Lobbying and Policy Extremism in Repeated Elections

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Outline

Motivation

Democratic elections involve voters, politicians, and interest groups.

These actors have heterogeneous preferences over policy, and they optimize in response to incentives.

Voters choose between a known (less risky) incumbent and an unknown (more risky) challenger.

Politicians choose between policies that are good in the short run and ones that are less desirable but offer greater chances of re-election in the long run. In addition, they consider payments from. . .

Motivation (cont.)

Lobby groups exert influence on politicians, trading off monetary payments for preferred policy.

We explore the interaction of these incentives in a dynamic model of electoral accountability featuring:

- infinite horizon, discrete time
- citizen candidates
- adverse selection
- two ideological lobby groups.

Motivation (cont.)

We find three sets of results:

- existence of simple lobbying equilibrium with "partitional form"
- when office incentives are high,
  - all equilibria are strongly partisan
  - as effectiveness of money becomes small, equilibria converge to the median ideal point
- as effectiveness of money becomes large, there are strongly partisan equilibria featuring arbitrarily extreme policy outcomes.

Related literature

Early dynamic models: Barro (1973), Ferejohn (1986)

Dynamic elections with adverse selection: Duggan (2000), Bernhardt et al. (2004), Banks and Duggan (2008), Bernhardt et al. (2009), Bernhardt et al. (2011)

Lobbying: Grossman and Helpman (1994), Snyder and Ting (2008)

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Elements of the Model

$N = [\underline{\theta}, \overline{\theta}]$	space of citizen types
$X = [0, 1]$	policy space
$x(\theta)$	ideal point, increasing in type θ, $x(\underline{\theta}) = 0$, $x(\overline{\theta}) = 1$
θ_m	median citizen type, ideal point x_m
L, R	lobby groups, types $\underline{\theta}, \overline{\theta}$
$h(\theta)$	challenger density, positive on $(\theta_m - \epsilon, \theta_m + \epsilon)$
$\beta \geq 0$	office benefit
$\gamma \geq 0$	effectiveness of money
$\delta \in [0, 1)$	discount factor

Timing

Each period period begins with a citizen-politician in office:

- in the first term of office, **active** lobby group offers (y, m),
  - active group is on the same side of median voter as politician
- incumbent chooses between the offer or proceeding independently, and
  - if the offer is accepted, payment m is made in current period, and incumbent is committed to y for every term of office,
  - if it is rejected, the incumbent chooses policy x independently,
- a challenger is randomly drawn,
- voters choose between the candidates by a majority vote,
  - ties go to the incumbent, except in special situations off the equilibrium path,
- the process repeats in all subsequent periods.

Information

Politician types: observed by lobby groups, but not observed by voters.

Lobby offers and acceptance decision: observed by lobby groups and politicians, but not observed by voters.

Policy choices: observed by all citizens.

Payoffs

Stage payoff from policy x to type θ citizen is

$$u_\theta(x) \;=\; \theta v(x) - c(x) + k_\theta,$$

where $v' > 0$, $v'' \leq 0$, $c' \geq 0$, and $c'' > 0$.

Quadratic special case: $u_\theta(x) = -(x-\theta)^2$.

Assume **weak symmetry:** $u_m(0) = u_m(1)$.

Payoffs (cont.)

Office holders receive additional office benefit β in each term of office.

If offer (y, m) is accepted, then payoff to type θ office holder is

$$u_\theta(y) + \gamma m + \beta,$$

in current period, and payoff to lobby group with $\tilde{\theta} \in \{\underline{\theta}, \overline{\theta}\}$ is

$$u_{\tilde{\theta}}(y) - m.$$

Streams of stage payoffs are discounted according to δ.

