

Special Interests

Political Economics: Week 2

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Heterogeneous Knowledge

- We assumed that all voters are perfectly informed of policy proposals.
- This assumption is not realistic, and relaxing it yields new predictions.

Timeline:

- 1 Each voter believes the parties will propose \bar{q}^A and \bar{q}^B .
- 2 The parties simultaneously choose q^A and q^B .
- 3 A fraction θ_j of voters in group j observe the policy proposals.
The remainder $1 - \theta_j$ retain their original beliefs.
- 4 The election is held, following the probabilistic-voting model.

Probabilistic Voting

- Let $\delta \sim F(\delta)$ and independently $\sigma_i \sim U\left[-\frac{1}{2\phi_j}, \frac{1}{2\phi_j}\right]$.
- Given δ , the fraction of group j that votes for A is

$$\begin{aligned} \frac{1}{2} + \phi_j \theta_j \left[W(q^A; \alpha_j) - W(q^B; \alpha_j) \right] \\ + \phi_j (1 - \theta_j) \left[W(\bar{q}^A; \alpha_j) - W(\bar{q}^B; \alpha_j) \right] - \phi_j \delta, \end{aligned}$$

and candidate A 's share of the vote is

$$\begin{aligned} \pi_A(\delta) = \frac{1}{2} + \sum_{j=1}^J \lambda_j \phi_j \theta_j \left[W(q^A; \alpha_j) - W(q^B; \alpha_j) \right] \\ + \sum_{j=1}^J \lambda_j \phi_j (1 - \theta_j) \left[W(\bar{q}^A; \alpha_j) - W(\bar{q}^B; \alpha_j) \right] - \sum_{j=1}^J \lambda_j \phi_j \delta. \end{aligned}$$

Knowledge Is Power

- Office-seeking candidates choose

$$q^* = \arg \max_q \sum_{j=1}^J \lambda_j \phi_j \theta_j W(q; \alpha_j).$$

- Again a weighted utilitarian welfare function

⇒ This is the fundamental implication of a uniform distribution of σ_i .

- Voters matter in proportion to their probability of being informed.
- Who is the *pivotal voter*?
 - 1 An *informed voter*, so he can base his choice on actual policy proposals.
 - 2 A *swing voter*, so he does, rather than being swayed by ideology.

Rational Expectations

- Everyone anticipates $\bar{q}^P = q^P$ with perfect foresight.
- A politician has no incentive to deviate from the expected proposal.
- Suppose he made a proposal with greater appeal for the uninformed:
 - ① The uninformed would not notice, so their support would not increase.
 - ② The informed would notice, so their support would decrease.
- The uninformed understand they are losing out, but this does not help them.

Robustness

- ① The uninformed could receive a noisy signal of q^P .
 - ▶ There is a pure-strategy equilibrium with both parties choosing q^* .
 - ▶ The uninformed expect $\bar{q}^P = q^*$ and would attribute any difference in their signal to noise—a sufficiently noisy signal is all we need.
 - ▶ However, the equilibrium is no longer unique.
- ② Conversely, voters could lack rational expectations.
 - ▶ The beliefs \bar{q}^P could be different from q^* and possibly stochastic.
 - ▶ The unique equilibrium remains q^* .
 - ▶ This is another gift from the uniform distribution.

Evidence on the Power of Informed Voters: India

- Besley and Burgess (2002) have a different model:
 - ▶ political agency problem without commitment to a platform;
 - ▶ information helps voter monitor politicians and dismiss them if they are not responsive to voters' needs.
- The prediction is the same: more information empowers voters.
- Policy outcome: food distribution and calamity relief systems in each state, 1958–1992 (yearly panel data).
- Information: newspaper circulation, aggregate and by language.
- IV: ownership structure of the newspapers.
- State governments are more responsive to falls in food production where newspaper circulation is greater. Local-language newspapers are more important than English and Hindi.
- Turnout and political competition also play a positive role.

Empirical Evidence on the Power of Informed Voters: USA

- Strömberg (2004) has a probabilistic-voting model.
 - ▶ Technically, voters assess past policies instead of binding platforms.
- Policy: allocation of New Deal relief funds across counties in each state, 1933–35 (pure cross-section).
- Information: share of households owning a radio.
- IV: ground conductivity and prevalence of woodland as proxies for the quality of AM reception.
- Governors allocated more relief funds to counties with more radio owners.
- Large economic significance:
 - ▶ $+1\%$ radio ownership $\Rightarrow +0.6\%$ spending per capita;
 - ▶ $+\sigma$ radio ownership $\Rightarrow +9\%$ spending per capita.
- A small part of this is indirectly due to a positive effect of radio ownership on voter turnout.

