Political economics II

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Lectures 4-5

Part II Partisan politics and political agency

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Introduction: Partisan politics

Aims

continue exploring policy choice in representative democracy

when politicians are partisan
i.e., like citizens they have objectives over policy outcomes
rather than pure electoral (or rent-seeking) objectives

introduce another set of "work-horse" models

Agenda

A. Electoral competition

B. Endogenous citizen candidates

C. Agenda setting and legislative bargaining

A. Electoral competition

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 exogenous candidates $C = L, R$

with ideal points on opposite sides of the 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

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

$g_R < g^M \Rightarrow$ optimal for L set $g_L > g^M$
but close enough to g^M that $p_L = 1$

Equilibrium

by continuing this argument, unique outcome is

$$g_L = g_R = g^M$$

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 $\Rightarrow$
loss $-\frac{dW^L}{dg}$ infinitesimal, but gain $W^L(g_L) - W^L(g_R)$ discrete

Positive implications

policy outcome depends *only* on voter preferences

independent of identity of ruling party – appears counterfactual

2. Policy divergence

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

a. when competition is "less fierce"

b. when candidates cannot commit

a. Probabilistic voting

cf. Exercise 5.1 in P-T (2000), or model in Lecture **1**

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

FOC for party 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 $< 0 \Rightarrow$

apply similar argument for R

$\Rightarrow$ equilibrium with policy divergence

$$g^R \leq g_R < g$$

Intuition

probability of winning falls slowly when leaving the center
so can trade off chance of winning against policy

Extension

allow for interest groups as in Lecture **1.4**

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

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

b. No commitment

back to model in **1.**

one-shot game: 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 (party) preferences be endogenous?

B. Endogenous citizen candidates

Add entry stage ahead of election

any citizen, with income y^C, can enter as candidate at cost ε

stay in size of government example: $\mathcal{J}$ still a large number

after entry, model like no-commitment case in **A.2.b**

Timing: three stages

1. citizens make entry decisions,

   if no entry $\Rightarrow g = \overline{g}$, "status quo" policy

2. plurality election among entering candidates,

   voters cast their ballot *strategically*

3. winning candidate chooses policy

Stage 3

if elected, y^C implements $g^C = G(\frac{y^C}{y})$

Stage 2

a voter in J casts ballot for C that maximizes $E[W^J]$, *given* strategy of other voters (strategic voting)

Stage 1

a member of group J enters only if that raises $E[W^J]$, *given* entry strategy of other candidates

a. One-candidate equilibria

Existence?

yes, several may exist (due to entry cost)
will somebody with y^M run, and win?
y^M beats any other candidate y^C, as g^M Condorcet winner

Equilibrium conditions

y^M can run uncontested if

$$W^M(g^M) - W^M(\overline{g}) > \varepsilon$$

and no other type J finds it profitable to enter,
she cannot win against y^M and entry is costly

and no other member of group M enters either,
this does not change g and entry is costly

b. Two-candidate equilibria

Existence?

yes, several with $C = L, R$ $\qquad y^L < y^M < y^R$

Equilibrium conditions

$$W^M(G(\frac{y^L}{y})) = W^M(G(\frac{y^R}{y}))$$

each candidate has equal chance of winning, and

$$\frac{1}{2}[W^L(G(\frac{y^L}{y})) - W^L(G(\frac{y^R}{y})) > \varepsilon$$
$$\frac{1}{2}[W^R(G(\frac{y^R}{y})) - W^R(G(\frac{y^L}{y})) > \varepsilon$$

gains enough, in terms of expected utility

Also

3rd candidate does not enter in between y^L and y^R
  voters' equilibrium strategies keep entry unprofitable
  y^L and y^R balance each other, votes from either side of y^M

Implications

never policy convergence in two-candidate equilibria

"candidate identity matters", but predictions are blunt
  because of multiplicity

Why work-horse model?

intuitively appealing

can handle multi-dimensional policy problems
  restrict voter choices to ex-post optimal policy platforms

