.4	22.3	22.3	51.5	51.5	21.2	21.2	19.8	19.8	39.8	39.8	43.1	43.1	41.3	41.3

- Notice: Probability of rain on April 15, 2009 is estimated very precisely, based on daily data of historical rainfalls from 1980 by county and by congressional district

Do Political Protests Matter? (Madestam, Shoag, Veuger, and Yanagizawa-Drott – 2013, QJE)

First stage: Rainfall reduces share of individuals who attend rallies

TABLE III

THE EFFECT OF RAIN ON THE NUMBER OF TEA PARTY PROTESTERS IN 2009

	(1)	(2)	(3)	(4)
Dependent variable	Protesters, % of population			
Rainy protest	−0.082***	−0.170***	−0.128***	−0.108***
	(0.021)	(0.046)	(0.036)	(0.034)
Observations	2,758	2,758	2,758	542
R-squared	0.16	0.14	0.15	0.22
Protesters variable	Mean	Max	Mean	Mean
Rain variable	Dummy	Dummy	Continuous	Dummy
Sample counties	All	All	All	Protesters > 0
Election controls	Y	Y	Y	Y
Demographic controls	Y	Y	Y	Y
Dep. var. mean	0.161	0.295	0.161	0.240

Do Political Protests Matter? (Madestam, Shoag, Veuger, and Yanagizawa-Drott – 2013, QJE)

Results: Rainfall reduces future Tea Party activity and contributions

TABLE IV

THE EFFECT OF TEA PARTY PROTESTS ON LOCAL TEA PARTY ACTIVITY AND PAC CONTRIBUTIONS

Dependent variable	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	Tea Party organizers, 2010		Tea Party protesters, 2010		PAC contributions			
					2009	2010	2009–10	
		Second-stage 2SLS estimates		Second-stage 2SLS estimates				Second-stage 2SLS estimates
	Persons, % of population				PAC contributions, $ per capita			
Rainy protest	−0.0077**		−0.065**		−0.00032**	−0.0011***	−0.0014***	
	(0.0030)		(0.027)		(0.00013)	(0.0004)	(0.0005)	
% of pop. protesting scaling		0.0931**		0.794***				1.700**
		(0.0382)		(0.277)				(0.698)
Observations	2,758	2,758	2,758	2,758	2,758	2,758	2,758	2,758
R-squared	0.04	—	0.05	—	0.16	0.20	0.23	—
Protesters variable	—	Mean	—	Mean	—	—	—	Mean
Election controls	Y	Y	Y	Y	Y	Y	Y	Y
Demographic controls	Y	Y	Y	Y	Y	Y	Y	Y
Dep. var. mean	0.058	0.058	0.070	0.070	0.002	0.008	0.010	0.010

Do Political Protests Matter? (Madestam, Shoag, Veuger, and Yanagizawa-Drott – 2013, QJE)

Results: Rainfall affects self-reported political beliefs

TABLE V

POLITICAL BELIEFS, ANES SURVEY 2010

Dependent variable	(1) Strongly supports the Tea Party movement, dummy	(2) Favorable view on Sarah Palin, dummy	(3) Feels outraged about the way things are going in country, dummy	(4) Opposes raising taxes on income >$250K, dummy	(5) Believes Americans today have less freedom compared to 2008, dummy	(6) Unfavorable feelings toward President Obama, dummy	(7) Average belief effect	(8) Reported likelihood of voting in the 2010 midterm election
Rainy rrotest	−0.057**	−0.057**	−0.046**	−0.058*	−0.065**	−0.046*	−0.13***	−0.067***
	(0.025)	(0.026)	(0.021)	(0.030)	(0.026)	(0.024)	(0.037)	(0.024)
Observations	1,146	1,140	1,142	1,140	1,138	1,145	—	1,092
R-squared	0.172	0.300	0.101	0.226	0.120	0.292	—	0.303
Election controls	Y	Y	Y	Y	Y	Y	Y	Y
Demographic controls	Y	Y	Y	Y	Y	Y	Y	Y
Dep. var. mean	0.120	0.311	0.174	0.228	0.438	0.245	—	0.701

Notes. The unit of analysis is a survey respondent, from the 2010 ANES survey data. The survey took place in October 2010. *Rainy protest* is based on the precipitation amount in the district on the rally day (April 15, 2009). The dummy variable is equal to 1 if there was significant rain in the district (at least 0.1 inch) and 0 otherwise. All regressions include flexible controls for the probability of rain, population, and region fixed effects. The election controls account for whether the respondent voted for the Republicans in the U.S. House of Representatives elections in 2008. The demographic controls include age, education, race (white, African American, Hispanic), household income, unemployment status (currently working), living in a rural area, and foreign born. More information on the variables, the data sources, and our specification are described in Section III, Section IV.A, and the Online Appendix. Robust standard errors in parentheses, clustered at the state level. *** 1%, ** 5%, * 10% significance.

