Political Economics II
Spring 2017

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: cover basic building blocks of political economics
theoretical and empirical tools, as well as selected
applications to illustrate their prospective use

(Pol III: present selected topics on the research frontier)

Political economics?

research program in last, say, 20 years

Overall question in focus?

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

Theoretical approach?

early work in three separate traditions (cf. background reading)
each of which had its own problems

(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)

institutions, collective-choice procedures, but naive policies

Gradual improvements on theoretical front

combine best of three traditions

more tuned towards empirical application

Empirical approach?

early work suffered from three problems

(i) tests of theory not very precise

(ii) identification not so convincing

(iii) institutional detail not taken much into account

Gradual improvements on empirical front

more solid theoretical foundations

the causal revolution has swept this field as well

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

4-5 problem set sessions
TAs: Jaakko Meriläinen and Matti Mitrunen

I. Electoral Competition and Voter Behavior

Two common policy examples throughout the course

different outcomes, as we vary assumptions about:
(i) political objectives, (ii) commitment capacities,
(iii) politician types, (iv) political institutions

Aims of Lecture 1

introduce alternative work-horse models of policy choice

illustrate some political forces that influence policy

Agenda

A. Two simple models of government spending

B. Downsian electoral competition

C. The basic probabilistic voting model

D. Combine electoral competition and lobbying

E. Combine electoral competition and partisan politics

A. Two simple models of government 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., policy *non-targeted*

Income distribution

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

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

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

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

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

Government budget

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

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

Policy preferences

differ by relative income, *tax prices*, alone

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

by voter J optimum, $W_g^J(g) = 0$, we have

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

G monotonically decreasing

preferences well–behaved

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

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

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

Optimum for utilitarian SWF

maximize $\sum_J \alpha^J W^J(g) = W(g) = (y - g) + H(g) \Rightarrow$

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

Exemplifies general class of policy problems

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

emphasis on *vertical* policy conflict across individuals

many such problems have been studied in political economics

2. Composition of government

$\mathcal{J}$ groups

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

Group J members

no heterogeneity within or across groups, income $y^J = y$ all J

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

g^J per-capita spending on group J, no spillovers
with slight abuse of notation, $(g^J) \equiv g$
multi-dimensional and *targeted* policy (a vector)

Interpretation

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

Utilitarian optimum

$$\max \textstyle\sum_J \alpha^J w^J \text{ s t } \sum_J \alpha^J (g^J + c^J) = y \Rightarrow$$

$$H_g(g^*) - 1 = 0$$

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

But we consider centralized government budget

g financed by common (head) tax: $c^J = y - \tau$

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

Policy preferences

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

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

Exemplifies general class of policy problems

most policies can be thought of as multi-dimensional and targeted

emphasis on *horizontal* policy conflict across groups

B. Downsian electoral competition

Standard maintained assumptions

(i) *two candidates* (parties), $C = A, B$

(ii) simultaneously *commit* to electoral platforms: g_A, g_B

(iii) *before* a *plurality* (winner-takes-all) election

(iv) to maximize expected *ego rents*: $p_C R$, with

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

where π_A is $A's$ vote share, assuming that everybody votes

1. Size of government

One-dimensional analog of many, many applications

highlights distribution of policy preferences, given F

Optimal voting behavior

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

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

note the 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: $g_A = g_B = g^m = G(\frac{y^M}{y})$

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

a number of testable predictions – Lecture 2

Normative implication

majority wants higher spending than utilitarian planner

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

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 $P(g_A, g_B)$ and vice versa for B

without effective monotonicity in one dimension, can't split electorate in half $\Rightarrow$ cycling (Condorcet paradox)

this existence problem was thought fatal in early literature on social choice

considered an obstacle to do serious political economics

C. The basic probabilistic voting model

Background

originally suggested as solution to non-existence problem,
but has since become a useful work-horse in its own right

1. General formulation

Basic idea

smooth out discontinuity in p_A

assume voters have innate candidate/party preferences,
which include an idiosyncratic and a common popularity shock
(could stand in for preferences over non-pliable policies)

