

Political Spending Caps

The Case of U.S. Referendums

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2010 Citizens United SCOTUS Decision



“Unlimited” Political Campaign Spending

- Freedom of Speech
- Informative advertising
- Political Capture
- Persuasive Advertising

This Paper

- Would a spending cap change election outcomes?
- Is there an optimal spending cap?

- Specification 1: Informative Advertising. Ads → Participation.
- Specification 2: Persuasive Advertising. Ads → Election Outcome.
- Structural model in the making.

- 50 Ballot-measure referendums in the U.S.
- Single-issue yes/no questions.
- State-level
- 2010-2020 period
- **Unlimited campaign spending.**

California Proposition 21 (2020)

Whether to allow local governments to enact rent control on housing that was first occupied over 15 years ago

- Yes Camp: \$24.87 Million → 17.47 in TV ads.
- No Camp: \$82.62 Million → 32.62 in TV ads.

- Ballot measures and campaign spending:
 - Stratmann (2006a); de Figueiredo et al. (2011); Kalla and Broockman (2018)
 - **Contribution:** Examine the spike in contributions since 2010.
Improve identification strategy.
- Persuasive effects of political advertising in “candidate elections”:
 - Spenkuch and Toniatti (2018), Sides et al. (2022)
 - **Contribution:** Identification advantages wrt “candidate elections”.

- Contribution limits and election outcomes
 - Stratmann (2006b), Gordon and Hartmann (2013, 2016)
 - **Contribution:** Counterfactual estimates with contribution limits.

- **Electoral results**

- County-level ballot-measure results.

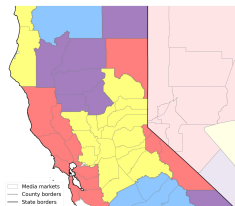
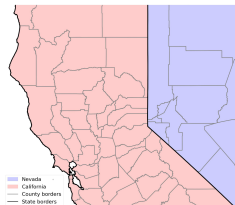
- **County Covariates**

- Republican votes in the most recent election.

- **TV advertisements**

- a) Each observation is an airing.
- b) Designated Market Area (DMA) region.
- c) Other: date, time, estimated cost etc.

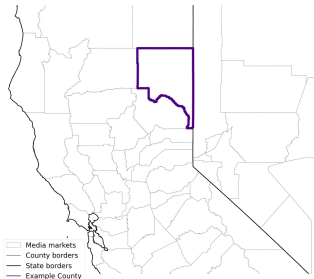
→ 2,640 **ballot** × **county** observations.



Specification I: The Effect of Advertising on Participation

Instrumental Variable $PopShare_{m(c),b}$.
In-state population share of the media
market $m(c)$.

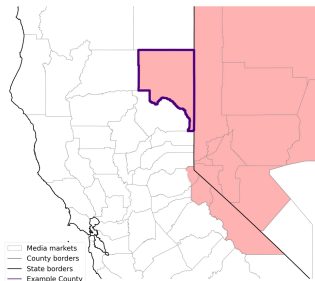
$$PopShare_{m(c),b} = \frac{\square}{\square + \square}$$



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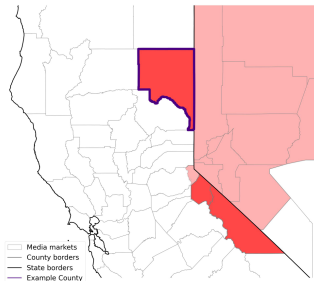
$$PopShare_{m(c),b} = \frac{\text{red square}}{\text{red square} + \text{white square}}$$



Specification I: The Effect of Advertising on Participation

Instrumental Variable $PopShare_{m(c),b}$.
In-state population share of the media
market $m(c)$.

$$PopShare_{m(c),b} = \frac{\text{Red Square}}{\text{Pink Square} + \text{Red Square}}$$



Specification I: First Stage

$$TotalAds_{m(c),b} = \alpha_b + \beta \times PopShare_{m(c),b} + \gamma_b \times PresidElect_{c,t(b)} + \epsilon_{c,b}$$

Table 1: Effect of in-state Population Share on the Number of Ads

	Total ads ($\div 100$)		
	(1)	(2)	(3)
$PopShare_{m(c),b}$	0.388*** (0.080)	0.518*** (0.071)	0.491*** (0.100)
Ballot FE	No	Yes	Yes
Presid. elections control	No	No	Yes
Observations	2,640	2,640	2,640
R ²	0.07	0.63	0.68

Specification I: Second Stage

$$Participation_{c,b} = \alpha_b + \beta \times Total\hat{Ads}_{m(c),b} + \gamma_b \times PresidElect_{c,t(b)} + \epsilon_{c,b}$$

Table 2: Second Stage - The Effect of Ads on Participation

	Participation Share (%)		
	(1)	(2)	(3)
Total Ads ($\div 100$)	-0.006 (0.062)	-0.010 (0.042)	-0.008 (0.049)
Ballot FE	No	Yes	Yes
Presid. elections control	No	No	Yes
Observations	2,640	2,640	2,640
R ²	.	0.55	0.16

Specification II: The Effect of Advertising on Outcome

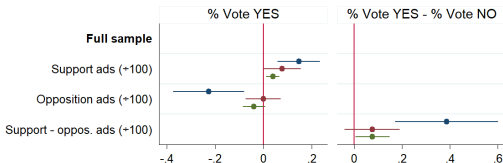
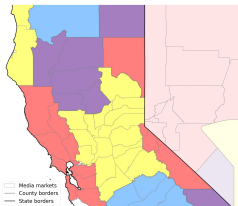
$$v_{c,b} = \alpha_b + \beta \times \text{Ad intensity}_{m(c),b} + \gamma_b \times \text{Presid Elect}_{c,t(b)} + \varepsilon_{c,b} \quad (1)$$

c denotes a county in media market $m(c)$, and b a ballot measure.