Information Affiliation with a Party

- The density ϕ_j of voters affected by a policy change is necessarily the same for both parties. Instead, heterogeneous information varies by party.
- Partisan affiliates are more likely to know the policy proposal of their own party.

Timeline:

- 1 Each voter believes the parties will propose \bar{q}^A and \bar{q}^B .
- 2 The parties simultaneously choose q^A and q^B .
- 3 A voter in group j observes the policy proposal of either party with independent probability θ_j^A and θ_j^B . He retains the original beliefs for any unobserved proposal.
- 4 The election is held, following the probabilistic-voting model.

Strategic Extremism

- Office-seeking candidates choose

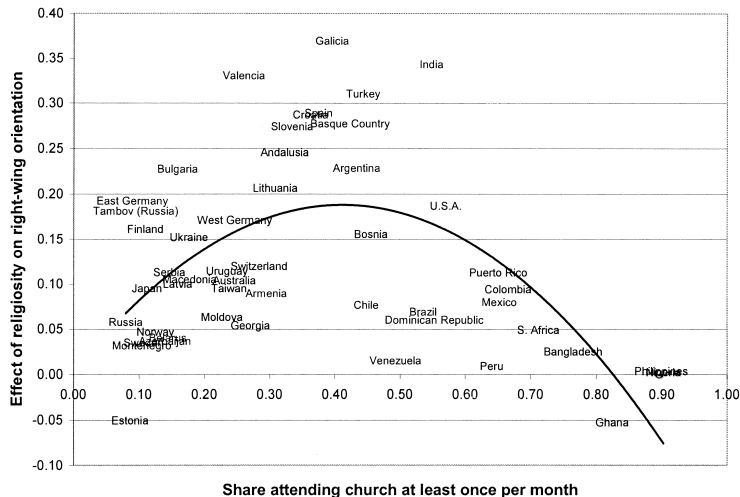
$$q^P = \arg \max_q \sum_{j=1}^J \lambda_j \phi_j \theta_j^P W(q; \alpha_j).$$

- Different candidates choose different proposals because each is playing to his own audience.
- Glaeser, Ponzetto, and Shapiro (2005) have an equivalent model with a turnout decision providing the intensive margin.
 - ▶ A uniform cost of voting replaces the uniform idiosyncratic bias.
- Affiliation can be made endogenous: people follow the party they expect to prefer, and the expectation is self-fulfilling.
- Social organizations are another source of heterogeneous knowledge.

Religion and Politics: Evidence on Strategic Extremism

- Glaeser, Ponzetto, and Shapiro (2005) focus on the link between churches and right-wing candidates.
- Assumption: churches convey information on the right-wing party.
- Prediction: non-monotonic relationship between church membership and the political relevance of religion, with a peak slightly below 50%.
 - ▶ Too few church members do not matter much even for the right.
 - ▶ Too many church members are very important for the left too.
- Data: survey measures of political orientation and religiosity.
- The relationship holds across countries and across U.S. states.
- Analogous argument for unionization, weaker evidence:
 - ▶ Trade unions convey information on the left-wing party.
 - ▶ The political relevance of class rises with unionization.
 - ▶ Only Scandinavia has union density significantly above 50%.

The Political Role of Religion Across Countries



Special Interests

- Knowledge can differ across voters not only by party but also by issue.
- Suppose that q is an N -dimensional policy vector
- A voter in group j observes the proposal q_n^P of party P for issue n with independent probability $\theta_{n,j}^P$.
- Assume that indirect utility is additively separable across issues:

$$W(q; \alpha_j) = W_0(\alpha_j) + \sum_{n=1}^N W_n(q_n; \alpha_j).$$

- Office-seeking candidates choose:

$$q_n^P = \arg \max_{q_n} \sum_{j=1}^J \lambda_j \phi_j \theta_{n,j}^P W_n(q_n; \alpha_j) \text{ for all } n.$$

- Realistically, special-interest groups only influence policy concerning their respective special interest.