Overall preferences of voter i in group J

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

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

Idiosyncratic popularity shock

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

Common popularity shock

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

Timing

parties know $\{\phi^J\}$ and ψ, but not $\{\sigma^{i,J}\}$ and δ, when they set g – the shocks are realized before election

Swing voter in group J defined by

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

Vote share of party A in group J

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

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

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

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

Probability of winning for A

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

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

note that p_A is now everywhere continuous and concave in g_A, given g_B, and independently of dimension of g

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: $g_A = g_B = g^p$
because both parties have an identical decision problem
(without uniform distributions of σ and δ, we need an
additional assumption for existence)

note that parties effectively maximize a "weighted SWF"

This is a general result

it is independent of the form and dimension of W^J,
as long as concavity and continuity of P in g holds

2. Equilibrium policy in the specific policy examples

a. Size of government

Properties

g blunt instrument to please (groups of) voters: g^p pushed towards bliss point of J with many swing voters (high $\alpha^J \phi^J$)

these groups have most political power

Formal analysis

g_A maximizes $p_A R$, given g_B – by (1) and (6), we get FOC

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

which we can rewrite as

$$g^p = H_g^{-1}(\frac{\widetilde{y}}{y}) = G(\frac{\widetilde{y}}{y}) \tag{7}$$

where $\frac{\widetilde{y}}{y} = \frac{\Sigma_J \alpha^J \phi^J y^J}{\phi y}$ is "swing-voter weighted" tax price

Positive implication

g^p potentially very different than g^m

three-group example: suppose $\phi^R > \phi > \phi^P$, such that $\widetilde{y} > y$

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

large groups more powerful – influence $\widetilde{y}$ more

Normative implication

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

Methodological implication

don't apply the median-voter solution lazily and blindly
just because a Condorcet winner exists

b. Composition of government

Properties

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

politicians have 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

Positive and normative implications

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

otherwise $g^{p,J} \gtreqless g^*$ as $\phi^J \gtreqless \phi$

note, relative group size plays no role

politicians internalize costs of g^J imposed on all groups

large α^J – large influence but more expensive to please (these effects cancel out)

Methodological implication

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

D. Combine electoral competition and lobbying

Background

many ways to model influence of organized interest groups

this simple example adapted to 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 $\alpha^J = \alpha = \frac{1}{\mathcal{J}}$, to simplify algebra

Lobbies

group J "organized", $O^J = 1$, or not, $O^J = 0$

organized lobbies seek to influence election outcome

$$C_C = \sum_J \alpha O^J C_C^J \tag{8}$$

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

"common popularity" influenced by relative campaign spending

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

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

$\Rightarrow$ swing voter in J

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

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 ?

maximize utility of average member

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

common and idiosyncratic shocks integrate out

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

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

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

Properties of equilibrium

as B has symmetric problem, policies converge to same point 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. Equilibrium policy in specific policy examples

a. Size of government

Equilibrium properties

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

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

where $\frac{\widehat{y}}{y} = \frac{\Sigma_J (1+O^J\gamma) y^J}{\Sigma_J (1+O^J\gamma) y}$ is "lobby-weighted" tax price

Positive implications

size of government now reflects organization of interest groups

three-group example: if $O^R = 1$ and $O^M = O^P = 0$, we have $\widehat{y} > y$ and $g^l < g^* < g^m$, median-voter result overturned

b. Composition of government

Equilibrium properties

by (2) and (12), optimal 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 is larger, the smaller is λ_L

smaller groups internalize less of costs

E. Combine electoral competition and partisan politics

What if candidates are policy-motivated and partisan rather than opportunistic? (anticipate Section II)

