Mobilization with campaign spending and polarization

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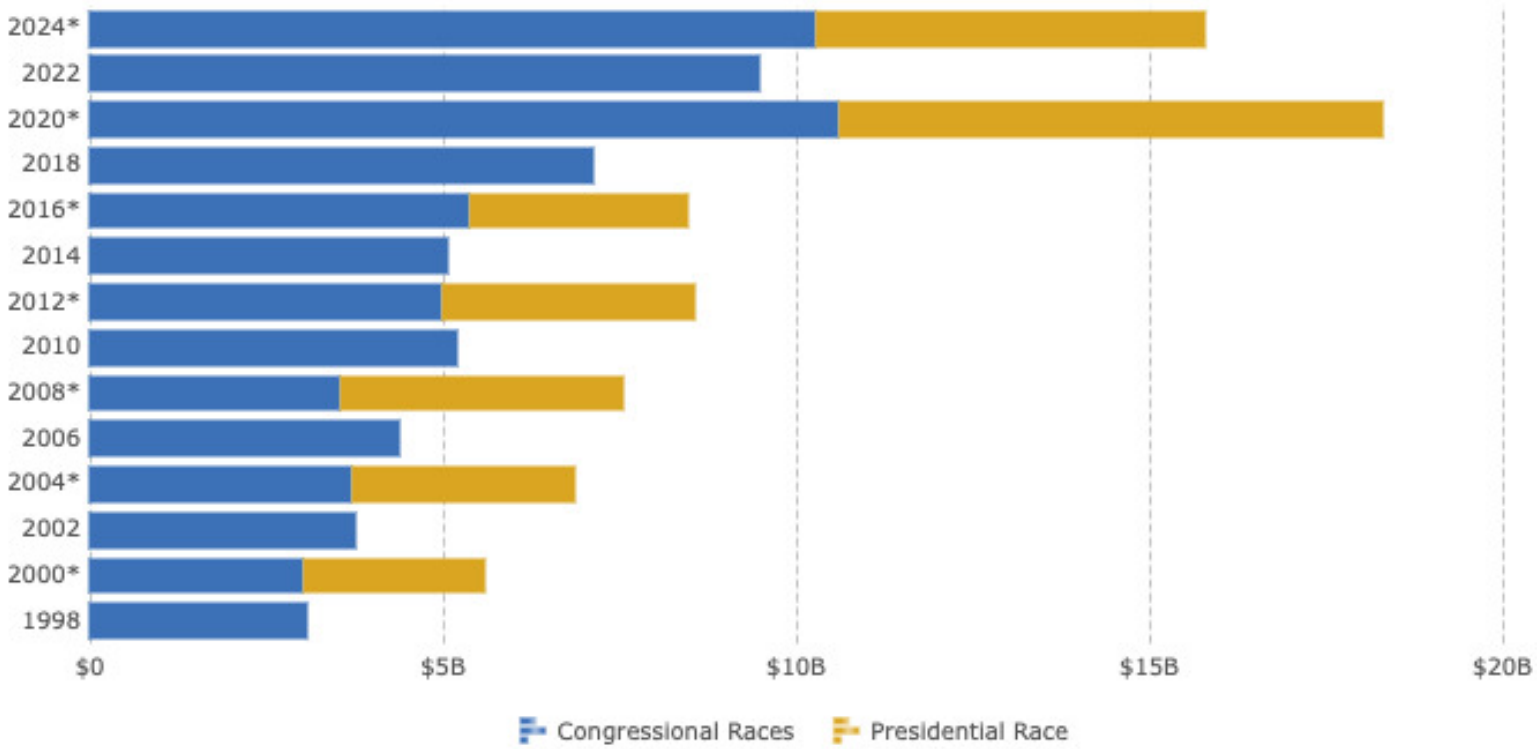
Motivation