Local Public Goods with Asymmetric Information

- Indirect utility for a member of group j :

$$W(g; \alpha_j) = 1 - \sum_{i=1}^J \lambda_i g_i + H(g_j).$$

- Additively separable with

$$W_j(q_j; \alpha_j) = H(g_j) - \lambda_j g_j \text{ and } W_i(q_i; \alpha_j) = -\lambda_i g_i \text{ for all } i \neq j.$$

- The power of ideology is homogeneous across groups: $\phi_j = \bar{\phi}$.
- Information is symmetric across parties: $\theta_{i,j}^A = \theta_{i,j}^B$.
- Each group knows more about policy that affects it directly:

$$\theta_{j,j} = \Theta > \theta = \theta_{i,j} \text{ for all } i \neq j.$$

- Asymmetric knowledge could derive from local news market or social networks that connect group members.

Aggregate Policy Bias from Asymmetric Information

- Optimal policy with probabilistic voting

$$\max_{g_i} \sum_{j=1}^J \lambda_j \theta_{i,j} W_i(g_i; \alpha_j) = \max_{g_i} \left\{ H(g_i) - \left[(1 - \lambda_i) \frac{\theta}{\Theta} + \lambda_i \right] g_i \right\}$$

$$\Rightarrow H'(\hat{g}_i) - 1 = (1 - \lambda_i) \left(\frac{\theta}{\Theta} - 1 \right)$$

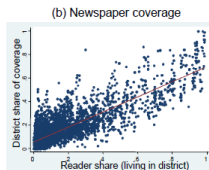
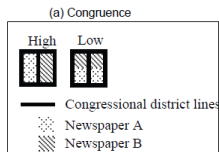
- Every local public good is over-provided.
- Greater political rents accrue to smaller groups.
- Pork-barrel politics and Weingast's (1979) Law of $1/N$.
- Bastiat (1848): "The State is the great fiction through which everyone endeavours to live at the expense of everyone else."
- Ponzetto (2009, wp) uses this model to explain the aggregate protectionist bias of trade policy.

Media Coverage and Political Accountability

Snyder and Strömberg (2008): newspaper coverage ...

- ① Increases voters' information about their representatives.
 - ▶ Survey responses from American National Election Studies, 1984–2004.
 - ② Makes representatives more likely to work for their constituents:
 - ▶ vote against the party line;
 - ▶ sit on a constituency-oriented committee;
 - ▶ appear as witnesses before congressional hearings.
 - ③ Leads to an increase in federal spending in the constituency.
 - ▶ Allocation of government expenditures around 10% of GDP.
- Identification: the “economic geography” of newspaper markets is distinct from the “political geography” of U.S. congressional districts.
 - A higher mismatch implies reduced media coverage.
 - ▶ Counts of articles mentioning representatives in the online edition of 161 newspapers covering 385 districts, 1991–2002.

Media Coverage and Political Accountability

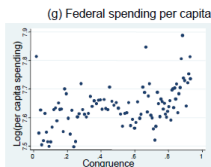
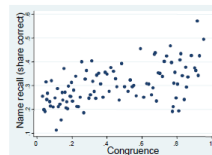


2.1 Congruence

(Circulation-weighted average reader share)

2.2 Newspapers

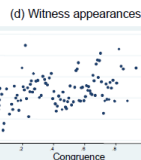
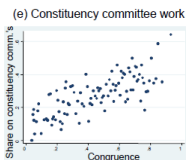
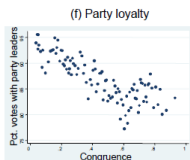
(c) Voter information



2.5 Policy

2.3 Voters

2.4 Politicians



Media Coverage and the Policy Agenda

Eisensee and Strömberg (2007): politicians respond selectively to newsworthy problems.

- Policy: U.S. government relief for victims of natural disasters abroad. 5,000 events, 1968–2002.
- Information: coverage measured by keyword searches using the Vanderbilt Television News Archive, which contains the evening news broadcasts of the three major U.S. networks since 1968 (plus CNN since 1995).
- IV: Crowding out of news about disasters.
 - ① Dates of the Olympics.
 - ② Time devoted to the top three news items of the day.
- Significant crowding out: a disaster occurring during the Olympics is 5% less likely to be in the news.
- Significant impact on policy: a disaster occurring during the Olympics is 6% less likely to receive relief.

Media Coverage and Voter Turnout – History

Gentzkow (2006): the introduction of television reduced voter turnout in the U.S. since World War II.