Do Political Protests Matter? (Madestam, Shoag, Veuger, and Yanagizawa-Drott – 2013, QJE)

Results: Rainfall reduces support for Republican party in 2010 elections

TABLE VI

THE EFFECT OF TEA PARTY PROTESTS ON VOTING BEHAVIOR, 2010 U.S. HOUSE

Dependent variable	(1) Republican Party votes	(2) Republican Party votes	(3) Democratic Party votes	(4) Democratic Party votes	(5) Republican Vote share	(6) Republican Vote share	(7) Republican Vote share
		Second-stage 2SLS estimates		Second-stage 2SLS estimates		Second-stage 2SLS estimates	
	Votes, % of county population				Votes, % of county votes		Votes, % of district votes
Rainy protest	−1.04***		−0.14		−1.55**		−1.92***
	(0.30)		(0.35)		(0.69)		(0.68)
% of pop. protesting scaling		12.59***		1.73		18.81**	
		(4.21)		(4.14)		(7.85)	
Observations	2,758	2,758	2,758	2,758	2,758	2,758	435
R-squared	0.88	—	0.87	—	0.89	—	0.91
Protesters variable	—	Mean	—	Mean	—	Mean	—
Election controls	Y	Y	Y	Y	Y	Y	Y
Demographic controls	Y	Y	Y	Y	Y	Y	Y
Dep. var. mean	14.97	14.97	12.76	12.76	52.47	52.47	50.86

Do Political Protests Matter? (Madestam, Shoag, Veuger, and Yanagizawa-Drott – 2013, QJE)

Results: Rainfall leads Congress representatives to supporting less conservative policies

TABLE VII

POLICY MAKING EFFECT

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	ACU score						Retirement	
Dependent variable	2009		2010		Δ Score 2010 – 2008			
	Full	All votes	Full	All votes	Full	All votes	Republicans	Democrats
Rainy protest	−1.922**	−2.827***	−4.296***	−3.181**	−3.371**	−2.405	0.049	−0.094***
	(0.937)	(1.021)	(1.258)	(1.411)	(1.310)	(1.849)	(0.064)	(0.034)
Observations	435	327	435	279	435	191	179	256
R-squared	0.979	0.982	0.961	0.973	0.804	0.894	0.242	0.235
Election controls	Y	Y	Y	Y	Y	Y	Y	Y
Demographic controls	Y	Y	Y	Y	Y	Y	Y	Y
Dep. var. mean	41.14	41.44	41.45	39.17	−0.164	−0.157	0.0447	0.0469

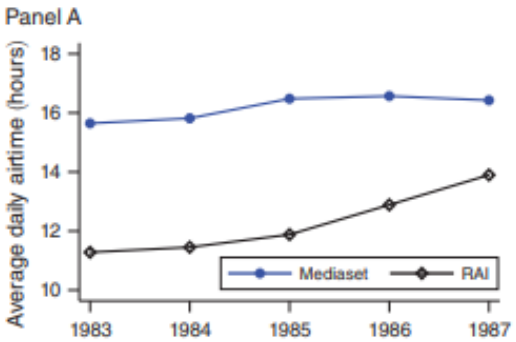
The Political Legacy of Entertainment TV (Durante, Pinotti, and Tesei – 2019, AER)

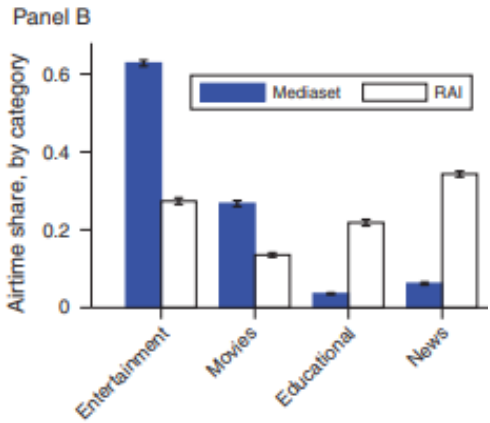
Introduction

- Research question
  - How did the introduction of Mediaset as an entertainment TV in the '80s affect votes for Forza Italia when Berlusconi entered politics?
- Empirical strategy
  - Mediaset became available to different localities at different points in time
  - Compare vote shares in municipalities where Mediaset became available earlier with municipalities later treated by the introduction of Mediaset because of geographical constraints