2024*
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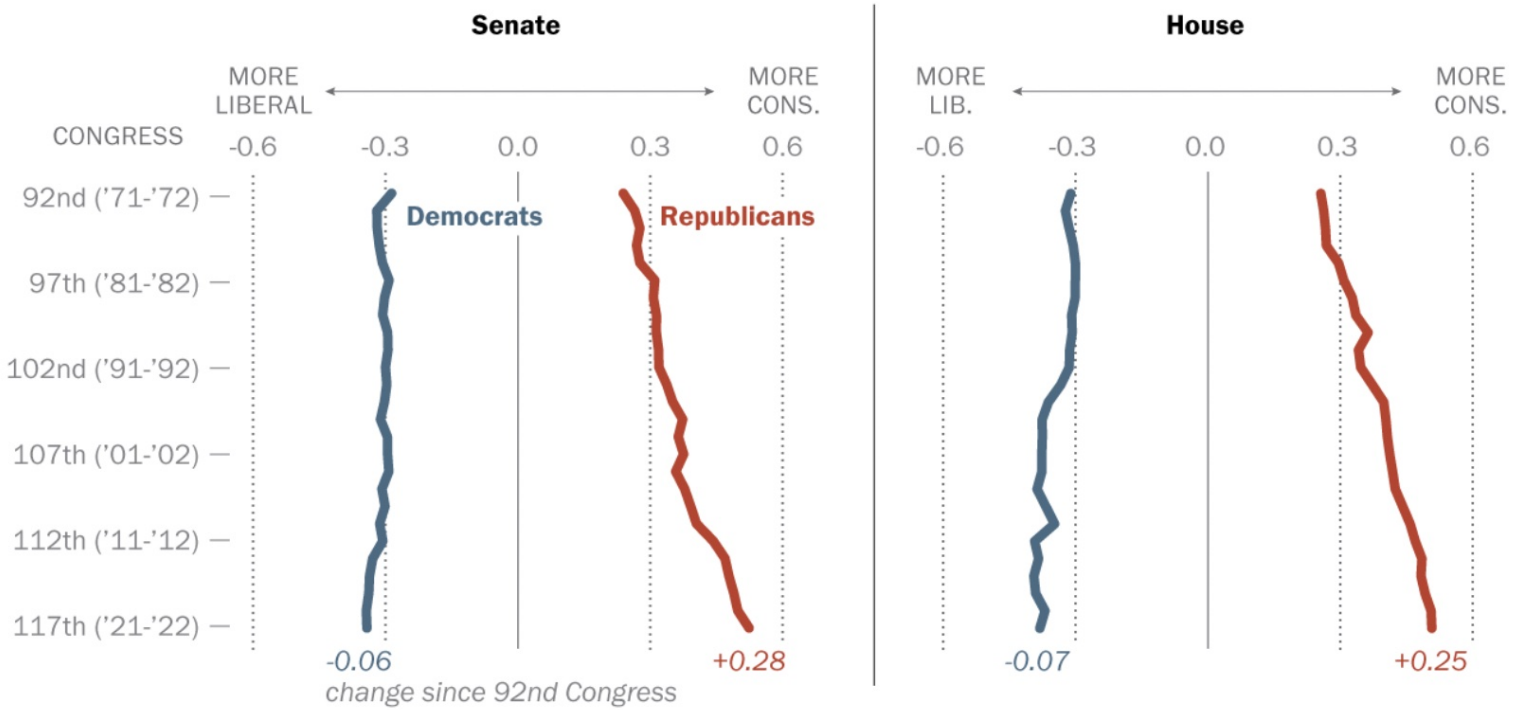
Congressional Races
Presidential Race