- Timing of TV introduction by city and county-level election turnout.
- Identification: World War II and then technical freeze by the FCC.
 - ▶ Exogenous timing, but not exogenous ordering.
 - ▶ Focus on rural counties that did or did not pick up TV signals from a neighbouring big city.
- TV accounts for half the fall in turnout for state and local elections.
- Smaller and insignificant impact on presidential-year turnout.
- Evidence that television crowded out political information provided by newspapers and radio.
 - ▶ Individual political knowledge surveyed by the American National Election Study, 1952.
 - ▶ Newspaper circulation by state by year.

Media Coverage and Voter Turnout – Today

Oberholzer-Gee and Waldfogel (2009): Spanish-language local TV news increases Hispanic turnout by over 4%.

- Panel data 1994–2000 on the number of TV stations offering local news in Spanish by U.S. metro area.
- Spanish-language news have no effect on the turnout of non-Hispanic voters, but increase Hispanic turnout by a fifth.
- Survey data support a direct link between consumption of Spanish-language news and turnout.

Gerber, Karlan, and Bergan (2009) ran a field experiment, randomly assigning voters in Virginia to receive a subscription to the *Washington Post*, the *Washington Times*, or neither.

- They found some evidence that either newspaper treatment increased turnout, but the results are weak.

Media Bias and Voting

Della Vigna and Kaplan (2007): conservative media help conservative politicians.

- Outcome: change in the Republican vote share in U.S. presidential elections between 1996 and 2000.
- Information: town-level availability of Fox News on cable television.
- Significant but small impact: entry of Fox News yields +0.4–0.7% Republican vote share.
- Large impact on the audience: 3–28% of Fox News viewers were induced to vote Republican.
 - ▶ The wide range is due to imprecise measurement of the audience.
- The effect seems to be coming from increased turnout.

Government Capture of the Media

Besley and Prat (2006): the media as a check on the government.

- N firms have a story whose sale generates revenue R , split equally among the firms that divulge it.
- Suppressing the story has value V for the government
- Each firm can be bought for $B \geq R$, but not less: a unilateral deviation from equilibrium in which the story is suppressed gives a firm an exclusive.
- Suppression is an equilibrium outcome if and only if $N \leq V/B$.
- Competition (large N) among media outlets can solve the problem of government capture and hold politicians accountable to the citizens.

Consumer Preferences and Media Bias

Mullainathan and Shleifer (2005): consumers like confirmation of their own biases.

- A media market with homogeneous consumers is uniformly biased.
 - ▶ Competition reduces prices but not bias.
- With heterogeneous consumers, the standard logic of Hotelling competition with price-setting and quadratic transport costs obtains:
 - 1 A monopolist stands in the middle.
 - 2 Duopolists move to the extremes.
 - ▶ The model gets intractable for $n > 2$.
- More information is obtained by reading two highly biased sources than as single moderately biased one.

Consumer Priors and Media Bias

Gentzkow and Shapiro (2006): Bayesian consumers rationally believe that information is more likely to be trustworthy if it confirms their priors.

- Media firms want to develop a reputation for accurate reporting.
- If the quality of the information provided is difficult to assess, firms distort information to make it conform with their audience's priors.
- Bias is lower when information is easier to observe ex post:
 - ▶ domestic compared to foreign reporting
 - ▶ facts compared to policy analysis.
- Competition can decrease bias, because each firm fears that competitors will credibly expose it as biased.

Sources of Media Bias

Gentzkow and Shapiro (2010): U.S. newspaper bias is demand-driven.

- A novel measure of the slant of individual local newspapers.
- Zipcode-level data on newspaper circulation and individual contributions to political parties.
- Predict the profit-maximizing slant of a monopolist in a taste-based consumption model.
- Actual slant is close to the theoretical prediction.
 - ▶ The estimation takes into account that observed circulation is endogenous.
- Reverse causality? Instrument for political ideology using religiosity.
- A newspaper's owner does not seem to affect its slant.
 - ▶ Comparison of newspapers with the same owner.
 - ▶ Proxy ownership ideology by patterns of donations to political parties.

Measuring Media Bias

- Gentzkow and Shapiro (2010) have a powerful procedure that relies on a huge amount of data, automated computer routines, and research-assistant labour.
- ➊ Examine all phrases in the 2005 *Congressional Record* and identify those that are used much more frequently by members of one party.
Republican: “death tax”, “tax relief”, “war on terror”.
Democratic: “estate tax”, “tax break”, “war in Iraq”.
- ➋ Examine the text of all news articles published in each newspaper and compute the degree to which their usage of such phrases resembles the congressional speeches of either party.

