Advanced Economic Theory
Models of Elections
Lecture 7

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Elections and lobby influence

. In this model, lobbies offer each of two candidates a campaign contribution schedule conditional on the electoral platform.

. Informed voters vote for platform closest to their ideal policies.

. Impressionable voters more likely vote for the candidate with greater campaign contributions.

. Equilibrium platforms maximize a weighted sum of the lobbies and informed voters payoff.

. The advantaged candidate receives more contribution and weighs lobbies more in the platform choice.

. In equilibrium lobbies make contribution to secure candidates' support and possibly to influence election outcomes.

The model (Grossman and Helpman 1996)

. Electoral competition is modelled as probabilistic voting.

. Candidates A, B choose platforms $x_A, x_B \in \mathbb{R}^d$ to maximize expected vote shares.

. There are 2 types of voters: informed and impressionable.

. The fraction of impressionable voters is a.

. Each informed voter j votes A if $L_j(x_A) - L_j(x_B) \geq \eta_i$.

. L_j is a continuously differentiable loss function, strictly decreasing in the distance $||x - b_j||$ from a bliss point b_j in $\mathbb{R}^d$.

. j's idiosyncratic bias η_j is private information, i.i.d. across j of distribution F uniform on $(-\frac{1/2+b}{f}, \frac{1/2-b}{f})$.

. $L = \frac{1}{m_j} \int_J L_j dj$ is the average loss function of informed voters.

. Each candidate i's campaign budget is c_i.

. The fraction of impressionable voters who vote for A is

$$H(c_A - c_B) = 1/2 + b + h(c_A - c_B),\ h > 0.$$

. The electoral share of candidate A is:

$$s_A(x, c) = b + 1/2 + (1 - a)[L(x_A) - L(x_B)] + ah(c_A - c_B)$$

. After the election, the legislature implements policy x_A with prob. $p(s_A)$, and x_B with prob. $1 - p(s_A)$,

. p is strictly increasing, $p(0) = 0$, $p(1/2) = 1/2$, and $p(1) = 1$.

. Before candidates announce platforms, a lobby offers a contribution schedule $C_i : x_i \mapsto c_i$ to the candidates $i = A, B$.

. $C_i(x_i)$ is how much i will receive if committing to platform x_i.

. The lobby's payoff is

$$u_\ell(x; C) = p(s_A)L_\ell(x_A) + [1 - p(s_A)]L_\ell(x_B) - C_A(x_A) - C_B(x_B).$$

Analysis

. Suppose candidate B accepts the lobby's offer C_B, x_B.

. If candidate A rejects the lobby's offer C_A, x_A,

it chooses $x_A = x^*$ s.t. $DL(x^*) = 0$.

and obtains share of votes:

$$s_A(x^*, x_B; 0, C_B(x_B)) = b + 1/2 + (1-a)[L(x^*) - L(x_B)] - ahC_B(x_B).$$

. Candidate A accepts the lobby's offer C_A, x_A if

. $x_A = \arg\max_x s_A(x, x_B; C_A(x), C_B(x_B))$

$= b + 1/2 + (1-a)[L(x) - L(x_B)] + ah(C_A(x) - C_B(x_B))$.

. $s_A(x_A, x_B; C_A(x_A), C_B(x_B)) \geq s_A(x^*, x_B; 0, C_B(x_B))$.

. Simplifying the above participation constraint yields:

$C_A(x_A) \geq \frac{(1-a)f}{ah}[L(x^*) - L(x_A)] + C_B(x_B)$ for $i = A, B$.

. The participation constraint of candidate B is analogous.

. GH assume participation constraints hold on neighborhood of x_i:
$C_i(x_i') \geq \frac{(1-a)f}{ah}[L(x^*) - L(x_i')] + C_j(x_j)$ for $x_i' \in O(x_i)$, $i = A, B$.

. In equilibrium, the lobby chooses offers C, x to maximize her payoff $u_\ell(x; C)$ subject to "extended" participation constraints.

Proposition If both candidates participation constraints hold with equality, then the equilibrium platforms are

$$x_i = \arg\max_x [p(s_i)L_j(x) + \frac{(1-a)f}{ah}L(x)], \text{ for } i = A, B,$$

where $s_A = 1/2 + b$ and $s_B = 1/2 - b$.

. The lobby makes both candidates act as if maximizing a weighted sum of the average informed voter payoff and its own payoff.