Motivation

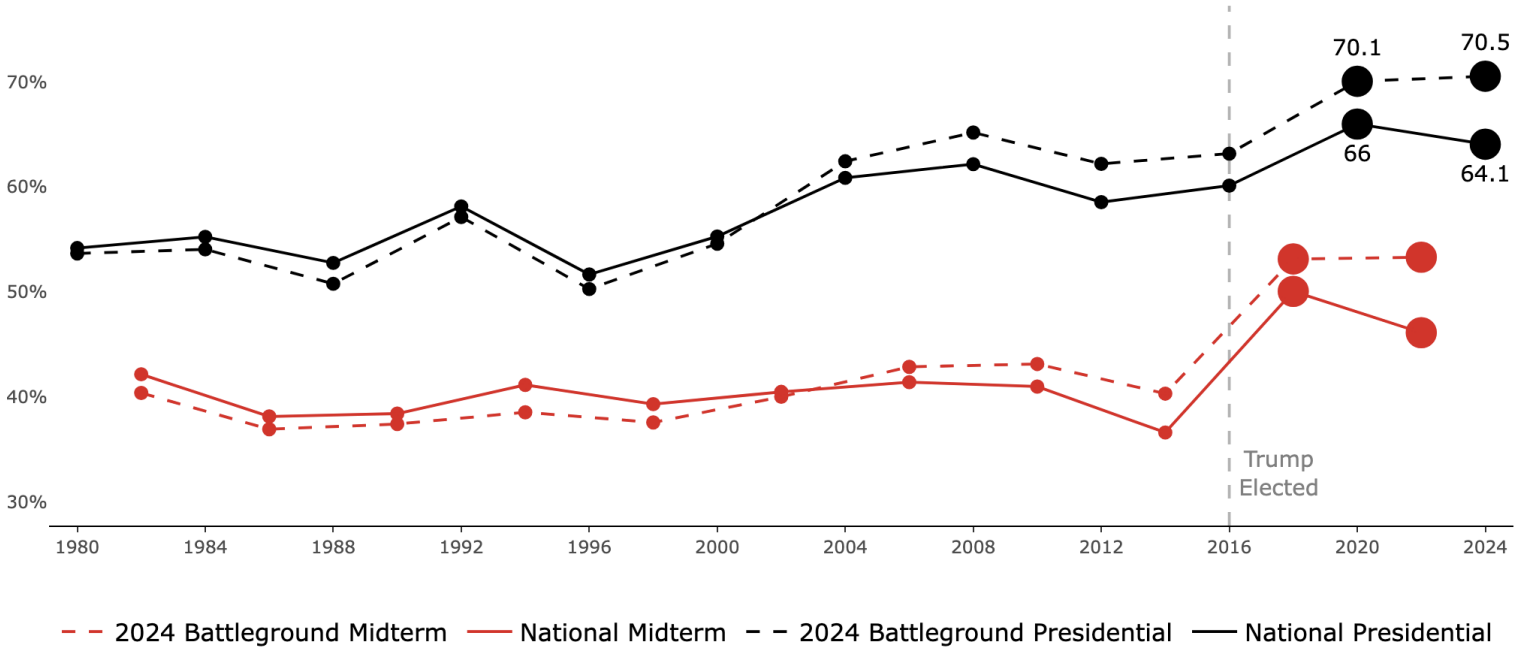
Average ideology of members, by Congress