The Political Legacy of Entertainment TV (Durante, Pinotti, and Tesei – 2019, AER)

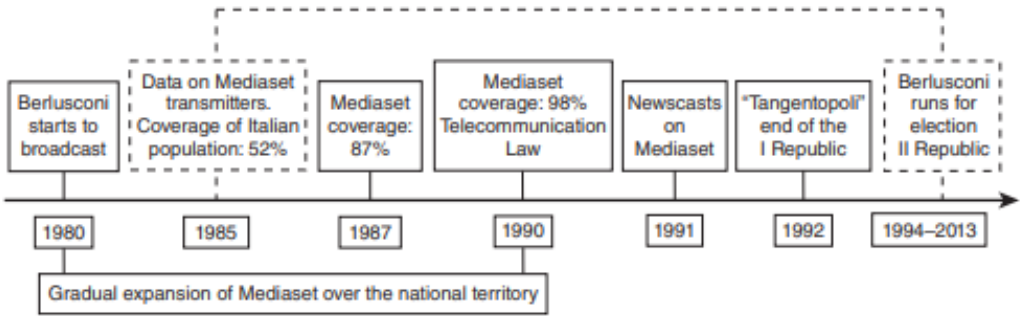
Entertainment TV





The Political Legacy of Entertainment TV (Durante, Pinotti, and Tesei – 2019, AER)

Timeline of the introduction of Mediaset



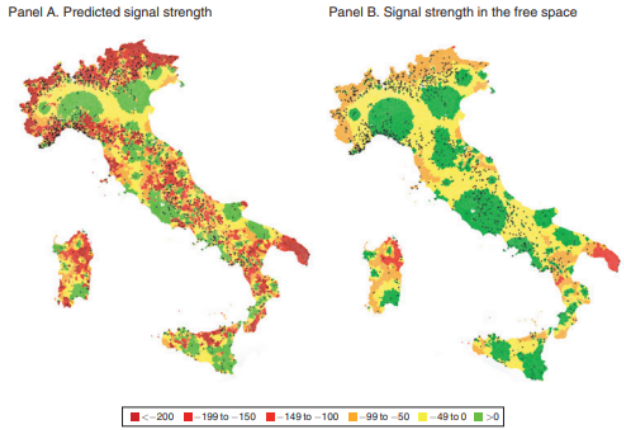
The Political Legacy of Entertainment TV (Durante, Pinotti, and Tesei – 2019, AER)

Empirical challenge

- The timing at which Mediaset became available in different municipalities is **likely endogenous to several demographic, socio-economical, and political characteristics**
  - Mediaset is a company which arguably decided optimally where to locate its transmittors to maximize profits
- Solution: use geographical constraints such as the presence of mountains that interrupt the signal distributed by Mediaset as a source of exogenous variation
- Another example of **intention-to-treat analysis**: focus on the reduced-form impact of signal availability on political outcomes, not on the actual number of Mediaset's viewers

The Political Legacy of Entertainment TV (Durante, Pinotti, and Tesei – 2019, AER)

Actual transmission and transmittors potential



The Political Legacy of Entertainment TV (Durante, Pinotti, and Tesei – 2019, AER)

Results: Forza Italia vote share in 1994

Table 3: Exposure to Mediaset and voting for *Forza Italia* in 1994

	(1)	(2)	(3)	(4)	(5)
	OLS regression				
Signal	2.853***	3.215***	3.666***	0.901***	0.851***
	(0.860)	(0.705)	(0.759)	(0.232)	(0.234)
SignalFree		-0.289	0.014	-0.668**	-0.642**
		(0.719)	(0.473)	(0.260)	(0.254)
Area			-0.966	0.854**	0.875**
			(0.695)	(0.379)	(0.404)
$Area^2$			0.030	-0.079	-0.069
			(0.054)	(0.093)	(0.093)
Altitude			-6.244	-12.716***	-10.963***
			(4.483)	(1.578)	(1.625)
$Altitude^2$			-0.092	7.125***	6.367***
			(3.953)	(1.269)	(1.289)
Ruggedness			0.007*	-0.002***	-0.002**
			(0.004)	(0.001)	(0.001)
Electorate					-0.000
					(0.000)
Log income per capita					5.109***
					(0.763)
Education					-0.089***
					(0.030)
Observations	7,600	7,600	7,590	7,590	7,519
Electoral district FE	NO	NO	NO	YES	YES