Policy for Sale

- A subset \mathcal{L} of groups have succeeded in solving the free-rider problem and have formed lobbies that represent their members.
- The lobbies attempt to buy favourable policy by offering money to politicians.
- Letting c_l be the amount paid by each member, lobby l 's objective is

$$V_l(q, c_l) = W(q; \alpha_l) - c_l.$$

- Assume that the policy-maker has the reduced form objective function

$$V_0(q, c) = \eta \sum_{j=1}^J \lambda_j W(q; \alpha_j) + (1 - \eta) \sum_{l \in \mathcal{L}} \lambda_l c_l.$$

- $\eta \in [0, 1]$ is an exogenous parameter measuring the policy-maker's benevolence.

The General Result

- Contributions enter linearly in every player's objective function.
- Thus any efficient bargaining process yields the equilibrium policy

$$\hat{q} = \arg \max_q \left\{ \eta \sum_{j=1}^J \lambda_j W(q; \alpha_j) + (1 - \eta) \sum_{l \in \mathcal{L}} \lambda_l W(q; \alpha_l) \right\}.$$

- Letting L_j be an indicator variable that takes a value of 1 if group j is represented by a lobby and zero otherwise:

$$\hat{q} = \arg \max_q \left\{ \sum_{j=1}^J \lambda_j [\eta + (1 - \eta) L_j] W(q; \alpha_j) \right\}.$$

- A weighted social welfare function as in probabilistic-voting models.
 - ▶ Linearity in money plays the same role as the uniform ideological bias.

Local Public Goods for Sale

- Indirect utility is $W(g; \alpha_j) = 1 - \sum_{i=1}^J \lambda_i g_i + H(g_j)$.
- Let $\lambda_{\mathcal{L}}$ denote the fraction of the population represented by lobbies.
- Equilibrium policy is

$$\hat{g} = \arg \max_g \sum_{j=1}^J \lambda_j \{ [\eta + (1 - \eta) L_j] H(g_j) - [\eta + (1 - \eta) \lambda_{\mathcal{L}}] g_j \}.$$

$$\Rightarrow H'(\hat{g}_j) = \frac{\eta + (1 - \eta) \lambda_{\mathcal{L}}}{\eta + (1 - \eta) L_j}.$$

- Over-provision of public goods that benefit their groups represented by lobbies; under-provision of public goods that do not.
- Utilitarian optimum if and only if $\lambda_{\mathcal{L}} \in \{0, 1\}$.
- No aggregate bias: a lobby matters for all issues or none.

Group Size and Lobbying Power

- Group size λ_j affects equilibrium policy through its effect on $\lambda_{\mathcal{L}}$.
- The fraction of people outside group j that belong to a lobby is

$$L_{-j} = \frac{\lambda_{\mathcal{L}} - \lambda_j L_j}{1 - \lambda_j} .$$

- Equilibrium policy satisfies

$$H'(\hat{g}_j) - 1 = (1 - \lambda_j) \left[\frac{\eta + (1 - \eta) L_{-j}}{\eta + (1 - \eta) L_j} - 1 \right] .$$

- Consider a change in λ_j that does not affect the relative sizes of the other groups.
- Lobbies gain when becoming smaller.
- Unrepresented groups gain when becoming larger.

Campaign Spending and Voting

- A microfoundation for the politician's trade-off between welfare maximization and contributions.
- Probabilistic voting with a common popularity shock

$$\delta = \tilde{\delta} + h(c_B - c_A), \text{ with } \tilde{\delta} \sim U\left[-\frac{1}{2f}, \frac{1}{2f}\right].$$

- The *uniform distribution* is again crucial; the mean need not be zero.
- Also crucial is the *linear* effect of contributions on popularity.
- c_P denotes the total campaign contributions candidate P receives.
- $h > 0$ measures the effectiveness of campaign spending in altering relative popularity.
 - ▶ Effectiveness can be heterogeneous across voters: only the average effectiveness would matter.
 - ▶ E.g., effectiveness could be restricted to uninformed voters.

The Electoral Motive for Campaign Contributions

- 1 The parties choose q^A and q^B .
 - 2 Each lobby observes the platforms and chooses how much to contribute to its preferred party to help it win the election.
 - 3 The election is held, with probabilistic voting.
- For lobby j to make a contribution c_j , each member must incur a cost

$$\frac{1}{\lambda_j \gamma_j} \left(\frac{f h^2}{2} \right) c_j^2$$

- $\gamma_j > 0$ summarizes each lobby's effectiveness at raising funds and transferring them to politicians.
 - ▶ The term in parentheses simplifies the algebra without loss of generality.
- The *quadratic* functional form is restrictive and crucial.