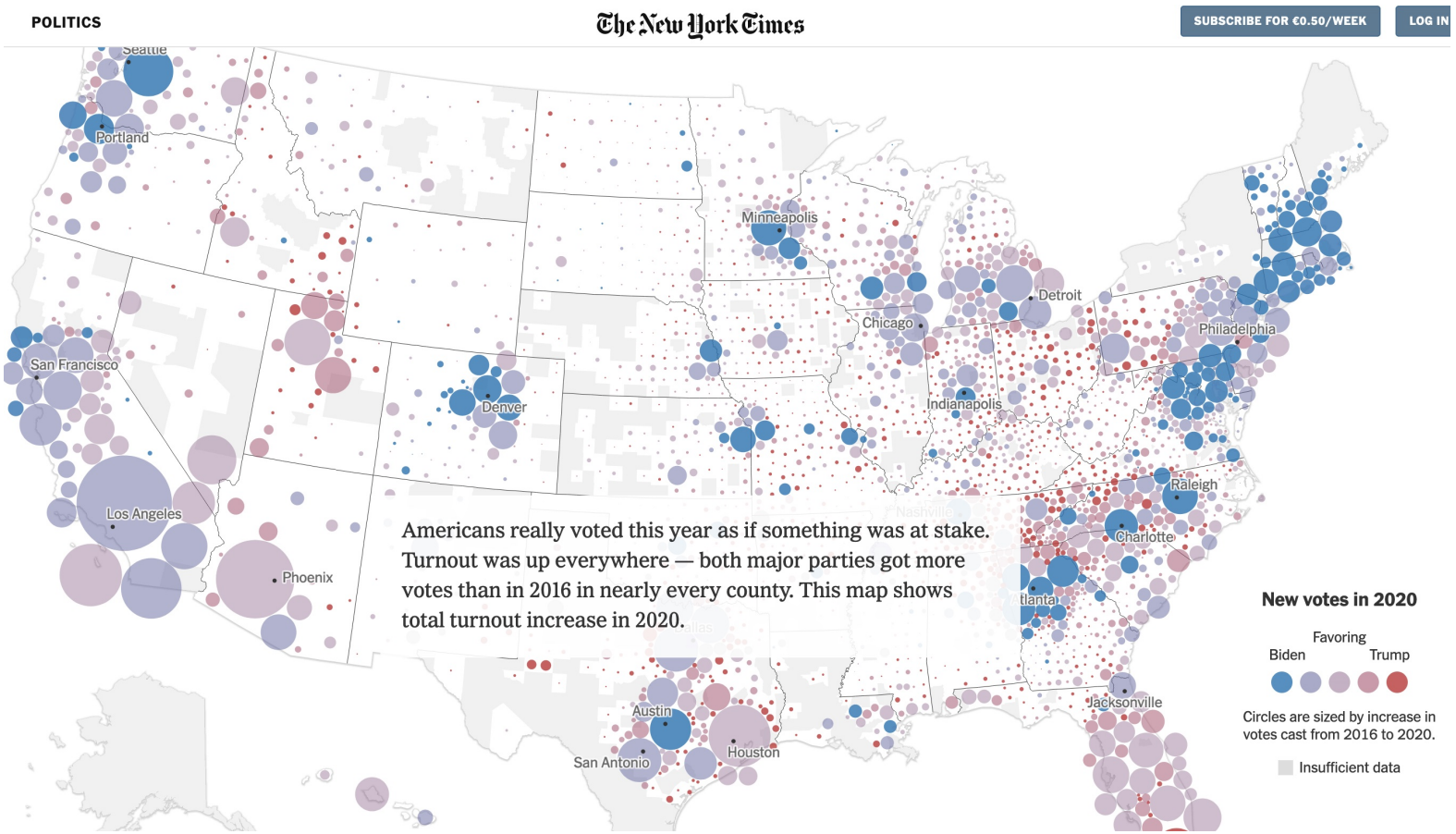
Note: Data excludes nonvoting delegates, as well as lawmakers who officially served but (due to illness, resignation or other factors) didn't have a scorable voting record for a given Congress. Party categories include independents who caucus(ed) with that party. Members who changed parties (or became independents) during a Congress were classified according to the status they held the longest during that Congress. For most of the 116th Congress, Rep. Justin Amash of Michigan was either an independent or a Libertarian, and didn't caucus with either major party.
Source: Pew Research Center analysis of Voteview DW-NOMINATE data accessed on Feb. 18, 2022.

PEW RESEARCH CENTER

Motivation


70%
60%
50%
40%
30%
1980
1984
1988
1992
1996
2000
2004
2008
2012
2016
2020
2024
70.1
70.5
66
64.1
Trump
Elected
2024 Battleground Midterm
National Midterm
2024 Battleground Presidential
National Presidential

Motivation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Americans really voted this year as if something was at stake. Turnout was up everywhere — both major parties got more votes than in 2016 in nearly every county. This map shows total turnout increase in 2020.
New votes in 2020
Favoring
Biden
Trump
Circles are sized by increase in votes cast from 2016 to 2020.
Insufficient data