- $v_{c,b}$ is either:
 - %Vote Yes $_{c,b}$.
 - %Vote Yes $_{c,b}$ – %Vote No $_{c,b}$.
- **Ad intensity** $_{c,b,t}$ is either:
 - Support ads $_{m(c),b}$ and Opposition ads $_{m(c),b}$.
 - Support – Opposition ads $_{m(c),b}$.
- α_b denotes ballot measure fixed effects.
- **Presid Elect** $_{c,t(b)}$ is %Vote Democ $_{c,t(b)}$ – %Vote Repub $_{c,t(b)}$ in the previous presidential elections.

Specification II: The Effect of Advertising on Outcome

$$v_{c,b} = \alpha_b + \beta \times Ad\ intensity_{m(c),b} + \gamma_b \times Presid\ Elect_{c,t(b)} + \varepsilon_{c,b} \quad (2)$$

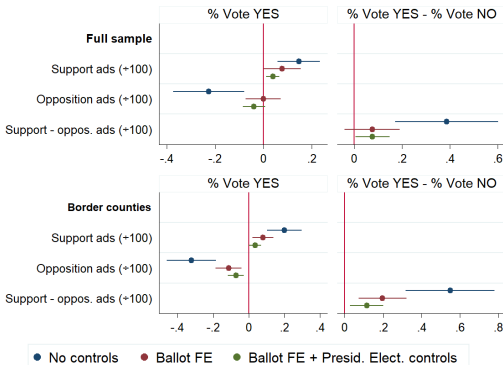
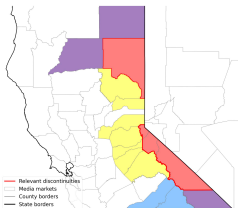


● No controls ● Ballot FE ● Ballot FE + Presid. Elect. controls

► Table results

Specification II: The Effect of Advertising on Outcome

$$v_{c,b} = \alpha_b + \beta \times Ad\ intensity_{m(c),b} + \gamma_b \times Presid\ Elect_{c,t(b)} + \varepsilon_{c,b} \quad (3)$$



► Table results

Why a Model?

- So far...
 - No evidence of informative advertising.
 - Evidence of persuasive advertising.
- The limitations of reduced-form...
 - Cannot account for strategic interaction between camps.
 - Cannot assess the effect of a spending cap.
- A model...
 - Accounts for mutual best responses.
 - Enables counterfactual outcomes for different spending cap thresholds.

- Two campaigns, indexed as i and $-i$.
- π_i is the private value of winning, drawn from $\pi_i \sim \phi$.
- q_i is the number of ads bought by each campaign, at unit price p .
- v_i are the votes obtained by camp i .
- Spending cap C (ignore for now).
- Function $f(\cdot)$ transforms ads into votes: $v_i - v_{-i} = f(q_i, q_{-i})$

The maximization problem of campaign i is:

$$\begin{aligned} \max_{q_i} \quad & \pi_i \cdot \mathbb{E}[\mathbb{1}(v_i > v_{-i})] - p \cdot q_i \\ \text{s.t.} \quad & p \cdot q_i \leq C \end{aligned}$$

→ Goal: Retrieve π_i with a GPV-like inversion (ECMA 2000)

- Simulate counterfactual q_i under different C .

Next steps

- Complete database for all 441 (approx) ballot measures
 - a) Classify by topic, path to ballot...
 - b) Incorporate audiences data
- Expand the model model
 - a) County-level, dynamics?
 - b) Estimate counterfactuals for contribution limits.
- Additional questions to look at:
 - a) Non-linearities (saturation)? Competing effects?
 - b) Mobilizing or stealing voters?
 - c) Which measures get to the ballot?
 - d) Other drivers for pass/fail?

APPENDIX

Identification advantages wrt “candidate elections”

- Compared to other elections, fewer concerns regarding:
 - *Reverse causality*: contributions not intended to change candidates' positions.
 - Still, ads might be systematically targeted to counties with less/higher support.
 - *Omitted variables bias*: candidate quality plays a less important role.
 - Still, other dimensions of the measure might be relevant.
 - *Within-candidate equilibrium effects*: no competing interests “within a campaign”.
 - Need to deal with equilibrium effects across donor blocks.

(Very) Preliminary Results - All counties

Table 3: OLS results for the effect of campaign advertising on vote share for ALL COUNTIES on the 50 ballot measures with the highest number of ads between 2010 and 2018.