. In equilibrium, the lobby's contributions cancel out: shares s_i are the same as if there were no lobby.

Proposition If lobby's offers satisfy the participation constraints with equality, then $L_\ell(x_i)$ decreases and $L(x_i)$ increases in $\frac{(1-a)f}{ah}$.

. Candidates platforms are closer to the lobby's ideal point when voters are more impressionable, i.e. ah increases.

. Platforms are closer to the average informed voter's ideal point when informed voters preference diversity is smaller (f increases).

Proposition If $b > 0$, then candidate B's participation constraint is satisfied with equality.

. The participation constraint must necessarily hold only for the disadvantaged candidate.

. The only reason to support the disadvantaged candidate is to ensure its obedience.

Proposition If $b > 0$ then, whether or not candidate A's constraint is binding, $L_\ell(x_A) > L_\ell(x_B)$, $L(x_A) < L(x_B)$, and $c_A > c_B$.

. The advantaged candidate has greater contributions and is more likely to win than when contributions are banned/capped.

. The advantaged candidate is more costly to bribe.

. And she is more valuable to bribe, as her platform is more likely to be implemented in the legislature.

. The lobby's offers make the advantaged candidate choose platforms closer to the lobby's ideal point.

. This holds when the lobby's offer participation constraint binds, and a fortiori when it does not.

Proposition If $b > 0$ and $p'(s_A)ah[L_\ell(x_A) - L_\ell(x_B)] > 1$, where x_i maximizes $[p(s_i)L_\ell(x) + \frac{(1-a)f}{ah}L(x)]$, then candidate A's participation constraint holds as a strict inequality.

. The lobby may give the advantaged candidate more than what is needed to gain its obedience.

. This is to increase the candidate's vote share, and hence the probability that its platform is implemented.

. When this is the case, the lobby has an "electoral motive" to support the advantaged candidate.

. A sufficient condition is that policies are sensitive to vote share (high $p'(s)$), and vote share sensitive to contributions (high ah).

The multiple lobby case

. GH generalize some of these results to the multiple lobby case.

. If all lobbies' offers satisfy both parties' participation constraints with equality, then each candidate's equilibrium platform maximizes a weighted sum of lobbies and average informed voter's payoff.

. However, equilibrium need not be unique.

. It may be that $b > 0$, but lobbies coordinate on contributing more to candidate B, who then captures the majority of seats.

. Further, at most one lobby's offer to a unique candidate may satisfy the participation constraint with strict inequality.

. And if all lobbies are "small," then none will contribute in excess of binding participation constraints.

Activism and polarization (Venkatesh 2018)

. How are grass-root activists different from organized lobbies?

  . Lobbies are long-term first-movers: they offer implicit contracts to ensure obedience;

  . activists are "myopic" second-movers: they mobilize and choose effort in response to candidates' platforms.

. Grossman and Helpman show that lobbies pull policy towards a weighted average of their ideal policies.

. In elections with aggregate uncertainty, this paper shows that ideologically opposed activists lead to more moderate platforms.

. As activists polarize, platforms may diverge less or more, depending on mobilization marginal cost and benefit elasticities.

The model

. Policy-motivated candidates $i = L, R$ simultaneously announce platforms $x_i \in \mathbb{R}$.

. Then, activists $i = L, R$ choose contributions $c_i \geq 0$ at cost $k(c_i) = c_i^g$.

. Finally, the median voter observes platforms x_L, x_R and contributions c_L, c_R, and decides the winner.

. Median voter's ideal platform m is unknown to candidates and activists, m is uniformly distributed on $[-1, 1]$.

. Each candidate i payoff is:

$$u_i(x, c) = [-(x_i - b_i)^2 + w] \Pr(i \text{ wins}) + [-(x_j - b_i)^2] \Pr(j \text{ wins}).$$

. The candidates' ideal platforms are $b_L = -b$ and $b_R = b$.

- Each activist i payoff is:

$$u_i(x, c) = -(x_i - b_i)^2 \Pr(i \text{ wins}) - (x_j - b_i)^2 \Pr(j \text{ wins}) - c_i^g .$$

- Activists' ideal platforms are $b_L = -\bar{b}$ and $b_R = \bar{b}$.
- $g > 1$ is the activists' marginal rate of substitution between ideological loss and contribution cost.
- $\epsilon_c \equiv c\frac{k''}{k'} = g - 1$ is elasticity of marginal cost of "mobilization."
- Mobilization plays a "persuasive role."
- The payoff of a median voter with ideal point m is

$$u_m(x, c) = \begin{cases} -(x_L - m)^2 + c_L - c_R & \text{if } L \text{ wins} \\ -(x_R - m)^2 + c_R - c_L & \text{if } R \text{ wins.} \end{cases}$$

- The equilibrium concept is pure strategy symmetric PBE, where $x_L = -x$, $x_R = x$, $c_L = c_R = c$.