The Political Legacy of Entertainment TV (Durante, Pinotti, and Tesei – 2019, AER)

Results: Impact of Mediaset availability in 1985 on future election results

Table 4: Exposure to Mediaset and voting for main political parties (1994-2013)

Party ↓ Election →	1994	1996	2001	2006	2008	2013
Forza Italia	0.851***	0.713***	0.832***	0.945***	1.021***	0.198
	(0.234)	(0.200)	(0.296)	(0.281)	(0.337)	(0.273)
Other center-right	0.082	0.006	-0.121	0.034	-0.194	-0.091
	(0.361)	(0.318)	(0.218)	(0.204)	(0.144)	(0.088)
Centrist parties	-0.183	-0.239	-0.186	-0.002	-0.237	0.079
	(0.265)	(0.158)	(0.197)	(0.147)	(0.168)	(0.136)
Democratic Party	-0.407	-0.473	-0.422	-0.483	-0.644*	-0.421
	(0.376)	(0.327)	(0.285)	(0.372)	(0.342)	(0.271)
Other center-left	-0.183	-0.041	-0.075	-0.265	-0.027	-0.103
	(0.124)	(0.151)	(0.196)	(0.233)	(0.108)	(0.094)
Extreme left parties	-0.322**	-0.227	-0.204	-0.212	-0.105	-0.219**
	(0.152)	(0.154)	(0.160)	(0.168)	(0.087)	(0.088)
M5S						0.522**
						(0.243)
Other parties	0.027	0.129	0.134	0.003	0.142	0.050
	(0.198)	(0.092)	(0.097)	(0.073)	(0.177)	(0.179)
Invalid ballots	0.134	0.132	0.043	-0.020	0.044	-0.015
	(0.128)	(0.136)	(0.171)	(0.049)	(0.087)	(0.069)
Turnout	0.338	0.488	0.369	0.260	0.212	0.512**
	(0.334)	(0.392)	(0.394)	(0.256)	(0.231)	(0.251)

The Political Legacy of Entertainment TV (Durante, Pinotti, and Tesei – 2019, AER)

Results: Impact of Mediaset availability on votes for Forza Italia by individual characteristics

Table 6: Heterogeneity in the effect of Mediaset across different groups of individuals

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Signal	0.026**	0.029**	0.029**	0.019	0.016	0.034**	0.017	
	(0.010)	(0.011)	(0.012)	(0.013)	(0.013)	(0.013)	(0.015)	
SignalFree	-0.001	0.000	-0.012	-0.012	-0.012	-0.012	-0.013	
	(0.009)	(0.009)	(0.011)	(0.011)	(0.011)	(0.011)	(0.011)	
College	-0.020***	-0.016***	-0.018***	-0.018***	-0.018***	-0.018***	-0.018***	-0.012
	(0.006)	(0.006)	(0.006)	(0.006)	(0.006)	(0.006)	(0.006)	(0.008)
Female	0.028***	0.029***	0.031***	0.031***	0.031***	0.032***	0.031***	0.023**
	(0.008)	(0.008)	(0.008)	(0.008)	(0.008)	(0.008)	(0.008)	(0.011)
Employed	0.003	0.004	0.009	0.009	0.009	0.008	0.009	0.017
	(0.009)	(0.010)	(0.009)	(0.009)	(0.009)	(0.009)	(0.009)	(0.012)
Signal X Unemployed				0.018*			0.014	0.010
				(0.010)			(0.010)	(0.013)
Signal X Low-educated					0.027**		0.024**	0.030**
					(0.012)		(0.012)	(0.015)
Signal X Female						-0.009	-0.012	-0.006
						(0.009)	(0.009)	(0.012)
Observations	10,607	10,552	10,552	10,552	10,552	10,552	10,552	10,552
Municipality controls	NO	YES	YES	YES	YES	YES	YES	NO
Province FE	NO	NO	YES	YES	YES	YES	YES	NO
Municipality × year FE	NO	NO	NO	NO	NO	NO	NO	YES
R2	0.067	0.071	0.092	0.092	0.093	0.092	0.093	0.376

The Political Legacy of Entertainment TV (Durante, Pinotti, and Tesei – 2019, AER)