	% vote YES (p.p.)			% vote YES - % vote NO (p.p)		
	(1)	(2)	(3)	(4)	(5)	(6)
Support ads ($\div 100$)	0.147*** (0.040)	0.078*** (0.014)	0.039*** (0.008)			
Opposition ads ($\div 100$)	-0.226*** (0.043)	-0.000 (0.011)	-0.037* (0.019)			
Support - opposition ads ($\div 100$)				0.387*** (0.070)	0.076*** (0.017)	0.076*** (0.020)
Ballot FE	No	Yes	Yes	No	Yes	Yes
Presid. elections control	No	No	Yes	No	No	Yes
Treatment sd	21.13/24.19	21.13/24.19	21.13/24.19	27.76	27.76	27.76
Observations	2,640	2,640	2,640	2,640	2,640	2,640
R ²	0.13	0.73	0.92	0.13	0.73	0.92

Two-way standard errors clustered by media market and ballot measure in parenthesis. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.10$.

(Very) Preliminary Results - All counties

Table 4: OLS results for the effect of campaign advertising on vote share for ALL COUNTIES on the 50 ballot measures with the highest number of ads between 2010 and 2018.

	% vote YES (p.p.)			% vote YES - % vote NO (p.p.)		
	(1)	(2)	(3)	(4)	(5)	(6)
Support expenditures (million \$)	0.987*** (0.282)	0.352** (0.138)	0.226 (0.148)			
Opposition expenditures (million \$)	-0.458* (0.264)	0.002 (0.037)	-0.068 (0.070)			
Support - opposition exps. (mill. \$)				1.288* (0.685)	0.144 (0.162)	0.201 (0.215)
Ballot FE	No	Yes	Yes	No	Yes	Yes
Presid. elections control	No	No	Yes	No	No	Yes
Treatment sd	4.21 / 5.24	4.21 / 5.24	4.21 / 5.24	5.70	5.70	5.70
Observations	2,640	2,640	2,640	2,640	2,640	2,640
R ²	0.08	0.73	0.92	0.06	0.73	0.92

Two-way standard errors clustered by media market and ballot measure in parenthesis. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.10$.

(Very) Preliminary Results - media market discontinuities

Table 5: OLS results for the effect of campaign advertising on vote share for BORDER COUNTIES on the 50 ballot measures with the highest number of ads between 2010 and 2018.

	% vote YES (p.p.)			% vote YES - % vote NO (p.p.)		
	(1)	(2)	(3)	(4)	(5)	(6)
Support ads ($\div 100$)	0.199*** (0.048)	0.079*** (0.029)	0.035* (0.018)			
Opposition ads ($\div 100$)	-0.321*** (0.069)	-0.112*** (0.036)	-0.072*** (0.022)			
Support - opposition ads ($\div 100$)				0.549*** (0.115)	0.197*** (0.062)	0.114** (0.043)
Ballot FE	No	Yes	Yes	No	Yes	Yes
Presid. elections control	No	No	Yes	No	No	Yes
Treatment sd	18.29/ 21.15	18.29/ 21.15	18.29/ 21.15	21.60	21.60	21.60
Observations	727	727	727	727	727	727
R ²	0.19	0.79	0.92	0.17	0.79	0.92

Two-way standard errors clustered by media market and ballot measure in parenthesis. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.10$.

(Very) Preliminary Results - media market discontinuities

Table 6: OLS results for the effect of campaign advertising on vote share for BORDER COUNTIES on the 50 ballot measures with the highest number of ads between 2010 and 2018.

	% vote YES (p.p.)			% vote YES - % vote NO (p.p)		
	(1)	(2)	(3)	(4)	(5)	(6)
Support expenditures (million \$)	0.781*** (0.215)	0.319** (0.148)	0.293 (0.186)			
Opposition expenditures (million \$)	-0.685* (0.394)	-0.177* (0.092)	-0.195 (0.127)			
Support - opposition exps. (mill. \$)				1.452** (0.625)	0.444* (0.226)	0.451 (0.317)
Ballot FE	No	Yes	Yes	No	Yes	Yes
Presid. elections control	No	No	Yes	No	No	Yes
Treatment sd	3.78/ 4.16	3.78/ 4.16	3.78/ 4.16	4.75	4.75	4.75
Observations	727	727	727	727	727	727
R ²	0.06	0.78	0.92	0.06	0.78	0.92

Two-way standard errors clustered by media market and ballot measure in parenthesis. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.10$.

State	2010	2012	2014	2016	2018	2020	Total
<i>California</i>	20	15	6	8	8	9	66
<i>Colorado</i>	4	2	3	6	6	7	28
<i>Oregon</i>	5	5	4	2	7	4	27
<i>Washington</i>	6	4	3	4	4	1	22
<i>Missouri</i>	3	4	4	2	7	2	22
<i>Arizona</i>	7	3	1	4	2	2	19
(...)							
Total	94	77	60	77	85	48	441

Table 7: Ballot initiatives per state and year

The table includes all ballot measures for which we observe at least 1 ad airing in our data. *Source: Wesleyan Media Project*

References i

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