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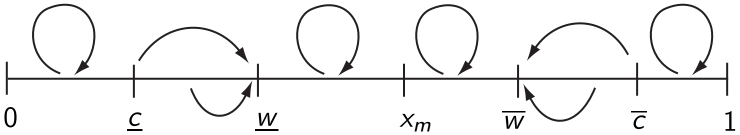
Example with $\gamma = 0$

Then lobby groups play no role. Equilibrium is characterized by:

$[\underline{w}, \overline{w}]$	**win set** of policies leading to re-election consists of each x that gives the median voter at least the continuation value of a challenger
$[\underline{c}, \overline{c}]$	**compromise set** of politicians who are re-elected, where $x(\theta) \in [\underline{c}, \overline{c}]$ implies choice of winning x closest to the ideal point, all others choose ideal point.

Example (cont.)



Results:

- existence of "simple electoral equilibria"
- when $\delta\beta$ is high, the unique equilibrium features median convergence,

$$\underline{w} = \overline{w} = x_m \quad \text{and} \quad \overline{c} - \underline{c} = 1.$$

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Stationary Perfect Bayesian Equilibrium

Stationary strategies and beliefs, Ψ:

$\lambda_L \colon [\underline{\theta}, \theta_m] \to X$	policy offer of L (likewise, R)
$\mu_L \colon [\underline{\theta}, \theta_m] \to \Re$	money offer of L (likewise, R)
$\alpha_\theta \colon X \times \Re \to \{0, 1\}$	acceptance strategy of type θ politician
$\pi_\theta \in X$	default policy choice of type θ politician
$\nu_\theta \colon X \to \{0, 1\}$	voting strategy of type θ voter
$\kappa \colon X \to \Delta(N)$	voter belief system

Ψ is a **stationary PBE** if strategies are optimal, voting is sincere, and beliefs are consistent with Bayes rule for all histories.

Continuation Values

Given Ψ, voter θ's expected discounted payoff of a challenger is

$$V_\theta^C \;=\; \frac{\mathbb{E}_{P^C}[u_\theta(z)]}{1-\delta}.$$

Here, P^C is the **challenger continuation distribution,** which depends on Ψ and δ but is independent of voter types.

Think of V_θ^C as a weighted average payoff from policy choices of a newly elected politician.

Continuation Values (cont.)

Given Ψ, if incumbent chooses x, then the expected discounted payoff to the voter θ from re-electing is

$$V_\theta^I(x) \;=\; \frac{\mathbb{E}_{P^I}[u_\theta(z)]}{1-\delta},$$

where P^C is the **incumbent continuation distribution.**

The incumbent is "above average" for voter θ if $V_\theta^I(x) > V_\theta^C$.

Win Sets

Median decisiveness: Given Ψ, an incumbent who chooses x is weakly preferred to a challenger by a majority of voters if and only if $V_m^I(x) \geq V_m^C$.

Let W be the **win set** consisting of policies x such that a politician who chooses x is re-elected.

We look for stationary PBE such that

$$W = \left\{ x \mid \frac{u_m(x)}{1-\delta} \geq V_m^C \right\},$$

so voters use a simple retrospective rule: what have you done for me lately?

Dynamic Utility

Given such Ψ, the **dynamic utility** from x for the type θ politician is

$$U_\theta(x) \;=\; \begin{cases} \frac{u_\theta(x)}{1-\delta} & \text{if } x \in W, \\ u_\theta(x) + \delta V_\theta^C & \text{else,} \end{cases}$$

and **dynamic office benefit** for politicians is

$$B(x) \;=\; \begin{cases} \frac{\beta}{1-\delta} & \text{if } x \in W, \\ \beta & \text{else.} \end{cases}$$

Simple Lobbying Equilibrium

A **simple lobbying equilibrium** is a stationary PBE such that:

- the win set is

$$W = \left\{ x \in X \mid \frac{u_m(x)}{1-\delta} \geq V_m^C \right\},$$

- for each type θ, the default policy ξ_θ solves

$$\max_x U_\theta(x) + B(x),$$

Simple Lobbying Equilibrium (cont.)