Results: Impact of Mediaset availability on perceptions about Berlusconi

Table 8: Exposure to Mediaset and opinions about Berlusconi

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
	Done most for Italy (1993)	Don't know him (1994)	Qualified	Honest	Coherent	Sincere	Trustworthy	Statesman	Rating [1-10]
Signal	0.075	-0.004	0.015	0.008	-0.051	-0.034	0.053**	-0.035	0.078
	(0.068)	(0.017)	(0.029)	(0.018)	(0.039)	(0.040)	(0.027)	(0.042)	(0.071)
Baseline	0.132	0.094	0.619	0.352	0.626	0.581	0.518	0.629	5.37
Observations	519	2,525	4,725	6,956	2,600	2,522	4,802	2,598	12,613

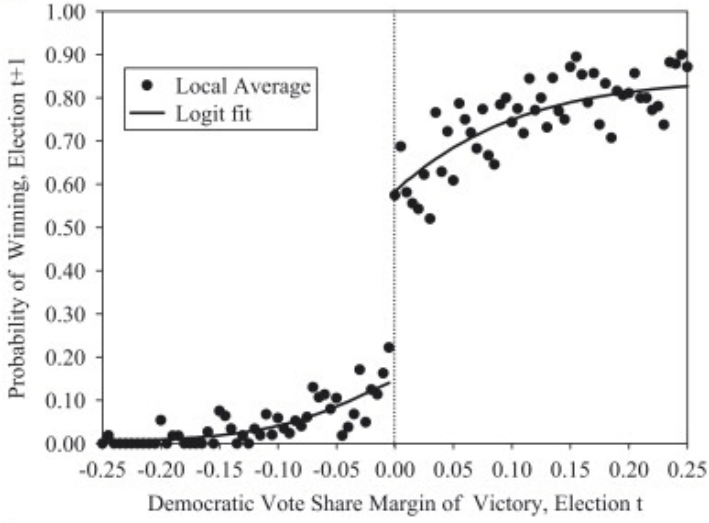
Randomized experiments from non-random selection in U.S. House elections (Lee – 2008, Journal of Econometrics)

- Anecdotally, we know that parties usually maintain their position in power over time
  - Certain parties are inherently more likely to succeed in elections in certain areas, while other parties are inherently more likely to succeed in other areas
- One theory (consistent with standard theoretical models of voting) is that the voters' innate preferences might be different across localities. Thus, there are "red" states/districts and "blue" states/districts
- This is not necessarily the full story: it might also be that the party in power can exploit its position to increase the chances of re-election
  - This theory is known as **incumbency advantage**

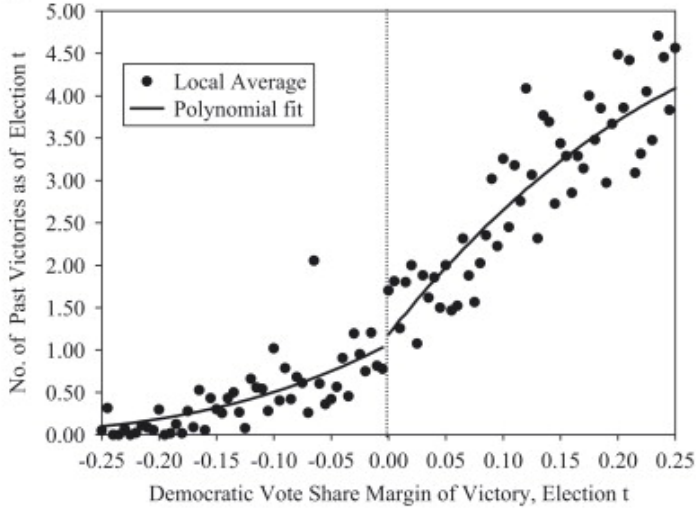
Randomized experiments from non-random selection in U.S. House elections (Lee – 2008, Journal of Econometrics)

- Testing for the existence of incumbency advantages is subject for several empirical challenges
- In particular, the usual identification problem arises: districts in which the democratic party is in power are so because the median voter is democratic
- Also the usual solution applies: **close-election regression discontinuity design**
- Instead of comparing the probability that the democratic party will win the next election as a function of the democratic party being in power in the current term, let us just compare places in which the democratic party just won or just lost the previous election

Randomized experiments from non-random selection in U.S. House elections (Lee – 2008, Journal of Econometrics)



Randomized experiments from non-random selection in U.S. House elections (Lee – 2008, Journal of Econometrics)