1. Policy convergence

Study one-dimensional size of government example

simple model with Condorcet winner and discrete $y^J \sim F(\cdot)$

voters have no candidate preferences, initially

"Citizen candidates" in Downsian setting

individuals with $y^J = y^C$, $W^C(g) = (y - g)\frac{y^C}{y} + H(g)$

2 candidates $C = L, R$

with given ideal points on opposite sides of median voter's

$$y^L < y^M < y^R, \quad g^L = G(\frac{y^L}{y}) > g^M = G(\frac{y^M}{y}) > g^R = G(\frac{y^R}{y})$$

binding commitment to platforms (g_L, g_R) to max $E[W^C(g)]$

Voters

by monotonicity, $p_L = P(g_L, g_R)$ *discontinuous* in policy

$$p_L = \begin{cases} 0 & \text{if} \quad W^M(g_L) < W^M(g_R) \\ \frac{1}{2} & \text{if} \quad W^M(g_L) = W^M(g_R) \\ 1 & \text{if} \quad W^M(g_L) > W^M(g_R) \end{cases}$$

Candidate incentives

L maximizes

$$E[W^L(g_L) \mid g_R] = P(g_L, g_R)(W^L(g_L) - W^L(g_R)) + W^L(g_R)$$

if $g_R < g^M$, it is optimal for L set $g_L > g^M$
but close enough to g^M that $p_L = 1$

Equilibrium

by continuing this argument, unique equilibrium has

$$g_L = g_R = g^M$$

i.e., same outcome as with opportunistic politicians.

Intuition

as long as $g_L > g_R$, bringing g_L "closer to" g^M than g_R
by a small decrease in g_L shifts $P(g_L, g_R)$ from 0 to 1 $\Rightarrow$
at point where $W^M(g_L) = W^M(g_R)$,this gives
infinitesimal loss $-\frac{dW^L}{dg}$,but discrete gain $W^L(g_L) - W^L(g_R)$

Positive implications

policy outcome depends *only* on voter preferences

independent of identity of ruling party – appears counterfactual

2. Policy divergence

When does the extreme result in **1**. fail ?

a. when competition is "less fierce"

b. when candidates cannot commit

a. Competition with probabilistic voting

cf. Exercise 5.1 in P-T (2000), or model in **C.**

where $P(g_L, g_R)$ responds *continuously* to g_C

first-order condition for candidate L has the form

$$p_L \frac{dW^L}{dg_L} + [W^L(g_L) - W^L(g_R)] \frac{\partial P}{\partial g_L} = 0$$

if $g_L = g_R$, 1st term > 0, 2nd term $= 0$

if $g_L > g^* > g_R$, 1st term > 0, 2nd term < 0

apply similar argument for R

$\Rightarrow$ equilibrium with policy divergence

$$g^R \leq g_R < g^* < g_L \leq g^L$$

Intuition

probability of winning falls slowly when candidates leave the center, so can trade off chance of winning against policy

Extension

allow for interest groups as in **D.**

result can go either way, depending on who's organized

if lobbies in groups with extreme preferences: $y < y^L, y > y^R$ equilibrium policies are pulled further apart

b. No commitment to policy platforms

One-shot game in model of **1.**

tension between ex ante platform incentives
and ex post preferences; only credible policy is

$$g_L = g^L, \qquad g_R = g^R$$

L wins if $W^M(g^L) > W^M(g^R)$

Implications

in **a.** and **b.** observed policy depends on *both*
(candidate) party and voter preferences for g

in **a.** also on competitiveness of election
electoral uncertainty, expected popularity, ...

But shouldn't candidate preferences be endogenous?

then, don't we get policy convergence? typically not!
model with endogenous entry coming up in Lecture 4

General insights on which groups are politically powerful

Median-voter models (and its extensions)

(i) power can derive from sheer size (cf. **B**)

(ii) preference overlap with popular politicians (cf. **E**)

Probabilistic voting-model (and its extensions)

(i) groups that help opportunistic candidates win:
many voters, or swing voters (cf. **C**), organized interests (cf. **D**)

(ii) other characteristics: many informed voters θ^J or a high turnout rate t^J would play similar role as ϕ^J or O^J – if we generalize model in **C.**, we can derive the analog to (6) as

$$P(g_A, g_B) = \frac{1}{2} + \frac{\psi}{\phi}[\sum_J \alpha^J \theta^J t^J \phi^J (W^J(g_A) - W^J(g_B))]$$

(iii) groups with large stakes in policy obtain a higher weight in politicians' objectives, directly or indirectly