Probabilistic Voting with Campaign Contributions

- After the parties choose q^A and q^B , the voters heterogeneously observe them. The impact of perceived policy platforms on voting by group j is measured by

$$\Delta_j(q^A, q^B) = \theta_j^A W(q^A; \alpha_j) - \theta_j^B W(q^B; \alpha_j) + (1 - \theta_j^A) W(\bar{q}^A; \alpha_j) - (1 - \theta_j^B) W(\bar{q}^B; \alpha_j).$$

- The fraction of group j that votes for party A is

$$\pi_A(\delta) = \frac{1}{2} + \sum_{j=1}^J \lambda_j \phi_j \Delta_j(q^A, q^B) - \sum_{j=1}^J \lambda_j \phi_j \delta.$$

- The probability that A wins the election is

$$p_A = \frac{1}{2} + f \sum_{j=1}^J \lambda_j \frac{\phi_j}{\bar{\phi}} \Delta_j(q^A, q^B) + fh(c_A - c_B).$$

Optimal Campaign Contributions

- Each lobby l can donate to either party, and its goal is maximizing welfare per member

$$p_A W(q^A; \alpha_l) + (1 - p_A) W(q^B; \alpha_l) - \frac{1}{\lambda_l \gamma_l} \left(\frac{f h^2}{2} \right) (c_l^A + c_l^B)^2.$$

- The electoral impact of contributions is

$$\frac{\partial p_A}{\partial c_A} = -\frac{\partial p_A}{\partial c_B} = f h.$$

- In equilibrium, the lobby donates to no more than one party:

$$c_l^A = 0 \text{ if } W(q^A; \alpha_l) \leq W(q^B; \alpha_l)$$

and

$$c_l^B = 0 \text{ if } W(q^A; \alpha_l) \geq W(q^B; \alpha_l).$$

Optimal Policy with Campaign Contributions

- Adding across all lobbies, optimal contributions satisfy

$$c_A - c_B = \frac{1}{h} \sum_{l \in \mathcal{L}} \lambda_l \gamma_l \left[W(q^A; \alpha_l) - W(q^B; \alpha_l) \right].$$

- Let $\gamma_j = 0$ for all $j \notin \mathcal{L}$ capture the inability of some groups to lobby.
- The equilibrium policy proposal of each party $P \in \{A, B\}$ is

$$\hat{q}^P = \arg \max_{q^P} \sum_{j=1}^J \lambda_j \left(\frac{\phi_j}{\bar{\phi}} \theta_j^P + \gamma_j \right) W(q^P; \alpha_j).$$

- A weighted social welfare function with separate weights for voters and lobbyists.

Local Public Goods with Multiple Sources of Influence

- Indirect utility is additively separable with $W_j(q_j; \alpha_j) = H(g_j) - \lambda_j g_j$ and $W_i(q_i; \alpha_j) = -\lambda_i g_i$ for all $i \neq j$.
- Group j is characterized by:
 - its size λ_j ;
 - its relative responsiveness to policy: $\hat{\phi}_j = \frac{\phi_j}{\phi} \geq 0$;
 - its members' information about party P 's proposal on issue i : $\theta_{i,j}^P$;
 - its effectiveness at lobbying: $\gamma_j \geq 0$.
- Party P offers public good i according to

$$\hat{g}_i^P = \arg \max_g \left\{ \lambda_i \left(\hat{\phi}_i \theta_{i,i}^P + \gamma_i \right) H(g_i) - \lambda_i g_i \sum_{j=1}^J \lambda_j \left(\hat{\phi}_j \theta_{i,j}^P + \gamma_j \right) \right\}$$

- Each group j has two sources of power:
 - members' propensity to vote on the basis of policy proposals: $\hat{\phi}_j \theta_{i,j}^P$;
 - members' ability to support policy proposals with contributions: γ_j .

