

Political economics II
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Lecture 1

Background

Part I – Electoral competition and voter behavior

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General introduction

1. Scope of course(s)

Basic goal(s)

Pol II: introduce basic methods of political economics
theoretical and empirical building blocks; applications
(Pol III: present selected topics on the research frontier)

Political economics?

research program in last, say, 15 years

Overall question?

how explain observed variation in
economic policy over time, place, and institutions?

Theoretical approach?

three separate traditions (cf. background reading)

(i) theory of macroeconomic policy

rationality, micro-foundations, but naive politics

(ii) public choice

agency, constitutions, interest groups, but naive methods

(iii) rational choice (political science)

collective choice procedures, but naive approach to policy

Gradual improvements on theoretical front

combine best of three traditions

Empirical approach?

early work suffered from two problems

(i) tests of theory not very precise

(ii) lack of institutional detail

Gradual improvements on empirical front

more solid theoretical foundations

concern with identifying causal effects: micro-econometrics

appreciation of findings in empirical political science

2. Outline of course

I. Electoral competition and voter behavior (3 lectures)

II. Partisan politics and political agency (3 lectures)

III. Political institutions and economic policy (2 lectures)

readings

exam

3-4 problem sets (Olle Folke & Jan Klingelhöfer)

I. Electoral competition and voter behavior

Aims of Lecture 1

introduce alternative work-horse models of policy choice
in two-party (candidate) electoral competition
illustrate political forces that influence policy

Two common policy examples – different settings

use same examples in other lectures of Parts I and II, as well
but vary assumptions about politicians'

(i) objectives, (ii) commitment capacity, (iii) types

Agenda

- A. Two fiscal policy models – Size and composition of spending
- B. Downsian electoral competition – Median voters
- C. Basic probabilistic voting model – Swing voters
- D. Probabilistic voting and lobbying – Interest groups

A. Two fiscal policy models – Size and composition of spending

1. Size of government

Continuum of voters

population size (mass) of N

Type J consumer/voter

quasi-linear preferences, H concave

$$w^J = c^J + H(g)$$

$g^J = g$, same, per-capita, provision to everybody

$$c^J = (1 - \tau)y^J$$

and common income tax; i.e., *non-targeted* policy

Income distribution

only source of preference heterogeneity $y^J \sim F(\cdot)$ s.t

$$E(y^J) = y, \quad F(y^M) = \frac{1}{2}, \quad y^M \leq y$$

F discrete: \mathcal{J} groups $J = 1, \dots, \mathcal{J}$, where $y^1 < \dots < y^{\mathcal{J}}$

population shares: $\frac{N^J}{N} = \alpha^J < \frac{1}{2}$, $\sum_J \alpha^J = 1$

at times, specialize to $\mathcal{J} = 3$, with $y^P < y^M < y^R$

Government budget

$$\tau \sum_J \alpha^J y^J = \tau y = g$$

treat g as the, *one-dimensional*, policy (a scalar)

Policy preferences defined by relative income alone

$$W^J(g) = (y - g) \frac{y^J}{y} + H(g) \quad (1)$$

by voter J optimum: $W_g^J(g) = 0$

$$g^J = H_g^{-1}\left(\frac{y^J}{y}\right) \equiv G\left(\frac{y^J}{y}\right)$$

G monotonically decreasing

preferences well-behaved

W^J concave (as H is) and single peaked in policy

W^J (and W_g^J) monotonic in “tax price” $\frac{y^J}{y}$ (single crossing holds)

\Rightarrow unique Condorcet winner exists $g^M = G\left(\frac{y^M}{y}\right)$

Example of general class of policy problems

one-dimensional, non-targeted policies give rise to similar
monotonic policy preferences (under the right conditions)

many such problems have been studied in political economics

Optimum for utilitarian SWF $\sum_J \alpha^J W^J(g) = W(g) = (y - g) + H(g)$

$$W_g(g) = H_g(g) - 1 = 0 \Rightarrow g^* = G(1)$$

2. Composition of government

\mathcal{J} groups

$$J = 1, \dots, \mathcal{J} \text{ with } \sum_J \alpha^J = 1$$

Group J members

no within-group, or across-group, heterogeneity $y^J = y$ all J

$$w^J = c^J + H(g^J)$$

g^J per-capita spending on group J , no spillovers

$(g^J) \equiv g$ *multi-dimensional* and *targeted* policy (a vector)

Interpretation

J defined by preferences, occupation, location,...