C. Agenda setting and legislative bargaining

1. General modeling

Two common applications of generalized agenda-setter model

(i) politician-initiated referenda on policy, among voters

(ii) here – legislative bargaining, among lawmakers

Incumbent legislators

consider *three* policy-motivated parties (legislators) J
perfect delegates of three groups: each maximizes $W^J(g)$

Subsequent applications

2.a size of government example, with $\mathcal{J} = 3$

2.b composition of government example, with $\mathcal{J} = 3$

Closed-rule, one-round bargaining:

agenda-setter, $A \in \{L, M, R\}$
makes take-it-or-leave-it proposal

Timing

1. nature picks A
2. A proposes g_A
3. legislature votes:
   if at least one of $J \neq A$ in favor, $g^b = g_A$
   if not, $g^b = \overline{g}$, "status quo" implemented

Status-quo policy?

$\overline{g} = 0$ "close down government"

$\overline{g} > 0$ "last year's policy"

Requirement for acceptable proposal at stage 3

$$W^J(g_A) \geq W^J(\overline{g}) \;\text{ for at least one }\; J \neq A$$

$\Rightarrow A$ maximizes $W^A(g)$ subject to incentive compatibility

General properties of g^b

(i) A puts together minimum-winning coalition: seeks support only from one $J = X$, if g generates conflict of interests

(ii) X held to status-quo payoff: $W^X(g_A) = W^X(\overline{g})$ costly to overfulfill incentive compatibility constraint

(iii) $J = N$ non-coalition member screwed: $W^N(g_A) \leq W^N(\overline{g})$

(iv) X is legislator whose vote cheapest to get small size α^J or low status-quo payoff $W^J(\overline{g})$

2. Specific results

a. Size of government example

Three different income groups

one party each $y^L < y^M < y^R, \quad g^J = G(\frac{y^J}{y})$

Equilibrium when $A = M$

$g^b = g^M$ Condorcet winner in legislature

Equilibrium when $A = L$ ($A = R$ case analogous)

$$g^b = \begin{cases} g^L & \text{if} \quad \overline{g} \geq g^L \\ \overline{g} & \text{if} \quad g^L \geq \overline{g} \geq g^M \\ \text{Min}[g^L, \widetilde{g}^M] & \text{if} \quad g^M > \overline{g} \end{cases}$$

where $W^M(\widetilde{g}^M) = W^M(\overline{g})$

Intuition

L seeks support only from closest incumbent M
cf. properties (i), (iii) and (iv) in **1**

L never sets g above g^L and need not go below g^M
A is maximizing

L goes to status quo or equivalent, depending on $g^M \gtrless \overline{g}$
cf. property (ii) in **1**

Implications

party representing "center group" M politically powerful: member of every coalition

A 's power related to the status quo

b. Composition of government example

E.g., three different regions J

have one (set of) legislator(s) each

Properties of equilibrium g^b

$$g^{b,N} = 0$$

$$H(g^{b,X}) - \alpha^X g^{b,X} - \alpha^A g^{b,A} = H(\overline{g}^X) - \sum_J \alpha^J \overline{g}^J$$

$$H_g(g^{b,A}) = \alpha^A \frac{H_g(g^{b,X})}{H_g(g^{b,X}) - \alpha^X}$$

$g^{b,N} = 0 < g^*$ (property (iii) in **1**)

$g^{b,X} \lesseqgtr g^*$ depending on parameters (property (ii) in **1**)

$g^{b,A} > g^*$

under weak conditions, in particular α^X not too large

note that A spends less than if unconstrained, which would mean setting $H_g(g^{b,A}) = \alpha^A$

Intuition

when A spends more on her own group she raises τ

so X is worse off and needs compensation by higher spending equal to $\frac{dg^X}{dg^A} = \frac{\alpha^A}{H_g(g^{b,X}) - \alpha^X}$, which costs A $\alpha^X \frac{dg^X}{dg^A}$

total cost of raising g^A is $\alpha^A + \alpha^X \frac{dg^X}{dg^A} = \alpha^A \frac{H_g(g^{b,X})}{H_g(g^{b,X}) - \alpha^X}$