Local Public Goods and Relative Influence

- A public is over-provided if and only if its beneficiaries have greater political power than the average citizen:

$$H'(\hat{g}_i^P) = \frac{\sum_{j=1}^J \lambda_j (\hat{\phi}_j \theta_{i,j}^P + \gamma_j)}{\hat{\phi}_i \theta_{i,i}^P + \gamma_i}.$$

- Identically, if members of group i have greater political power than the average person outside the group:

$$H'(\hat{g}_i^P) - 1 = (1 - \lambda_i) \left[\frac{\sum_{j \neq i} \frac{\lambda_j}{1 - \lambda_i} (\hat{\phi}_j \theta_{i,j}^P + \gamma_j)}{\hat{\phi}_i \theta_{i,i}^P + \gamma_i} - 1 \right].$$

- Departures from the utilitarian optimum are driven by heterogeneity.
- Group size acts as a dampener of distortions, both favourable and unfavourable.

Common Agency and Menu Auctions

- The most common assumption about lobbying is that it takes the form of a menu auction:
 - 1 All lobbies simultaneously and non-cooperatively submit contribution schedules $c_l(q)$, which they can credibly commit to.
 - 2 The policy-maker chooses policy taking these offers into account.
- In the pure lobbying model, this is simply the specification of a jointly efficient bargaining game.
 - ▶ Assume that contributions must be continuously differentiable.
 - ▶ Then the equilibrium is “locally truthful” and thus jointly efficient.
- With a reasonable further restriction, the specification also pins down the equilibrium contribution of each lobby.
 - ▶ Restriction to “globally truthful” schedules.
 - ▶ Each lobby is indifferent between the equilibrium and the outcome that would obtain if it unilaterally stopped lobbying.

Campaign Timing

- What if lobbies submit their offers to politicians before they choose platforms? “Influence motive” instead of “Electoral motive”.
- The common-agency game remains well defined with contributions that are pure transfers.
 - ▶ The assumption of a quadratic cost of lobbying is no longer needed.
- The equilibrium still satisfies the necessary conditions for maximizing a weighted social welfare function, but the weights depend on each party's endogenous probability of winning.
- There can be multiple equilibria:
 - ▶ all lobbies offer more contributions to a party if they consider it more likely to win;
 - ▶ a party is more likely to win if lobbies offer more contributions to it.
- Explicit computation of asymmetric equilibria is usually intractable.

Empirical Evidence on Campaign Spending

Levitt (1994): campaign spending has an extremely small and insignificant impact on election outcomes in the U.S. House of Representatives.

- Endogeneity problem: “good” candidates should get more contributions and more votes.
- Control for candidate fixed effects by only looking at races with the same two contenders.

Another endogeneity problem: where are campaign funds coming from?

- Lobbies' contributions increase campaign spending and distort policy platforms.
- Campaign spending could be effective at buying back the votes a candidate loses by favouring lobbies.

Empirical Evidence on Campaign Contributions

Ansola-behere, de Figueiredo, and Snyder (2003): in the U.S., campaign contributions do not buy influence.

- Campaign funds come overwhelmingly in small amounts, and mostly from individuals rather than Political Action Committees. 40% of Fortune 500 firms do not have a PAC.
- Campaign funds (donations and expenditures) are a very small fraction of government spending, let alone GDP.
- Studies of congressional voting behaviour and PAC contributions do not generally find strong links.
- Political contributions as a form of consumption.

This is evidence against the influence motive, but not the electoral motive.

- If $\theta_{ij}^A = \theta_{ij}^B$ the model predicts no contributions in equilibrium, but significant power for lobbies that would make contributions off the equilibrium path.

Political Economy of the U.S. Mortgage Default Crisis

- Mian, Sufi, and Trebbi (2010) study congressional votes on two bail-outs in 2008:
 - ① American Housing Rescue and Foreclosure Prevention Act, insuring renegotiated mortgages and bailing out Freddie Mac and Fannie Mae;
 - ② Emergency Economic Stabilization Act, bailing out the banks.
- ① Constituents matter: an increase in the mortgage-default rate in the district makes a representative more likely to vote for AHRFPA.
 - ▶ The change, not the level, and only mortgage defaults matter.
 - ▶ Stronger effect in more competitive districts.
- ② Party affiliates matter: representatives respond more to the default rate of their own supporters within the district.
- ③ Lobbies matter: campaign contributions from the financial industry predicts voting for EESA.
 - ▶ *Electoral* motive: lobbies do not matter for retiring politicians.
- ④ Ideology matters: conservatism predicts voting against both bills.

Strategic Information Transmission

- Lobbying means conveying information to politicians.
- The special-interest group is more informed than the policy-maker.
- Information is relevant for the policy choice, but the objectives of the lobby and the politician are not aligned.
- This is a general game-theoretic problem, with three varieties:
 - ① *Cheap talk*: communication is costless and information unverifiable.
 - ② *Persuasion games*: communication is costless but information is verifiable.
 - ③ *Costly signalling*: communication is costly.