Motivation

"Increasing polarization has not caused Americans to become disengaged from the political process. In 2004, according to data from the American National Election Studies, more Americans than ever perceived important differences between the political parties and cared about the outcome of the presidential election. As a result, voter turnout increased dramatically between 2000 and 2004, and record numbers of Americans engaged in campaign activities such as trying to influence their friends and neighbors, displaying bumper stickers and yard signs, and contributing money to the parties and candidates. The evidence indicates that rather than turning off the public and depressing turnout, polarization energizes the electorate and stimulates political participation." (Abramowitz & Saunders, 2008)

Motivation

- Despite the apparent link between polarization, campaign spending and turnout (most) formal models do not study those jointly.
- Develop a model with turnout depending on parties' strategic choice of platforms and campaign spending.
- Characterize equilibrium polarization and campaign spending.
- Reveal an inverted U-shaped relationship between the two.
- Provide comparative statics on how returns to mobilization and persuasion can drive polarization, campaign spending, and turnout.

Literature

Closest papers on effects of campaign technology on spending and polarization in models of electoral competition:

- Herrera et al (2008): Model of polarization, campaign spending and turnout
  (caveat: campaign technology can not explain increase in polarization and campaign spending)
- Balart et al (2022) & Hirsch (2023): Model of polarization and campaign spending
  (caveat: no turnout)

Timing

- Two office motivated parties $i = \{D, R\}$ maximizing their probability of winning the election net of the campaign effort cost.
- Policy space is the $[0, 1]$ interval.
- **Timing:**
  1. Stage 1: Parties D and R propose platforms d and $1 - r$. Polarization is $y = 1 - d - r$.
  2. Stage 2: Party i exerts costly campaign effort $e_i \in [0, 1]$, with marginal cost of effort normalized to one.

Voters

- Following Balart et al (2022), there is a mass of ideological voters $F(y)$ and a mass of impressionable voters $1 - F(y)$.
- Let $F(y) = z + (1 - z)y^w$ where $0 < w \leq 1$ and $0 < z < 1$ denoting the mass of voters that are ideological when $y = 0$

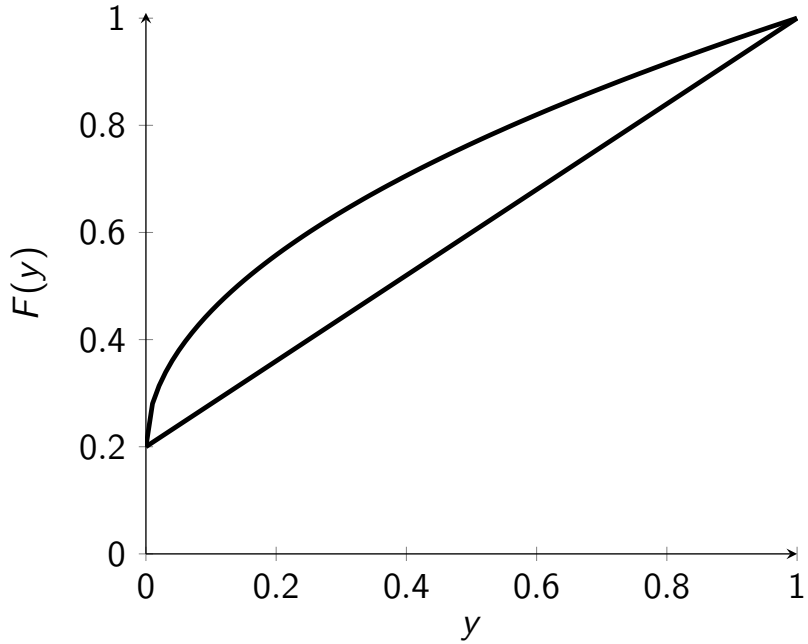


Figure: $z = 0.2,\ w = \{0.5, 1\}$

Ideological Voters

- Following Herrera et al (2008), ideological voters have ideal policies v uniformly distributed in $[0, 1]$.
- An ideological voter with ideal policy v votes for party D if

$$b_v + b - |v - d| > -|v - (1 - r)|,$$

  where b and b_v are shocks uniformly drawn from $[-\alpha, \alpha]$ and $[-\beta, \beta]$ respectively, and such that $\alpha \geq 1$ and $\beta \geq \alpha + 1$.
- All ideological voters participate in the election