Who does A choose as majority partner?

compute cost for each level of g^A and each prospective majority partner – i.e., solve 2^{nd} condition for each $J \neq A \Rightarrow$

$$g^J = Z(g^A, \overline{g}^J, \alpha^J) \ ,$$

where Z increasing in all arguments

pick $J \neq A$ whose vote is cheapest (property (iv) in **1**)
$\Rightarrow$ pick X such that $\overline{g}^X, \alpha^X$ are low

Implications

groups with powerful lawmakers – i.e., with $J = A$ – are better off: their representatives often make policy proposals

small – i.e., low α^J – rather overrepresented, groups are better off: their lawmakers often part of coalition

and so are "weak"– i.e., low $\overline{g}^J$ – groups, in contrast with usual, unanimity, bargaining

3. Discussion

Extend to *multi*-round bargaining

$A_N \neq A_{N-1}$ makes N^{th} round proposal if $g_{A_{N-1}}$ falls

same logic, only A_N has to offer coalition partner
continuation value, rather than status-quo value

dilutes agenda-setter power

Extend to *open*-rule bargaining

proposals can be amended by other legislator
also dilutes power of A

Why work-horse model?

intuitively appealing

can handle multi-dimensional policy problems

easy represent alternative legislative arrangements

Introduction: Political agency

Aims

- explore agency problem between voters and elected representatives
- how serious is it? does it spill over on policy?
  - can voters discipline politicians?
- theory:
  - begin by slightly extending size of government example
  - develop to illustrate different functions of elections

Agenda

A. Electoral competition

B. Electoral accountability

C. Electoral career concerns

A. Electoral competition

1. Policy efficiency

Introduce endogenous rents in size of government model

$r \geq 0$ interpret as diversion of funds for personal gain, party finance, or mismanagement of government funds

$$\tau y = g + r \tag{1}$$

$\mathbf{q} = (g, \tau, r)$ denotes policy vector

Candidate objectives

rewrite as

$$E(v_C) = p_C(R + \gamma r) \tag{2}$$

γ "transaction cost"

direct conflict of interest between politicians and voters

Voters

rewrite policy preferences

$$W^J(\mathbf{q}) = [y - (g + r)]\frac{y^J}{y} + H(g)$$

again well behaved, "monotonic", preferences

(r valence issue) $\Rightarrow$ Condorcet winner exists

$$g^M = G(\frac{y^M}{y}), \qquad r^M = 0$$

Benchmark Downsian model

same assumptions as in Lectures **1** and **4**

$y^J \sim F(\cdot)$ discrete with many groups

2 candidates make binding commitment to platforms $\mathbf{q}_C$

Probability of winning

like before, p_A is discontinuous in policy

$$p_A = \begin{cases} 0 & \text{if} \quad W^M(\mathbf{q}_A) < W^M(\mathbf{q}_B) \\ \frac{1}{2} & \text{if} \quad W^M(\mathbf{q}_A) = W^M(\mathbf{q}_B) \\ 1 & \text{if} \quad W^M(\mathbf{q}_A) > W^M(\mathbf{q}_B) \end{cases}$$

by monotonicity in y^J

Equilibrium

unique outcome is

$$g_A = g_B = g^M, \qquad r_A = r_B = r^M = 0$$

identical to the outcome in Downsian models with opportunistic and partisan candidates

Intuition

competition for exogenous rents R is stiff enough
(p_A discontinuous in policy) to keep endogenous rents r to zero
cf. results on policy convergence for partisan candidates
another type of political agency (relative to majority of voters)

2. Policy inefficiency

Competition may fail when less stiff

Illustrate in probabilistic voting set-up

consider version of model in Lecture 1
$\phi^J = \phi$ all J, timing as in **A.1**

