Evolution, Uncertainty, and the Asymptotic Efficiency of Policy

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Two Conflicting Views of Politics

- Government failure theory:
- Political Coase theorem:

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Static Political "Coase" Theorem

- Suppose competiting interest groups bargain over policy
  - Steel producers vs. steel consumers
- Steel producers wants to enact tariffs with benefit B to them
- The consumers would incur a cost C
- Without organization costs, new policy is enacted if $B > C$

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Static Political "Coase" Theorem

- If $B < C$, as in standard model, policy is inefficient
- Consumers can organize into consumers and block
- Consumers can offer to pay producers an amount $B + \epsilon < C$
- Without transaction costs, policy is efficient

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Adding Organizational Costs

- Cost of organizing Group $i \in \{P, C\}$: O_i
- Organize and enact policy if $B - O_P > 0$
- If $B < C$, to prevent this policy, group 2 must form and pay a bribe: $B - O_P + \epsilon + O_C$
- If $B < C$, but $B + \epsilon + (O_C - O_P) > C$, then rest will never materialize
- Rest of society is better off living with C than working to prevent
- $O_C - O_P$ creates wedge preventing efficient policies
    - Olson (1965)

Moving to Dynamics

- Previous examples can't speak to dynamic persistence
  - One time, eternal vote on policy
- B flow benefit to producers $\Rightarrow B/r$ present value
  - r= real interest rate
- To overturn policy, consumers would have to enter the political market and pay the producers $B/r + \epsilon$
- If steel productivity in foreign countries follows a random walk, then C will follow a random walk
- Once $C > C^*$, consumers will enter
- C^* depends on O_C and the time-series properties of C

Theoretical Results

- **Proposition 1:**
  - Policy inefficiencies are eliminated in the long run

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- **Proposition 1:**
  - Policy inefficiencies are eliminated in the long run
- **Proposition 2:**
  - The level of inefficiency is bounded in the short run
- **Proposition 3:**
  - Static analysis finds too many inefficient politics

Move to Evolutionary Perspective

- Goal: emphasize the dynamic, evolutionary attributes of politics
- Interest group formation as selection mechanism:
  - Interest groups pay cost to form,
  - Enter politics, and
  - Overturn policies
- Only take action if MB > MC

A Formal Model

- Standard real option model
- Time is continuous, lasts forever
- Currently policy:
  - Flow benefits to current interest group: B
  - Flow cost to rest of society: C
- Cost to organize an interest group: O

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$$\text{Entry benefit} = \underbrace{E\int_t^{\infty} e^{-\rho t}C(t)dt}_{\text{Expected Cost Saving}} - \underbrace{\left(E\int_t^{\infty} e^{-\rho t}B(t)dt + \epsilon\right)}_{\text{Expected Bribe}} - \underbrace{O}_{\text{Entry Cost}}$$

- Alternatively,

$$\text{Entry benefit} = \underbrace{E\int_t^{\infty} e^{-\rho t}[C(t) - B(t)]dt - \epsilon}_{\text{Expected Net Cost Saving}} - \underbrace{O}_{\text{Entry Cost}}$$

- $N = C - B$: net social cost of the current policy
- If $N > 0$, policy is inefficient

Brownian Motion

- Suppose the net social cost of the policy varies randomly and exogenously
  - Outside control of any interest group
- Geometric Brownian motion

$$\frac{dN(t)}{N(t)} = \mu dt + \sigma dz$$

  - $\mu \geq 0$: expected rate of change in the net cost
  - σ: conditional standard deviation
  - dz: increment of a Wiener process
  - $dz = \epsilon\sqrt{dt}$, where ϵ is drawn from a standard normal distribution

Real Option to Enter

- The interest group always has the option to enter the political market and end the costly policy
- Option to enter is like a financial option
- Can derive the value of this option as a function of the net cost of existing legislation
- Can determine the precise value for the net cost at which the prospective interest group will decide to enter the market

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Option Value

- Let $V(N)$ be the option value to enter the political market
- Recursive representation:

$$V(N,t) = \frac{1}{1+\rho\Delta t} EV(N', t+\Delta t)$$

  - ρ: rate of time preference
  - E: expectations operator
  - N': net cost of the policy after a time interval of length Δt

- In continuous time,

$$\rho V(N) = \frac{1}{dt} EdV$$

Normative Implications

- In
- Normative claims must move to the institutional level and organizational costs
- The institutional level is strictly speaking, outside of the maximization calculus
- This is the Alchian move, away from firm decision making and to the institutional/market level

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🔗 Paper: http://bit.ly/bca-evolution-paper

🔗 Slides: bit.ly/bca-clemson2019

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Derivation

name: derivation

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