Consider utilitarian optimum

$$\max \sum_J \alpha^J w^J \text{ s t } \sum_J \alpha^J (g^J + c^J) = y \Rightarrow$$
$$H_g(g^*) - 1 = 0$$

could be implemented by decentralized spending and financing
each J internalizes full cost for g^J

Centralized government budget

$$g \text{ financed by common tax: } c^J = y - \tau, \quad \sum_J \alpha^J g^J = \tau$$

Policy preferences

$$w^J = y - \sum_I \alpha^I g^I + H(g^J) = W^J(g) \quad (2)$$

each J internalizes only share $\frac{N^J}{N} = \alpha^J$ of cost for g^J
preferences ill-behaved, do not satisfy monotonicity
 \Rightarrow no Condorcet winner exists

Example of general class of policy problems

most policies can be thought of as multi-dimensional and targeted
initially, such problems were considered very problematic
in political economics

B. Downsian electoral competition – Median voters

Standard maintained assumptions

- (i) two candidates (parties), $C = A, B$
- (ii) in plurality (winner takes all) election
- (iii) commit (simultaneously) to electoral platforms: g_A, g_B
- (iv) to maximize expected “ego rents”: $p_C R$, given

$$p_A = P(g_A, g_B) = \text{Prob}[\pi_A \geq \frac{1}{2} \mid g_A, g_B]$$
$$p_B = 1 - p_A ,$$

where π_A is A 's vote share (everybody votes)

1. Size of government

One-dimensional analog of many, many applications

highlights distribution of preferences, given F

Optimal voting behavior

voter i supports A if $W^J(g_A) > W^J(g_B)$; monotonicity \Rightarrow

$$P(g_A, g_B) = \begin{cases} 0 & \text{if } W^M(g_A) < W^M(g_B) \text{ as } \pi_A < \frac{1}{2} \\ \frac{1}{2} & \text{if } W^M(g_A) = W^M(g_B) \text{ as } \pi_A = \frac{1}{2} \\ 1 & \text{if } W^M(g_A) > W^M(g_B) \text{ as } \pi_A > \frac{1}{2} \end{cases} \quad (3)$$

note discontinuity of $P(g_A, g_B)$

for any g_A, g_B such that $W^M(g_A) = W^M(g_B)$

Unique Nash Equilibrium

competition has single rest point: $g_A = g_B = g^m = G\left(\frac{y^M}{y}\right)$

Positive implications (comparative statics)

larger government (in cross-sectional data)

if more inequality, as measured by $\frac{y^M}{y}$

growth of government (in time-series data)

if relative income of pivotal voter falls

number of testable predictions

Normative

majority wants higher spending than utilitarian planner

$$g^* = G(1) < G\left(\frac{y^M}{y}\right) = g^m$$

2. Composition of government

Non-existence of equilibrium

discontinuity of $p_A = P(g_A, g_B)$ is too severe

for any g_B , A can always find g_A that raises $P(g_A, g_B)$

without effective monotonicity in one dimension, can't

split electorate in half \Rightarrow cycling, Condorcet paradox

existence problem thought fatal in early social choice

C. Basic probabilistic voting model – Swing voters

Background

originally suggested as solution to non-existence problem
has gradually become useful work-horse “on its own merits”

1. General formulation

Idea

smooth out discontinuity in p_A
assume voter i has innate candidate/party preferences

Overall preferences of voter i in group J

$$w^{i,J} = W^J(g) + D_B \cdot (\sigma^{i,J} + \delta) \quad (4)$$

where $D_B = 1$ if B wins, 0 if A wins

Individual component

$\sigma^{i,J} \stackrel{\leq}{\geq} 0$ has *group-specific* distribution
uniform on $[-\frac{1}{2\phi^J}, \frac{1}{2\phi^J}]$, density ϕ^J

