On the optimal allocation of policy-making

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Question

- How should society allocate policy-making?

- Two institutional settings
  - Executive
  - Legislature

- Common view
  - Executive desirable because allows faster responses to shocks
  - Legislature has gridlock but better accountability

“In the legislature, promptitude of decision is oftener an evil than a benefit. The differences of opinion, and the jarrings of parties in that department of the government, though they may sometimes obstruct salutary plans, yet often promote deliberation and circumspection, and serve to check excesses in the majority.... They constantly counteract those qualities in the Executive which are the most necessary ingredients in its composition — vigor and expedition, and this without any counterbalancing good.”
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This paper

- Study optimal allocation of policy-making in setting with
  - Shocks to the benefit of policy (need for flexibility)
  - Policy-maker bias/Time-inconsistency (need for discipline)
  - Political polarization (undesirable political risk)

- Two institutional settings
  - **Delegation to Executive (DE)**: faction in power unilaterally chooses a policy from set
  - **Legislative Bargaining (LB)**: faction in power can bargain with opposition over policies outside set

- Critical difference: Ability to bargain ex-post

Main results

Optimal institution depends on the level of bias relative to polarization

- If bias is small relative to polarization, then LB preferred to DE
  - Under DE: trade-off between flexibility and political risk
  - Under LB: bargaining between factions moderates political risk and allows for more flexibility
  - Gridlock for small shocks but flexibility for large ones
- If bias is large relative to polarization, then DE preferred to LB
  - Want to limit flexibility granted as preferences very misaligned
  - DE can impose more discipline than LB because inability to bargain
  - Under DE: narrow mandate is optimal

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  - DE can impose more discipline than LB because inability to bargain
  - Under DE: narrow mandate is optimal
- Are narrow mandates credible?
  - No, if bias is exogenous
  - Yes, if bias arises from time-inconsistency problem

Related Literature

- Delegation and the tradeoff between discipline and discretion:
  - Amador et al. (2006); Amador and Bagwell (2013); Athey et al. (2005); Halac and Yared (2014, 2017, 2018, 2022)
- Legislative bargaining:
  - Baron and Ferejohn (1989); Ali et al. (2019)
  - Baron (1996); Kalandrakis (2004); Diermeier and Fong (2011); Bowen et al. (2014, 2017); Dziuda and Loeper (2016); Piguillem and Riboni (2018); Ali et al. (2023)
- Separation of powers between the executive and legislature:
  - Epstein and O'halloran (1999); Aranson et al. (1982); Rao (2015); McCubbins et al. (1987)
  - Callander and Krehbiel (2014); Volden (2002)
  - Aghion, Alesina, Trebbi (2004), Alesina and Tabellini (1990)

Outline

- Model
- Optimal DE
- Optimal LB
- Best institutional arrangement
- Time-inconsistency
- Credibility

Model

Environment

- Society must decide on policy π as a function of aggregate shock $z \in [\underline{z}, \overline{z}]$
- Population divided into two factions $\theta \in \{\theta_L, \theta_H\}$
  - Faction θ_i has share α^i
  - Preferences of faction θ's policymaker:

$$u(\pi, z, \theta) = -\frac{1}{2}(\pi - \theta - z)^2$$

  - $\Delta = \theta_H - \theta_L$: polarization between factions
- Societal welfare

$$v(\pi, z) = \sum_{i=L,H} \alpha^i u(\pi, z, \theta_i) + \overline{\nu}\pi$$

  - $\overline{\nu}$: policymaker bias
  - Captures differences between policy-makers and society

Benchmarks

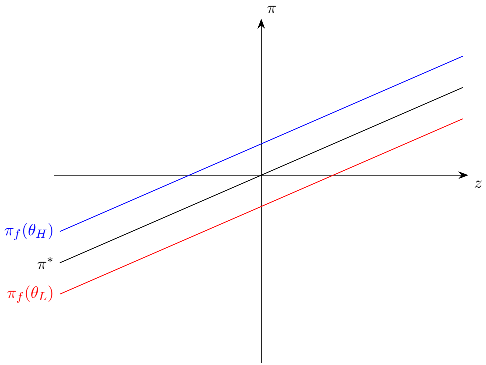
Preferred policies

- Policymaker of type θ: $\pi_f(z,\theta) = z + \theta$
- Society: $\pi^*(z) = z + \overline{\theta} + \overline{\nu}$ where $\overline{\theta} = \sum_i \alpha_i \theta_i$