. . . and

- for each politician type θ and offer (y, m), we have $\alpha_\theta(y, m) = 1$ if and only if

$$U_\theta(y) + \gamma m + B(y) \quad \geq \quad U_\theta(\xi_\theta) + B(\xi_\theta),$$

- for each politician type θ, the active group solves

$$\max_{(y,m)} U_G(y) - m$$
$$\text{s.t. } U_\theta(y) + \gamma m + B(y) \; \geq \; U_\theta(\xi_\theta) + B(\xi_\theta).$$

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Existence of Equilibrium

Theorem 1: A simple lobbying equilibrium exists.

Given an arbitrary challenger continuation distribution P, we calculate hypothetical continuation values, win set, default policy choices, and lobby offers:

$$\begin{array}{c} P \rightarrow V_\theta^C(P) \rightarrow W(P) \rightarrow \xi_\theta(P) \\ \downarrow \\ P' \leftarrow (\lambda_G(\theta|P), \mu_G(\theta|P)) \leftarrow \alpha_\theta(\cdot|P) \end{array}$$

By Glicksberg's theorem, this mapping has a fixed point, which yields an equilibrium.

Partitional Form of Equilibrium

A byproduct of the proof is that equilibria have a **partitional form:** there are cutoffs $(\underline{c}, \underline{e}, \underline{w}, \overline{w}, \overline{e}, \overline{c})$ with

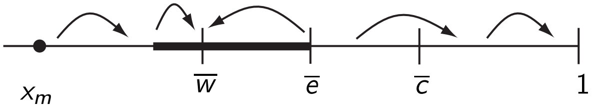
$$\underline{c} \leq \min\{\underline{e}, \underline{w}\} \quad \text{and} \quad \max\{\overline{w}, \overline{e}\} \leq \overline{c}$$

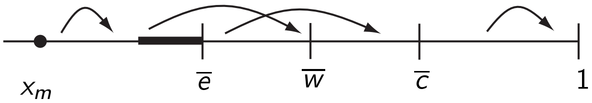
such that

- the win set is $W = [\underline{w}, \overline{w}]$,
- types with $x(\theta) \in C = [\underline{c}, \overline{c}]$ choosing winning policies by default,
- types with $x(\theta) \in E = [\underline{e}, \overline{e}]$ are offered winning policies.

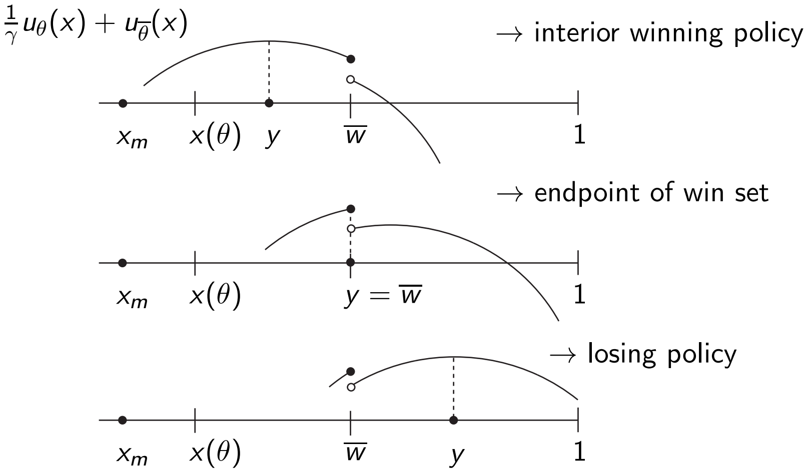
Partitional Form of Equilibrium (cont.)

Theorem 2: Every simple lobbying equilibrium has the partitional form.





Optimal Lobby Offers



Strongly Partisan Equilibria

An equilibrium is **strongly partisan** if all politicians from the same side choose the same policy: for all θ,

- $\theta < \theta_m$ implies $\lambda_L(\theta) = \underline{w}$,
- $\theta > \theta_m$ implies $\lambda_R(\theta) = \overline{w}$.

Then $\overline{w} - \underline{w}$ measures the extent of polarization.