Results

Proposition The Downsian election with aggregate uncertainty and activists has a unique symmetric pure strategy equilibrium. Platforms are less extreme than in the election without activists.

. By moving its platform x_i closer to her ideal point b_i and away from the expected median $\mu = 0$, candidate i increases her payoff if winning the election, but increases risk of losing the election.

. In the equilibrium without activists, platform x_i equalizes the marginal ideological benefit with the marginal risk of losing.

. Now consider activists. Their payoff is concave in the distance between implemented policy and ideal policy.

. By extremizing platform x_i, candidate i winds up exciting opposing activists more than her own supporters.

Proposition Mobilization c increases in equilibrium as activists become more extreme ($\bar{b}$ increases), and as elasticity of the marginal cost of mobilization ε increases.

Proposition For $\epsilon_c < 1$, as activists polarize ($\bar{b}$ increases), equilibrium platforms become less polarized (x decreases). Platform divergence x increases in activists extremism $\bar{b}$ if $\epsilon_c > 1$. When $\epsilon_c = 1$, platforms x are independent of activist ideology $\bar{b}$.

. If $0 \leq \epsilon_c < 1$, then marginal cost of mobilization is concave.

. More extreme activists increase contributions faster in response to a less moderate opposite platform.

. Each candidate's best response is to moderate platforms.

. Conversely, if $\epsilon_c > 1$, then marginal cost of mobilization is convex, and activist extremism leads to platform divergence.

Informative activism

. Voters do not observe the platforms of candidates precisely.

. Activism provides direct information about candidates platforms.

. Given platform x_i of candidate i, median voter observes
$\hat{x}_i = x_i + \varepsilon_i$.

. The noise ε_i is such that $E(\varepsilon_i) = 0$ and $Var(\varepsilon_i) = f(c_i)$.

. Activism informativeness s.t. $f' < 0$, $f'' > 0$, $f''' < 0$, $f(0) = 0$.

. Let the elasticity of marginal variance be $\epsilon_f = -c\frac{f''}{f'}$.

. ϵ_f is the efficiency of activism for the marginal noise reduction in the observed platform $\hat{x}_i$.

. The payoff of a median voter with ideal point m for electing i is
$u_m(\hat{x}, c; i) = -E[(x_i - m)^2 | \hat{x}_i]$.

Proposition For $2\epsilon_f < 1 - \epsilon_c$, as activists polarize ($\bar{b}$ increases), equilibrium platforms become less polarized (x decreases).

. The result not only requires that marginal cost elasticity $\epsilon_c < 1$.

. It is also needed that the marginal variance elasticity ϵ_f be small.

. For either activist $i = L, R$, the marginal benefit of contribution c_i is more complicated than before.

. Relationship between contribution c_i and ideological loss $-E[(x_i - m)^2|\hat{x}_i]$ is through the reduction of variance of $\hat{x}_i$.

. Because the median voter is risk averse, her payoff $u_m(\hat{x}, c; i)$ for electing i decreases in $Var(\varepsilon_i) = f(c_i)$.

Summary

. I have presented a model in which lobbies make campaign contributions conditional on support for their priorities.

. Impressionable voters more likely vote for the candidate with greater campaign contributions.

. In equilibrium, platforms maximize a weighted sum of the lobbies and informed voters payoff.

. Instead, activists are second-movers: they mobilize and choose effort in response to candidates' platforms.

. In elections with aggregate uncertainty, I have shown that ideologically opposed activists lead to more moderate platforms.

. As activists polarize, platforms may diverge less or more.

Next Lecture

. I show that voters should not bother voting in large elections.

. The probability that one vote changes the outcome is negligible.

. However, it may be that voters get a direct benefit from voting, from fulfilling civic duty or for expressing own opinion.

. Further, I present a group mobilization model in which voters follow a small set of leaders.

. Leaders exert high mobilization effort, leading to high turnout.

. I present a model of ethical voting rules: each candidate's supporter votes if her own cost is not too high.

. If obeyed by all supporters, such rules maximize their welfare.