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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Theoretical Results

- ## Proposition 1:

  - Policy inefficiencies are eliminated in the long run

- ## Proposition 2:

  - The level of inefficiency is bounded in the short run

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Theoretical Results

- **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

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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

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

- Alternatively,

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

- $N = C - B$: 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

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- 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

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Derivation

name: derivation

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