Let $x_R(\theta)$ solve

$$\max_x \frac{1}{\gamma} u_\theta(x) + u_{\overline{\theta}}(x),$$

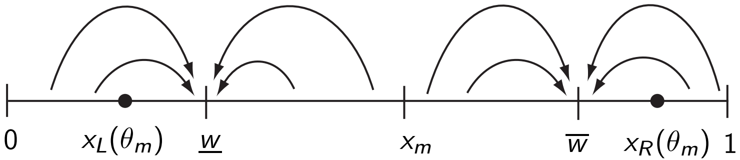
and likewise $x_L(\theta)$.

Strongly Partisan Equilibria (cont.)

Theorem 3: Fix γ. When $\delta\beta$ is large, every equilibrium is strongly partisan, and there is a strongly partisan equilibrium with win set $[\underline{w}, \overline{w}]$ if and only if $u_m(\underline{w}) = u_m(\overline{w})$ and

$$x_L(\theta_m) \;\leq\; \underline{w} \quad \text{and} \quad \overline{w} \;\leq\; x_R(\theta_m).$$

Strongly Partisan Equilibria (cont.)



Accordingly, the most polarized equilibrium satisfies at least one of the above inequalities with equality.

Strongly Partisan Equilibria (cont.)

Idea of proof: Let $\delta\beta$ be large enough that (i) extreme types $\underline{\theta}$ and $\overline{\theta}$ are always willing to compromise to the median x_m by default, and (ii) cost of compensating for a loss is prohibitive to lobby groups.

In equilibrium, every politician type is lobbied to the win set, so all types choose a policy that gives the median voter at least V_m^C.

Since no politician type is strictly below average, this implies no politician type is strictly above average, so all politicians give the median voter the same payoff, V_m^C.

Thus, the equilibrium is strongly partisan.

Dynamic Median Voter Theorem

Theorem 4: Let $\delta\beta$ be large. As $\gamma \to 0$, every equilibrium is strongly partisan, and the win set $[\underline{w}, \overline{w}]$ of the most polarized equilibrium converges to the median policy, i.e., $\underline{w} \to x_m$ and $\overline{w} \to x_m$.

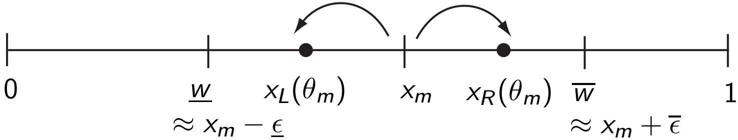
Idea of proof: Let $\delta\beta$ be large enough that the extreme types are always strictly willing to compromise to the median by default.

If the result doesn't hold, we can select equilibrium win sets such that $\underline{w} \to x_m - \underline{\epsilon}$ and $\overline{w} \to x_m + \overline{\epsilon}$ as $\gamma \to 0$.

When γ is small enough, every politician type is lobbied to the win set, so no type is strictly below average, so no type is strictly above average.

Dynamic MVT (cont.)

As γ becomes small, we have $x_G(\theta_m) \to x_m$, so lobbies do not exert much influence on the median politician type:



But then types close to the median are lobbied to the interior of the win set when γ is small, so they are strictly above average, a contradiction.

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Effect of Money

A sequence of equilibria **becomes extremist** if each politician type is offered arbitrarily extreme policies:

$$\lambda_L(\theta_m) \to 0 \quad \text{and} \quad \lambda_R(\theta_m) \to 1.$$

Theorem 6: Fix δ and β. When γ is large, every equilibrium is strongly partisan, and the most polarized equilibria become extremist.

Effect of Money (cont.)

Idea of proof: Consider any sequence of equilibria such that $\underline{w} \to w_*$ and $\overline{w} \to w^*$. We consider two cases.

Case 1: $w_* = 0$ and $w^* = 1$. When γ is large enough, the cost of compromise for the extreme types becomes small, so all politician types are lobbied to winning policies.

Then no politician types are strictly below average, so no type can be strictly above average. Thus, equilibria are strongly partisan.

Effect of Money (cont.)

