Recognition For Sale

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agenda setting power

- A player is recognized to make a proposal.
- Others vote, and votes aggregated by a voting rule.
- If proposal is rejected, $(1 - \delta)$ of pie is destroyed.

But how is the proposer determined?

recognition processes

In practice:

- chair nominates proposers.
- seniority rules specify who makes proposals.

In theory: exogenous recognition process

Rubinstein (1982): alternating offer.

Baron-Ferejohn (1989): player i is recognized with probability p_i i.i.d.

motivating question

When institutions are weak, power (like votes) may be for sale.

How does this influence negotiations?

In each period, players bid for bargaining power.

Winner of all-pay auction = Proposer.

Theorem

One player captures the entire surplus if:

1. *no player has veto power (e.g. simple majority rule)*
2. *or offers are frequent.*

Otherwise, 2 of n players share the surplus.

implications

Selling bargaining power $\Rightarrow$ Extreme inequality

This is inefficient if

1. lobbying for power is wasteful
2. utility is non-transferable, and equity is utilitarian efficient
3. the surplus is stochastic
4. the surplus endogenously emerges from productive effort.

related literature

1. Yildirim (2007,2010): lobbying effort → stochastic recognition via contest success function.
2. Board and Zwiebel (2013): bilateral bargaining where proposer selected by a FPA, players have budgets, and voting rule is unanimity.

I apply results from all-pay auctions, particularly Siegel (2009).

Outline

example: 2 period bargaining model

- 3 players: $\mathcal{Ann}, \mathcal{Betsy}, \mathcal{Carol}$.
- 1 pie to divide.
- 2 periods to do it: $t \in \{0, 1\}$.
- In each period, highest bidder wins recognition. All pay bids.
- Proposer selects a division of dollar; others vote according to majority rule in a sequential order.
- Each player's payoff = share of dollar − bidding costs.

final period: $t = 1$

Suppose there is disagreement at $t = 0$.

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1. if the offer is rejected, all players receive 0.
2. all other players have a strict incentive to accept any $\epsilon > 0$.
3. there cannot be an equilibrium in which both players reject offer of 0.

$\approx$ All-pay auction with a prize of value 1.

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- each player bids with density $\frac{1}{2\sqrt{b}}$ on $(0, 1]$.
- Ann bids 0 w.p. 1. Betsy and Carol bid uniformly on $[0, 1]$.

but in all equilibria, all players have expected payoffs of 0.

Rents are dissipated in the race for recognition.

first period: $t = 0$

Each player's continuation payoff from disagreement is 0.

$\Rightarrow$ First period $\approx$ final period (in terms of expected payoffs).

$\Rightarrow$ First proposer captures entire surplus.

what about:

- longer finite horizons? backward induction.
- infinite horizon? stationary SPE.
- asymmetries and non-linear costs of lobbying? general model.

Outline

environment

- A legislature, $\mathcal{N} \equiv \{1, ..., n\}$.
- Dividing a dollar: choosing x from $[0, 1]^n$ such that $\sum_{i \in \mathcal{N}} x_i = 1$.
- Horizon: $\mathcal{T} \equiv \{t \in \mathbb{N} : t \leqslant \bar{t}\}$; $\bar{t} \leqslant \infty$ is deadline.

timing

Within each round t:

- Players lobby for bargaining power: player i chooses a score.
- Proposer selected among those with highest score.
- Proposer chooses division of the dollar.
- All vote on proposal in fixed sequential order.

timing

Within each round t:

- Players lobby for bargaining power: player i chooses a score.

  Cost of score: $s_i \in \mathcal{S}_i \equiv [\underline{s}_i, \infty)$ is $c_i(s_i)$.

  - Head-start: $\underline{s}_i \geqslant 0$; $c_i(s) = 0$ for all $s \leqslant \underline{s}_i$.
  - Continuous and Strictly Increasing.
  - Upper-limit to lobbying: $\lim_{s \to \infty} c_i(s) > u_i(1)$.

- Proposer selected among those with highest score.

- Proposer chooses division of the dollar.

- All vote on proposal in fixed sequential order.

timing

Within each round t:

- Players lobby for bargaining power: player i chooses a score.
- Proposer selected among those with highest score.

  Any tie-breaking procedure is fine.
- Proposer chooses division of the dollar.
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timing

- All vote on proposal in fixed sequential order.

  Results apply for general coalitional structures.

  $\mathcal{C} = \{C \subseteq \mathcal{N} : \text{every } i \in C \text{ votes in favor} \Rightarrow \text{ proposal accepted.}\}$

  $\mathcal{C}$ satisfies:

  - monotonicity: $C \in \mathcal{C}$ and $C \subset C' \Rightarrow C' \in \mathcal{C}$.
  - no veto power: if $|C| \geqslant n - 1$, then $C \in \mathcal{C}$.

  Separate results for the case of unanimity: $\mathcal{C} = \{\mathcal{N}\}$.

payoffs

Policy x accepted in round t after scores $(s_i^0, \ldots, s_i^t)$ is

$$u_i(x, t; s_i^0, \ldots, s_i^t) \equiv \delta_i^t u_i(x_i) - \sum_{\tau=0}^{t} \delta_i^\tau c_i(s_i^\tau).$$

1. Player i's discount factor is $\delta_i < 1$.
2. $u_i(\cdot)$ is continuous, strictly increasing, and weakly concave; $u_i(0) = 0$.