Probability of winning

swing voters in each group

$$\sigma^J = W^J(\mathbf{q}_A) - W^J(\mathbf{q}_B) - \delta \tag{3}$$

same type of calculations as in Lecture **1** $\Rightarrow$

$$p_A = \frac{1}{2} + \psi[W(\mathbf{q}_A) - W(\mathbf{q}_B)] \tag{4}$$

Candidate objectives

if purely opportunistic (maximize $p_C R$), (4) gives efficiency

but, here, objective is (2) $\Rightarrow$ trade-off between r and p_C

intuition again analogous to the one in Lecture **4**

Equilibrium spending?

candidates converge on policy that maximizes (2), given (4)

$$\frac{\partial E[v_A]}{\partial g_A} = (R + \gamma r_A)\frac{\partial p_A}{\partial g_A} = (R + \gamma r_A) W_g = 0$$

i.e., $g = g^*$, efficient spending

Equilibrium rents?

not necessarily driven to zero

trade off probability of winning vs. marginal rents

$$\frac{\partial E[v_A]}{\partial r_A} = (R + \gamma r_A)\frac{\partial p_A}{\partial r_A} + p_A\gamma$$
$$= -(R + \gamma r_A)\psi + p_A\gamma \le 0 \quad [r_A \ge 0]$$

we have ($p_A = \frac{1}{2}$ in eq.), $r = \text{Max}\,[0, \frac{1}{2\psi} - \frac{R}{\gamma}]$

Rents positive if

R small, γ large, ψ small

Intuition

candidates not perfect substitutes (except for swing voters)

as prob of winning continuous in r, candidates have room to pursue their own agenda – cf. results on policy divergence for partisan candidates

Positive implications

$r > 0$ means that $\tau > \frac{g^*}{y}$

rents (measured spending) higher if

more illegitimate regimes (low electoral reward): R small

weaker checks and balances: γ large

large electoral uncertainty (weak voter response to r): ψ small

(asymmetric popularity: see Problem 4.1 in P-T, 2000)

B. Electoral accountability

Assumption of binding commitment too strong?

enforcement and information problems

credibility of platform promises becomes a real issue

2nd function of elections

in models, so far, "prospective" vote, to select policy

now instead: control behavior of incumbent, no commitment

all voters have same utility: $W(\mathbf{q}) = y - (g + r) + H(g)$

but "retrospective" vote, to punish bad behavior

Timing

(i) voters set reservation utilities ϖ^i,

(ii) incumbent I sets policy $\mathbf{q}_I$, (iii) election held

Incumbent objective

$$E[v_I] = \gamma r_I + p_I \beta R \tag{5}$$

reflects new timing

Opponent

identical to I in all respects (no incumbency advantage)

Voter coordination

all voters coordinate on same strategy $\varpi^i = \varpi$

$$p_I = \begin{cases} 1 & \text{if } W(\mathbf{q}_I) > \varpi \\ 0 & \text{otherwise} \end{cases} \tag{6}$$

alternative: assume distribution of reservation utilities

this works, basically, as prior probabilistic voting model

Basic incentive constraint

intertemporal trade off for I

$$\gamma r_I + \beta R \geq \gamma y \tag{7}$$

good behavior: leads to re-election and future rents (LHS)

bad behavior: max current diversion but no re-election (RHS)

Best feasible policy for voters?

Max $W(\mathbf{q})$ s t (7) and (1) $\Rightarrow$

$$\begin{aligned} r^* &= \text{Max}\,[0, y - \frac{\beta R}{\gamma}] \\ g^{**} &= \text{Min}\,[g^*, \frac{\beta R}{\gamma}] \qquad [\tau \leqq 1] \end{aligned} \tag{8}$$

I gets away with some rents

unless βR high, γ and y low – cf. results in **A.2.**

How can voters implement (8)?