Impressionable Voters

- Impressionable voters vote based on parties' campaign effort.
- **Mobilization:** The share of impressionable voters mobilized to vote in the election is given by

$$M(e_D, e_R) = (e_D^m + e_R^m)/2$$

- **Persuasion:** The fraction of mobilized impressionable voters persuaded to vote for party i is equal to

$$T_i(e_D, e_R) = \frac{e_i^t}{e_D^t + e_R^t}$$

Payoffs

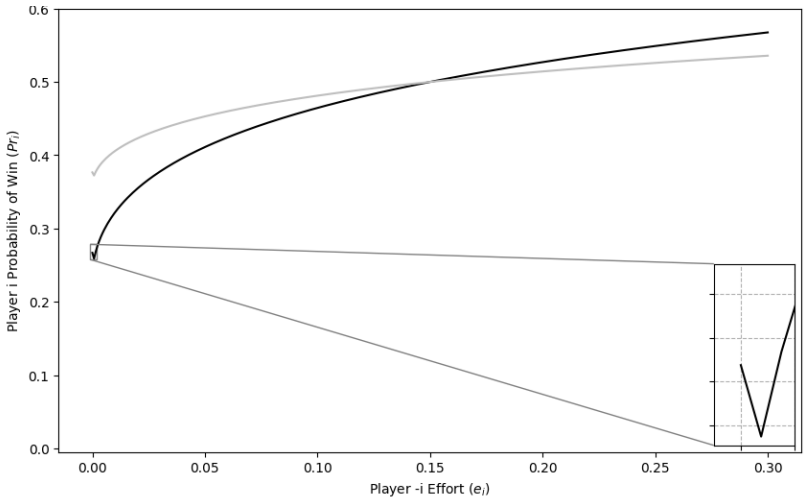
- The vote share of party i is equal to

$$v_i(d, r, e_D, e_R) = F(y)S_i(d, r) + (1 - F(y))M(e_D, e_R)T_i(e_D, e_R)$$

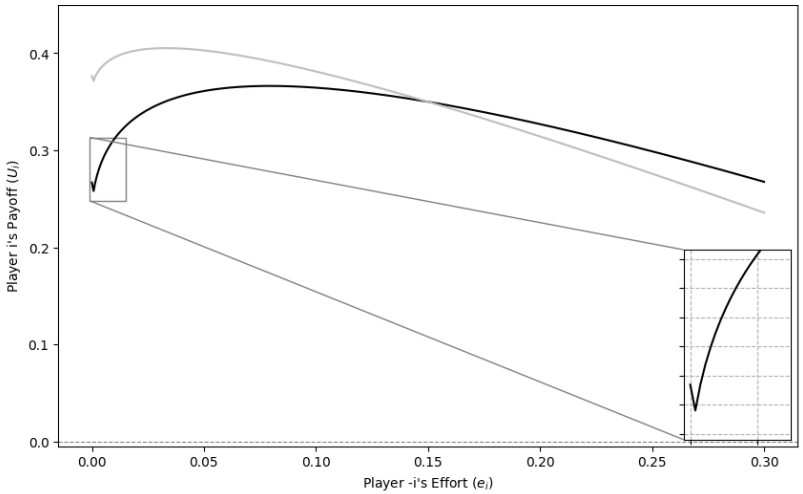
- Party's i payoff is defined as

$$\pi_i(d, r, e_D, e_R) = Prob(v_i(d, r, e_D, e_R) > v_{-i}(d, r, e_D, e_R)) - e_i$$

Second stage



(a) Probability of winning.



(b) Payoffs.

Figure: Probability of winning and party payoffs as functions of own spending. The solid black line corresponds to $d = r = 0.25$, and the dashed grey line to $d = r = 0.15$. The opposing party's spending is fixed at 0.15. Parameters: $\alpha = 1$, $\beta = 4$, $m = 0.2$, $t = 0.4$, $z = 0.5$.