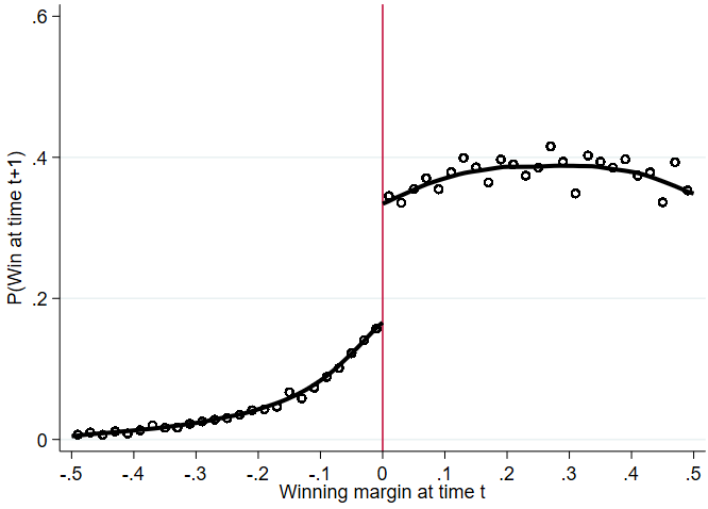
Randomized experiments from non-random selection in U.S. House elections (Lee – 2008, Journal of Econometrics)

- Lee's study only focuses on democratic candidates, by comparing democratic candidate who barely won their election at time t and their colleagues who barely lost their election at time t.
- In a two-party system, showing that this effect exists for democratic candidates is sufficient to conclude that the effect must exist also for republican candidates
- This, however, is not necessarily true when there are many parties/candidates
  - Maybe some parties/candidates have a positive incumbency advantage and other parties have a negative incumbency advantage, and we are interested in knowing whether an incumbency advantage exists on average
- We can adapt the close-election technique to those studies too!

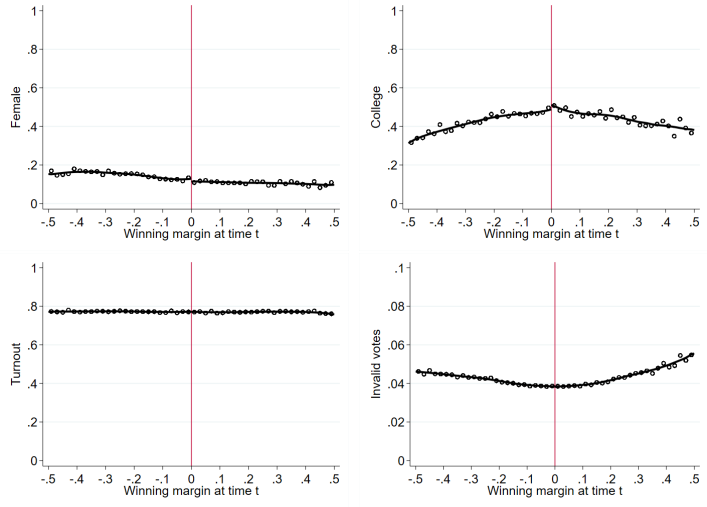
Randomized experiments from non-random selection is U.S. House elections (Lee – 2008, Journal of Econometrics)

- Instead of comparing a candidate that won in a district with a candidate of the same party who lost in another district, we can just compare *any* winning candidate and *any* runner-up candidate
  - This design would allow to obtain balancing of both candidate-level characteristics (e.g., party, gender, experience...) and district-level characteristics
  - Moreover, this design allows to control for election FE, hence comparing each winner with the loser that participated in the very same election
- Let me show this exercise in the context of Italian municipal elections (1993–2019) in municipalities with less than 15,000 inhabitants

Randomized experiments from non-random selection is U.S. House elections (Lee – 2008, Journal of Econometrics)



Randomized experiments from non-random selection is U.S. House elections (Lee – 2008, Journal of Econometrics)



Randomized experiments from non-random selection is U.S. House elections (Lee – 2008, Journal of Econometrics)

VARIABLES	(1) P(Win at time t+1)	(2) P(Win at time t+1)
RD_Estimate	0.168***	0.161***
	(0.0115)	(0.0103)
Observations	77,449	77,428
Municipality × Election date FE	NO	YES
Bandwidth	0.0877	0.0742

Randomized experiments from non-random selection is U.S. House elections (Lee – 2008, Journal of Econometrics)