Aggregate (average) popularity component

$\delta \stackrel{\leq}{\geq} 0$ uniform on $[-\frac{1}{2\psi}, \frac{1}{2\psi}]$, density ψ

Timing

parties know $\{\phi^J\}$ and ψ , but not δ , when set g
 δ realized before election

Swing voter in group J

$$\sigma^J = W^J(g_A) - W^J(g_B) - \delta \tag{5}$$

Vote share of party A in group J

everybody with $\sigma^{i,J} \leq \sigma^J$ votes for A

$$\pi_A^J(g_A, g_B) = \phi^J \left(\sigma^J + \frac{1}{2\phi^J} \right) = \frac{1}{2} + \phi^J \sigma^J$$

depends on policy via identity of swing voter in (5)

gives aggregate vote share $\pi_A(g_A, g_B) = \sum_J \alpha^J \pi_A^J$

Probability of winning for A

$$P(g_A, g_B) = \text{Prob}_\delta[\pi_A \geq \frac{1}{2}] = \frac{1}{2} + \frac{\psi}{\phi} \left[\sum_J \alpha^J \phi^J (W^J(g_A) - W^J(g_B)) \right] \quad (6)$$

where $\phi \equiv \sum_J \alpha^J \phi^J$

note p_A now everywhere continuous (and concave) in g_A

Electoral competition

A, B commit to g_A, g_B to maximize $p_A R, (1 - p_A)R$
with p_A given by (6)

Equilibrium?

under the classical Downsian assumptions...

policy converges to unique Nash equilibrium: $g_A = g_B = g^p$

as both parties face same, concave decision problem

note that parties effectively maximize a “weighted SWF”

General result

independent of form and dimension of W^J

as long as concavity (and continuity) of P in g_A holds

2. Characteristics of equilibrium policy

a. Size of government

Properties

g^p towards bliss point of J with many swing voters (high $\alpha^J \phi^J$)
these groups have more political power

Formal analysis

g_A has to max $p_A R$, given g_B – by (1) and (6) to get FOC

$$H_g(g^p) \sum_J \alpha^J \phi^J = \frac{1}{y} \sum_J \alpha^J \phi^J y^J$$

which we can rewrite as

$$g^p = H_g^{-1}\left(\frac{\tilde{y}}{y}\right) = G\left(\frac{\tilde{y}}{y}\right) \quad (7)$$

where $\tilde{y} = \frac{\sum_J \alpha^J \phi^J y^J}{\phi}$ is “swing-voter weighted” income

Positive implications

g^p potentially very different than g^m

consider $\mathcal{J} = 3$: suppose $\phi^R > \phi > \phi^P$, such that $\tilde{y} > y$

then $g^p < g^* < g^M$

moreover, g^p falls if y^R up and y^M down, for constant y

inequality cuts g – powerful rich voters' stake rises

Normative implications

$g^p = g^*$, if $\phi^J = \phi$ all J ; parties maximize average utility

Methodological lesson

don't apply median-voter solution blindly

just because Condorcet winner exists

b. Composition of government

Properties

$g^{p,J}$ high (low) for J with many (few) swing voters

sharper, multi-dimensional instrument to please powerful groups

Formally

let g_A maximize $p_A R$, given g_B – (2) and (6) \Rightarrow FOC for each J

$$\alpha^J \phi^J H_g(g^{p,J}) - \alpha^J \sum_I \alpha^I \phi^I = 0$$

which we can rewrite as

$$H_g(g^{p,J}) - 1 = \frac{\phi - \phi^J}{\phi^J}$$

where RHS measures the deviation from social optimum

Implications

$g^{p,J} = g^*$ all J , only if ϕ^J same for all groups

otherwise $g^{p,J} \begin{matrix} \geq \\ \leq \end{matrix} g^*$ as $\phi^J \begin{matrix} \geq \\ \leq \end{matrix} \phi$

note, relative group size plays no role

politicians internalize costs of g^J imposed on all groups

Methodological lesson

probabilistic voting model can be used for multi-dimensional policy problems where no Condorcet winner exists

D. Probabilistic voting and lobbying – Interest groups

Background

many ways to model influence of organized interest groups
simple example in context of electoral competition