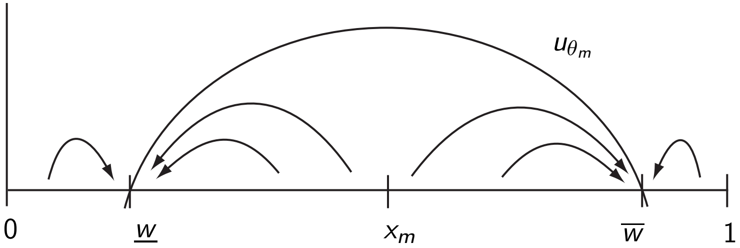
Case 2: $w_* > 0$ and $w^* < 1$. As γ becomes large, we have $x_L(\theta_m) \to 0$ and $x_R(\theta_m) \to 1$, so that

$$x_L(\theta_m) < \underline{w} \quad \text{and} \quad \overline{w} < x_R(\theta_m),$$

and no politician type is lobbied to the interior of the win set.

This means that no type is strictly above average, so no type can be strictly below average. Thus, equilibria are again strongly partisan.

Effect of Money (cont.)



Choose $\overline{w}$ and $\underline{w}$ so that $u_m(\overline{w}) = u_m(\underline{w})$ and so extreme that (i) we have

$$\frac{u_{\overline{\theta}}(\overline{w})}{1-\delta} \quad > \quad u_{\overline{\theta}}(1) + \delta V^*_{\overline{\theta}},$$

where $V^*_{\overline{\theta}}$ is the expected payoff to $\overline{\theta}$ if all challengers $\theta < \theta_m$ choose $\underline{w}$ and all $\theta > \theta_m$ choose $\overline{w}$.

Effect of Money (cont.)

Also, choose $\overline{w}$ and $\underline{w}$ so that (ii) a similar inequality holds for $\underline{\theta}$.

As γ becomes large, we have $x_L(\theta_m) \to 0$ and $x_R(\theta_m) \to 1$, and thus

$$x_L(\theta_m) < \underline{w} \quad \text{and} \quad \overline{w} < x_R(\theta_m).$$

Then inequalities (i) and (ii) imply lobby groups optimally offer the endpoints $\underline{w}$ and $\overline{w}$, so there is an equilibrium with win set $[\underline{w}, \overline{w}]$, so the most polarized equilibria become extremist.

Least Polarized Equilibria

Define the **dichotomous model** so that

- $\beta = 0$

and the distribution of challengers has support on $\{\underline{\theta}, \overline{\theta}\}$ with

- probability $H(\theta_m)$ on $\underline{\theta}$,
- probability $1 - H(\theta_m)$ on $\overline{\theta}$.

Theorem 8: Fix δ and β. When γ is large, the least polarized equilibrium win sets converge to an equilibrium win set $[\underline{w}, \overline{w}]$ of the dichotomous model.

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Extensions

Partisan challengers: Two parties, $\pi \in \{0, 1\}$, with party π challenger drawn from density h^π.

An incumbent from π runs against challenger from $1 - \pi$.

In general, win set $[\underline{w}^\pi, \overline{w}^\pi]$ depends on party of incumbent.

Now define a strongly partisan equilibrium to also have win set that is independent of π.

All results go through unchanged.

Extensions (cont.)

Asymmetric lobby groups: Assume $u_m(0) < u_m(1)$. Results are unchanged, except for Theorem 6 (on extremist equilibria). Fix δ and β. When γ is large, for every selection of equilibria, we have

$$\limsup V_m^C \quad \leq \quad \frac{u_m(1)}{1-\delta}.$$

Conclusion

The centripetal effect of office incentives is robust to lobbying: when office incentives are high and effectiveness of money is low, equilibrium policies are close to the median.

But money has a centrifugal effect, in a well-defined sense: fixing office incentives, there exist arbitrarily extreme equilibria as money becomes more effective.

Directions to think about:

- modeling campaign financing explicitly,
- endogenizing the active lobby group,
- endogenizing the challenger.