Second stage

Proposition

Let $t < 1/2$, $m \leq \min\{t, 1-2t\}$ *and* $z \geq \frac{\beta t}{2^{m+1}\alpha^m(\alpha-1/4)^{1-m}+\beta t}$, *then*

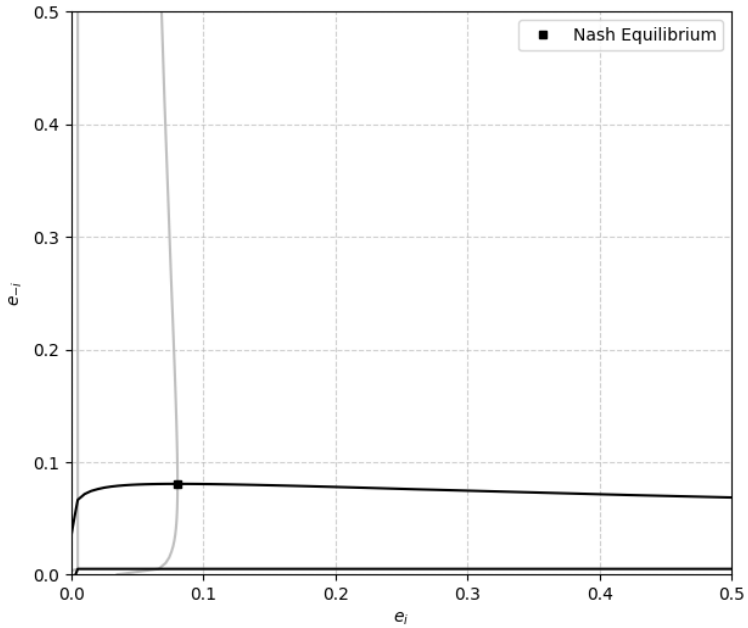
$$e^*(d,r) = e_D^*(d,r) = e_R^*(d,r) = \left(\frac{\beta t H(1-d-r)}{4\alpha}\right)^{\frac{1}{1-m}}$$

is the unique pure strategy Nash equilibrium of the campaign spending stage of the game.

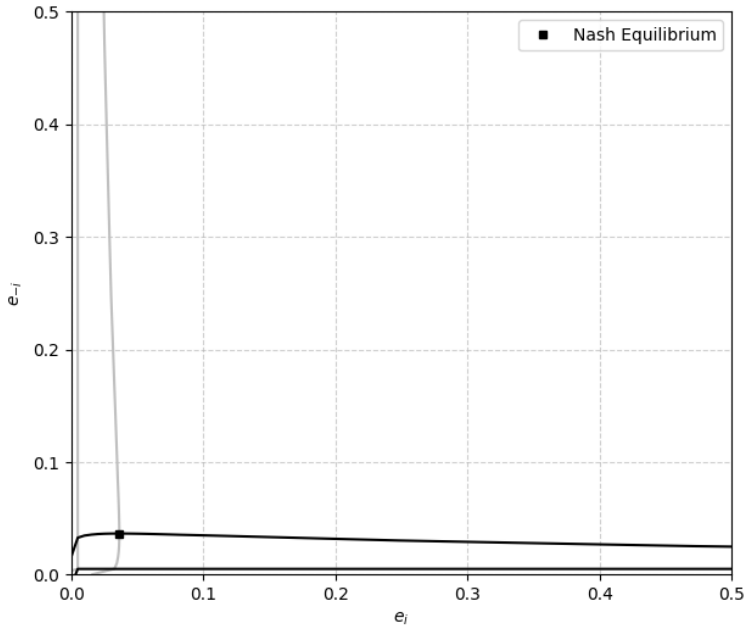
- **Comparative statics:** Effort is decreasing in y,α,m, increasing in t,and β.

Second stage

- **Comparative statics:** Effort is decreasing in y,α,m, increasing in t,and β.



(a) $d = r = 0.25 \implies y = 0.5$



(b) $d = r = 0.15 \implies y = 0.7$

Figure: First order conditions and equilibrium spending for different levels of polarization. Parameters: $\alpha = 1$, $\beta = 4$, $m = 0.2$, $t = 0.4$, $z = 0.25$.