Model permits heterogeneity in patience and concavity / risk-aversion.

two special cases

(Non-generic): Players are one-shot symmetric if for each i, j,

1. $c_i(\cdot) = c_j(\cdot)$,
2. $u_i(\cdot) = u_j(\cdot)$.

(Generic): Players are ordered if for all $i < j$,

$$c_j(s) \leqslant u_j(1) \Rightarrow c_i(s) < u_i(1).$$

(1 is willing to fight harder for the entire surplus than 2, 2 than 3,...)

solution concept

Finite horizon: SPE.

Infinite horizon: Stationary SPE (SSPE).

- Behavior is identical across all structurally identical subgames
- Simplicity: SSPE are simplest equilibria (Baron and Kalai 1993)
- Tractability: Common restriction to avoid potential folk theorem
- Player i's strategy:- $\overline{\sigma}_i^s \in \Delta \mathcal{S}_i$, $\overline{\sigma}_i^p \in \Delta \mathcal{X}$, $\overline{\sigma}_i^v : \mathcal{X} \to \Delta\{\text{Yes}, \text{No}\}$

Outline

Theorem

If the voting rule satisfies no veto power, the first proposer captures the entire surplus in every SPE of the finite horizon, and in every SSPE of the infinite horizon.

Key steps:

- use payoff characterization from all-pay auctions
- construct a SSPE of finite and infinite horizon
- prove unique outcome in each case.

▸ Extensions

what one needs from all-pay auctions

suppose there are n players

player i wins $\Rightarrow \bar{v}_i > 0$.

player i loses $\Rightarrow \underline{v}_i < \bar{v}_i$.

player i chooses score s_i at cost $c_i(s_i)$.

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Siegel 2009:

- The all-pay auction has a Nash equilibrium.
- For at least $n-1$ players, their *ex ante* expected equilibrium payoff coincides with their payoff from losing. (i.e. $i \to \underline{v}_i$).

construction

Consider APA with $\bar{v}_i = u_i(1)$ and $\underline{v}_i = 0$ for all i.

Denote an equilibrium of it by $(\sigma_1^{NE}, \ldots, \sigma_n^{NE})$.

Let $w_i = i$'s ex ante expected payoff: $w_i = 0$ for at least $n - 1$ players.

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For both finite and infinite horizon bargaining:

1. player i bids according to σ_i^{NE}.
2. player i proposes to keep the entire dollar for herself.
3. player i votes for any proposal x in which $x_i \geqslant \delta_i w_i$.

uniqueness

finite horizon: backward induction.

uniqueness

finite horizon: backward induction.infinite horizon: W_i is i's expected

payoff before lobbying.

$$\overline{V}_i \equiv u_i \left(1 - \min_{C \in \mathcal{C}} \sum_{j \in C \setminus \{i\}} u_j^{-1}(\delta_j W_j) \right).$$

$$\underline{V}_i \equiv \left(\sum_{j \in \mathcal{N} \setminus \{i\}} \Pr(j \text{ is the proposer}) \sum_{x \in \mathcal{X} : x_i > 0} \overline{\sigma}_j^p(x) \right) (\delta_i W_i).$$

Observe $W_i = \underline{V}_i \Rightarrow W_i = 0$.

Since the above is true for at least $n-1$ players, $\overline{V}_i = u_i(1)$.

$\Rightarrow$ the first proposer captures the entire surplus in every SSPE.

implications

Traditional factors cease to matter:- patience, risk-aversion.

Agreements may be utilitarian inefficient.

Rents are dissipated through competition:

1. One-shot symmetry $\Rightarrow$ all players have expected payoff $= 0$.
2. Ordered $\Rightarrow$ players $2, \ldots, n$ have expected payoff of 0, while 1 has a payoff of

$$u_1(1) - c_1(c_2^{-1}(u_2(1))).$$

Theorem
Suppose the voting rule fails no veto power. Then in every SPE of the finite horizon and in every SSPE of the infinite horizon, at least $n - 2$ players obtain a payoff of 0.

If players are one-shot symmetric, then the first proposer captures the entire surplus.

One player may use her veto power to gain a higher utility.

Generally, unclear who.

Suppose utility is transferable, and players can be ordered in terms of score: for all $i < j$, and for all bids s, $c_i(s) < c_j(s)$.

Theorem

As $\Delta \to 0$, player 1's ex ante expected payoff $\to 1$ in every SSPE.

Logic: all but player 1 stop competing, so player 1 anticipates winning tomorrow at minimal effort.

extensions

perhaps not *all* of recognition sold; winner gains $\lambda \in [0, 1]$ advantage.

$\rightarrow$ comparative statics: $\lambda \uparrow \Rightarrow$ Inequality $\uparrow$ + Expenditures $\uparrow$.

other extensions

- Stochastic surplus:- immediate agreement (which is inefficient).
- Endogenous surplus:- in asymmetric settings, players lack incentive to produce surplus.
- History-dependent costs:- results extend to finite-horizon.
- FPA:- results apply (I prove analogous lemma for FPA).

conclusion

challenge for institutional design:

- selling bargaining power can generate inequality and inefficiency
- offers motive for constraining who gains agenda-setting power
- caution:- too many constraints → predictability.

  Ali, Bernheim, and Fan (2014) show that first proposer captures entire surplus when bargaining power is predictable.