Cheap Talk

- The policy-maker chooses policy $p \in \mathbb{R}$.
- The lobbyist knows the state of the world $\theta \sim U [\underline{\theta}, \bar{\theta}]$.
- Policy-maker's objective:

$$G(p, \theta) = -(p - \theta)^2.$$

- Lobbyist's objective:

$$U(p, \theta) = -(p - \theta - \delta)^2,$$

with $\delta > 0$ depicting the bias of the special-interest group.

- The lobbyist can costlessly send any message $m(\theta)$.
- The policy-maker receives the message and enacts $p(m)$.

Information Revelation

- 1 Full information revelation is impossible.

In a fully revealing equilibrium the lobby reports $m = \theta$. Then the policy-maker acts optimally by choosing $p = m$. But this makes it optimal for the lobby to report $m = \theta + \delta$, a contradiction.

- 2 There always exists a “babbling” equilibrium with no information transmission.

The policy-maker expects $m(\theta) = b$ for all θ ; moreover, he considers any other message a mistake uncorrelated with θ , so he chooses $p(m) = \mathbb{E}p$ for all m . Then $m(\theta) = b$ is a best response for the lobby; $m \neq b$ remains off the equilibrium path, so the policy-makers beliefs are consistent.

- 3 Every equilibrium can be represented as a partition equilibrium.

Partition Equilibrium

- In equilibrium, the continuous state space $[\underline{\theta}, \bar{\theta}]$ is partitioned into a finite number n of intervals. The lobbyist sends one of n signals and the politician takes one of n actions:

$$\theta \in [\theta_{i-1}, \theta_i] \Rightarrow m_i \Rightarrow p_i \text{ for all } i = 1, \dots, n,$$

with $\theta_0 = \underline{\theta}$ and $\theta_n = \bar{\theta}$.

- Lobby's equilibrium condition:

$$U(p_i, \theta_i) = U(p_{i+1}, \theta_i) \text{ for all } i = 1, \dots, n-1.$$

- Policymaker's equilibrium condition:

$$p_i = \arg \max \mathbb{E} [G(p, \theta) | m_i] \text{ for all } i = 1, \dots, n.$$

Equilibrium Characterization

- Lobby's equilibrium condition:

$$(p_i - \theta_i - \delta)^2 = (p_{i+1} - \theta_i - \delta)^2 \text{ for all } i = 1, \dots, n-1,$$

- Policymaker's equilibrium condition:

$$p_i = \frac{\theta_i + \theta_{i-1}}{2} \text{ for all } i = 1, \dots, n.$$

- Given n , the equilibrium is described by the second-order linear difference equation

$$\frac{\theta_i - \theta_{i-1}}{2} + \delta = \frac{\theta_{i+1} - \theta_i}{2} - \delta \text{ for all } i = 1, \dots, n-1,$$

with the boundary conditions $\theta_0 = \underline{\theta}$ and $\theta_n = \bar{\theta}$.

Coarseness of the Equilibrium Partition

- The width of the intervals satisfies the first-order linear difference equation

$$\Delta_{i+1} = \Delta_i + 4\delta \text{ for all } i = 1, \dots, n-1,$$

with the constraint

$$\sum_{i=1}^n \Delta_i = \bar{\theta} - \underline{\theta}.$$

- The solution is

$$\Delta_i = \Delta_1 + 4\delta (i-1) \text{ for all } i = 1, \dots, n,$$

and

$$\Delta_1 = \frac{\bar{\theta} - \underline{\theta}}{n} - 2\delta (n-1).$$

- Thus an equilibrium exists for any $n \geq 1$ such that

$$n(n-1) < \frac{\bar{\theta} - \underline{\theta}}{2\delta}.$$

Pareto Dominance

- For all $\delta < \frac{\bar{\theta} - \theta}{4}$ the game has multiple equilibria.
- In equilibrium the policy-maker makes sure that $\mathbb{E}(p - \theta) = 0$, which implies that

$$\mathbb{E} \left[- (p - \theta - \delta)^2 \right] = \mathbb{E} \left[- (p - \theta)^2 \right] - \delta^2.$$

- Thus the two agents agree ex ante on the welfare ranking of possible equilibria.
- It can be shown that, according to intuition, both strictly prefer a more informative partition.