I sets policy according to (8) to earn re-election

if voters set ϖ at

$$\varpi^* = y - (g^{**} + r^*) + H(g^{**})$$

Asymmetric information (about cost of g)

more complex case

I earns additional (state-dependent) rents

voters worse off

C. Electoral career concerns

3rd role of elections

neither select policy, *nor* reward good behavior

rather, select competent leader

assume talent comes in different types, affects performance and lasts over time

Simplified two-period model – election at end of period 1

period utility of voter i

$$w_t^i = y - \tau_t + \alpha g_t - D_2^I \sigma^i \tag{9}$$

linearity in $g \Rightarrow$ risk neutrality

σ^i taste bias against I_1, uniform on $[-\frac{1}{2\phi}, \frac{1}{2\phi}]$
only relevant in period 2 if I_1 re-elected

(note: no aggregate popularity shock δ)

Government policy

$$g_t = \overline{\tau} - r_t + \eta_t + \nu_t \tag{10}$$

τ_t fixed at $\overline{\tau}$, $r_t \leq \overline{r}$, i.e., upper bound on r_t

η_t any *new* politician's "talent" is iid $\sim N(\overline{\eta}, \mathrm{Var}(\eta))$
but lasting over time – see below

ν_t productivity shock is iid $\sim N(0, \mathrm{Var}(\nu))$

Incumbent objective

$$E(v_I) = \ln(r_1) + p_I \beta[(R + E(\ln(r_2))] \tag{11}$$

set $\gamma = 1$, add curvature over rents, to get simple solutions

Assumptions about politician talent

I_1 does *not* know η_1 (and ν_1) when sets r_1 (avoid signaling)

I_1 re-elected: $\eta_2 = \eta_1$ (incumbent talent lasts), $E(\eta_2) = E(\eta_1)$

I_1 ousted: $E(\eta_2) = \overline{\eta}$ (average opponent has average talent)

Period 2 choice of r

all incumbents set $r_2 = \overline{r}$ (as world ends)

$\Rightarrow$ from (9)-(10) $E(g_2) = \overline{\tau} - \overline{r} + E(\eta_2)$ and

$$E(w_2^i) = y - \overline{\tau} + \alpha(\overline{\tau} - \overline{r} + E(\eta_2)) - D_2^I \sigma^i$$

voters like talented politician better, ceteris paribus

Optimal voting strategy

I_1 has $E(\eta_2) = E(\eta_1)$, opponent has $E(\eta_2) = \overline{\eta}$
vote for I_1 if $\sigma^i < \alpha[E(\eta_1) - \overline{\eta}]$ such that

$$\pi_I = \frac{1}{2} + \phi\alpha[E(\eta_1) - \overline{\eta}] \qquad (12)$$

is vote share of incumbent

Information at $t = 1$ pins down $E(\eta_1)$: two cases

1. informed voters: observe g_1 and $\nu_1 \Rightarrow E(\eta_1 \mid g_1, \nu_1)$

2. uninformed voters: observe only $g_1 \Rightarrow E(\eta_1 \mid g_1)$

1. Informed voters

Voters' inference problem

given (10), can perfectly gauge incumbent talent $\Rightarrow$

$$E(\eta_1 \mid g_1, \nu_1) = \eta_1 = g_1 - \overline{\tau} + r_1^* - \nu_1, \tag{13}$$

where r_1^* is expected equilibrium rents

Incumbent choice of r

when I_1 sets r_1 uncertain about η_1 (and ν_1) and hence g_1, but knows how expectations are formed and takes r_1^* as *given*

by (10), (12) and (13), his anticipated vote share conditional on η_1 and r_1 becomes

$$\pi_I = \frac{1}{2} + \phi\alpha[\eta_1 - \overline{\eta} + r_1^* - r_1]$$

and his perceived probability of winning is

$$p_I = \text{Prob}_\eta\, [\pi_I \geq \frac{1}{2}] = 1 - F(\overline{\eta} - r_1^* + r_1) \tag{14}$$