1. General formulation

Extend model in **C**

but set $\phi^J = \phi$ all J , so $g = g^*$ in absence of lobbying
also set $\alpha^J = \alpha$, to simplify algebra

Lobbies

group J “organized”, $O^J = 1$, or not, $O^J = 0$
organized lobbies seek to influence election outcome

$$C_C = \sum_J \alpha O^J C_C^J \quad (8)$$

total campaign contribution to candidate $C = A, B$ from all J

Timing

groups set per-capita contributions $\{C_C^J\}$ optimally
after $\{g_C\}$ announced, but before δ realized

Voter behavior

“average popularity” influenced by relative campaign spending

$$\delta = \tilde{\delta} + h(C_B - C_A)$$

where $\tilde{\delta}$ uniform with density ψ (as δ before)

\Rightarrow swing voter in J

$$\sigma^J = W^J(g_A) - W^J(g_B) - \tilde{\delta} + h(C_A - C_B) \quad (9)$$

Probability of winning

now becomes

$$p_A = \frac{1}{2} + \psi[\alpha \sum_J (W^J(g_A) - W^J(g_B)) + h(C_A - C_B)] \quad (10)$$

Optimal contributions for lobbies ?

max utility of average member

$$E[w^J] = p_A W^J(g_A) + (1 - p_A) W^J(g_B) - \frac{1}{2}[(C_A^J)^2 + (C_B^J)^2]$$

given (10), we get

$$\begin{aligned} C_A^J &= \text{Max} [0, \psi h \alpha (W^J(g_A) - W^J(g_B))] \\ C_B^J &= - \text{Min} [0, \psi h \alpha (W^J(g_A) - W^J(g_B))] \end{aligned} \quad (11)$$

i.e., group J contributes only to C with preferred platform

Optimal platforms for candidates ?

rewrite (10) using (8) and (11)

taking g_B as given, A maximizes

$$P(g_A, g_B) = \frac{1}{2} + \psi\alpha \left[\sum_J (1 + \gamma O^J) (W^J(g_A) - W^J(g_B)) \right] \quad (12)$$

where $\gamma = \psi\alpha h^2$

Properties of equilibrium

as B has symmetric problem, we get policy convergence on g^l

see right away that

$g^l = g^*$ if (i) $O^J = 0$ all J , or (ii) $O^J = 1$ (given $\alpha^J = \alpha$) all J
 $O^J = 1$ gives additional influence – prepared “pay for” $W^J(g)$

2. Characteristics of equilibrium policy

a. Size of government

Equilibrium properties

provision of g^l , by (1) and (12) $\frac{dp_A}{dg_A} = 0$ satisfies

$$g^l = H_g^{-1}\left(\frac{\hat{y}}{y}\right) = G\left(\frac{\hat{y}}{y}\right)$$

where $\hat{y} = \frac{\sum_J(1+O^J\gamma)y^J}{\sum_J(1+O^J\gamma)}$ is “lobby-weighted” income

Positive implications

size of government now reflects organization of interest groups

$\mathcal{J} = 3$ case: if $O^R = 1$ and $O^M = O^P = 0$, we have

$\hat{y} > y$ and $g^l < g^* < g^M$, median-voter result overturned

b. Composition of government

Equilibrium properties

by (2) and (12), provision of $g^{l,J}$ satisfies

$$H_g(g^{l,J}) - 1 = -\frac{\gamma}{1 + \gamma}(1 - \lambda_L) \quad \text{if } O^J = 1$$

$$H_g(g^{l,J}) - 1 = \gamma\lambda_L \quad \text{if } O^J = 0 ,$$

where $\lambda_L = \alpha \sum_J O^J$ is the organized share of population

Positive implications

groups with $O^J = 1$ get better treatment

over-provision larger the smaller is λ_L

smaller groups internalize less of costs

General insights from this lecture

Sheer numbers can be source of political power
emphasized in median-voter models

Other sources of political power for certain groups

- (i) specific features helping opportunistic candidates win many swing voters, organization to make contributions more information, high electoral turnout, similar to ϕ^J, O^J (one of topics in Lecture 2)
- (ii) groups with large stakes in policy obtain a high weight in politicians objective, directly or indirectly