First stage

Proposition

There is a unique subgame perfect Nash equilibrium where each party chooses platform $d = r = p^* \in (0, 1/2)$*, where* p^* *is the solution to*

$$\frac{1}{2\alpha}(1 - 2p^*) = \left.\frac{\partial e^*(d, p^*)}{\partial d}\right|_{d=p^*} = \left.\frac{\partial e^*(p^*, r)}{\partial r}\right|_{r=p^*}$$

Comparative Statics: Campaign effort

Proposition

Campaign effort in equilibrium follows an inverted U-shape in the equilibrium platform p^*.
The policy platform p^{max} providing the highest campaign expenditure depends only on z and w (the parameters of F).

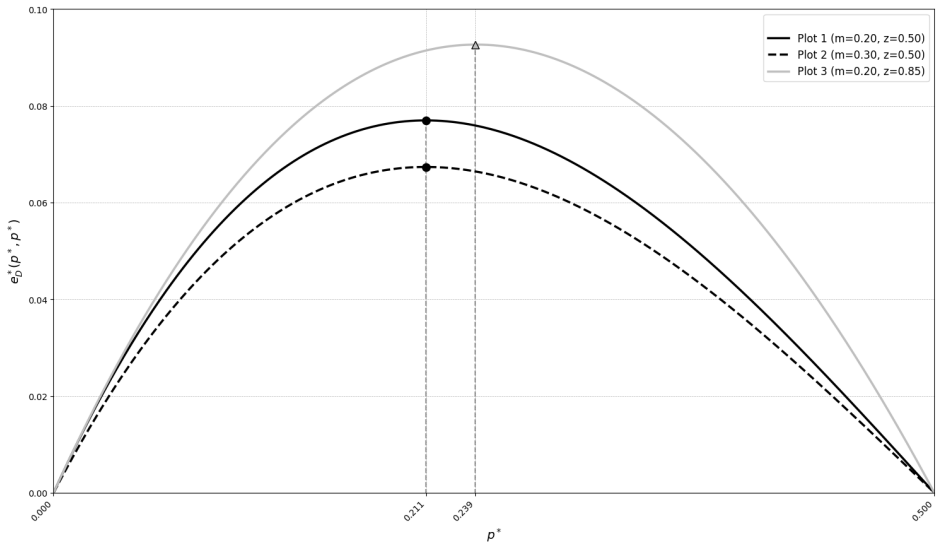


Figure: Equilibrium campaign spending $e^*(p^*, p^*)$ as a function of p^*, $\alpha = 1$, $\omega = 1$, $w = 1$.

Comparative Statics

Proposition

An increase (decrease) in the persuasiveness of spending, t, leads to more (less) extreme equilibrium platforms (i.e., $\frac{\partial p^*}{\partial t} \leq 0$). Equilibrium electoral spending increases in t if and only if $p^* \geq p^{max}$ (i.e., $p^* \geq p^{max} \iff \frac{\partial e_i^*(p^*,p^*)}{\partial t} \geq 0$).

Proposition

An increase in the returns of mobilization (i.e., a decrease in m), leads to more extreme equilibrium platforms (i.e., $\frac{\partial p^*}{\partial m} \geq 0$). Equilibrium electoral spending increases in the returns to mobilization if $p^* \geq p^{max}$ (i.e., $p^* \geq p^{max} \Rightarrow \frac{\partial e_i^*(p^*,p^*)}{\partial m} \leq 0$).

Turnout

$$Turnout = F(y) + (1 - F(y))M(e_D, e_R)$$

- For $p^* > p^{max}$: A parameter change that results to an increase in polarization and campaign spending, clearly leads to an increase in turnout.
- For $p^* < p^{max}$: A parameter change that results an increase in polarization and a decrease in campaign spending, also induces an increase in turnout.

Conclusions

- A spatial model of electoral competition with endogenous turnout
- Turnout moves together with polarization:

  "The evidence indicates that rather than turning off the public and depressing turnout, polarization energizes the electorate and stimulates political participation."(Abramowitz & Saunders, 2008)

Thank you!

THANK YOU!

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