where F is the c.d.f. of η – clearly, larger r_1 cuts (perceived) p_I

Optimal policy

max (11) w r t r_1 s t (14), and setting $r_2 = \overline{r}$, yields

$$r_1 = \frac{1}{f(\overline{\eta} - r_1^* + r_1)\beta\widetilde{R}}$$

where $\widetilde{R} = R + \ln(\overline{r})$, and f is the p.d.f. of η

Equilibrium

voters expectations are correct, such that $r_1^* = r_1$, and

$$r_1 = \frac{1}{f(\overline{\eta})\beta\widetilde{R}}$$

Interpretation

voters look like they follow retrospective strategy
rewarding high performance (utility) with re-election

but current performance is an indicator of future competence
and this creates an intertemporal trade-off for I_1

Positive implications

rents higher (cf. results in **A** and **B**) when

electoral reward is small: $\beta\widetilde{R}$ low

electoral uncertainty is large: $f(\overline{\eta})$ low, i.e., $\text{Var}(\eta)$ large
cf. result in **A.2** about uncertainty over δ

2. Uninformed voters

Voters' inference problem

can no longer gauge η_1 perfectly, as ν_1 unobserved

using (10), they can, perfectly, infer the sum $\Rightarrow$

$$E(\eta_1 + \nu_1 \mid g_1) = \eta_1 + \nu_1 = g_1 - \overline{\tau} + r_1^* \ , \qquad (15)$$

let voters form an optimal (OLS) estimate of η_1, given that they see $E(\eta_1 + \nu_1 \mid g_1)$ and have unconditional (prior) mean $\overline{\eta}$

This yields

$$E(\eta_1 \mid g_1) = h_\eta \overline{\eta} + h_\nu E(\eta_1 + \nu_1 \mid g_1) \ , \qquad (16)$$

where $h_\eta = \frac{\mathrm{Var}(\nu)}{\mathrm{Var}(\eta)+\mathrm{Var}(\nu)}$ and $h_\nu = \frac{\mathrm{Var}(\eta)}{\mathrm{Var}(\eta)+\mathrm{Var}(\nu)}$

so, observation of g_1 is less valuable in inference about η_1 the more noisy is ν_1

Incumbent expectations

by (10), (12), (15) and (16), I anticipates a vote share

$$\pi_I = \frac{1}{2} + \phi\alpha h_\nu[\eta_1 + \nu_1 - \overline{\eta} + r_1^* - r_1]$$

π_I will respond less to rents when voters uninformed

perceived probability of winning is

$$p_I = \text{ Prob}_{\eta+\nu}\ [\pi_I \geq \frac{1}{2}] = 1 - G(\overline{\eta} - r_1^* + r_1) \tag{17}$$

where G is the c.d.f. of distribution for $\eta + \nu$ – the sum of two normals with mean $\overline{\eta}$ and variance Var(η)+Var(ν)

Optimal policy

maximizing (11) w r t r_1 s t (17) yields

$$r_1 = \frac{1}{g(\overline{\eta} - r_1^* + r_1)\beta\widetilde{R}}$$

where g is the p.d.f. of $\eta + \nu$

In equilibrium

$$r_1 = \frac{1}{g(\overline{\eta})\beta \widetilde{R}}$$

Compare to case with informed voters

G, distribution of $\eta + \nu$, has same mean (i.e., $\overline{\eta}$), but larger variance (i.e., Var(η)+Var(ν)) than F, distribution of η

therefore, we must have $g(\overline{\eta}) < f(\overline{\eta})$

so r_1 is larger with uninformed voters and more so the larger is Var(ν) – the more difficult is inference about η

Three extensions

(i) informed *and* uninformed voters

combination of **1** and **2**

larger share of uninformed (less availability of media) implies larger rents and less response of voters to misbehavior

(ii) embed in multi-period model

elections every two periods, and MA process for $\eta \Rightarrow$

electoral cycle: cut r (raise spending) in election periods, unless there is a term limit

(iii) η known by incumbent $\Rightarrow$ incentives to signal

more complex solution, but many results similar