The *best constant policy* solves

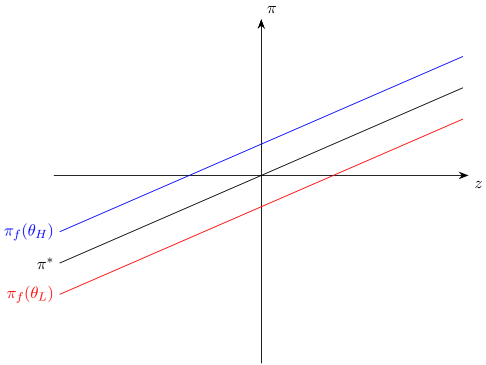
$$\bar{\pi}^* = \arg\max_{\pi} \int v(\pi, z) f(z) \, dz$$

Preferred policies



(a) Small bias

Preferred policies



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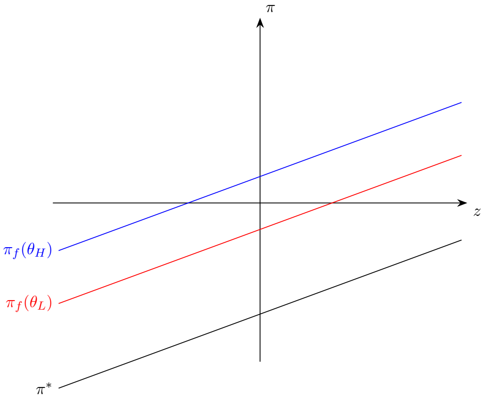
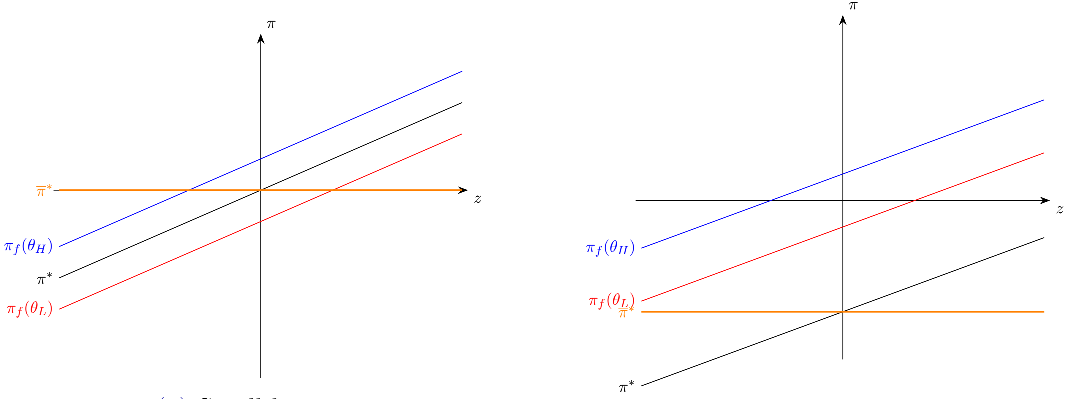


(b) Large bias

Best constant policy



(a) Small bias (b) Large bias

Two institutional settings

- Delegating to Executives (DE):
  - Faction i is in power with probability α_i
  - Executive representing faction in power chooses policy π from given set D

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  - Faction in power can unilaterally choose π from given set D (e.g. mandatory spending)
  - Can choose $\pi \notin D$ if the other faction agrees (e.g. discretionary spending)

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  - Can choose $\pi \notin D$ if the other faction agrees (e.g. discretionary spending)
- At consitutional stage, society chooses which institution and the set D

Delegating to Executives

Delegating to Executives

- Let $\pi_D(z, \theta)$ be the preferred unilateral choice from set D by type θ

$$\pi_D(z, \theta) \in \arg\max_{\pi \in D} u(\pi, z, \theta)$$

- Society chooses mandate D to maximize:

$$\max_{D \subseteq \mathbb{R}} \int_{\underline{z}}^{\overline{z}} [\alpha_L v(\pi(z, \theta_L), z) + \alpha_H v(\pi(z, \theta_H), z)] f(z) dz$$

subject to the incentive constraint

$$\pi(z, \theta) = \pi_D(z, \theta)$$

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- Equivalently, write it as mechanism design problem w/out transfers

$$\max_{\pi(\theta,z)} \int_{\underline{z}}^{\overline{z}} [\alpha_L v(\pi(z,\theta_L), z) + \alpha_H v(\pi(z,\theta_H), z)] f(z) dz$$

subject to the incentive constraint

$$u(\pi(z,\theta), z, \theta) \geq u(\pi(z',\theta'), z, \theta) \quad \forall z', \theta'$$

Optimality of interval delegation

Optimal delegation set is an interval with a potentially binding cap and floor

Proposition

Under a distributional assumption, the optimal delegation set is

$$D = [\pi_f(z_l, \theta_L), \pi_f(z_h, \theta_H)]$$

for some z_l, z_h.

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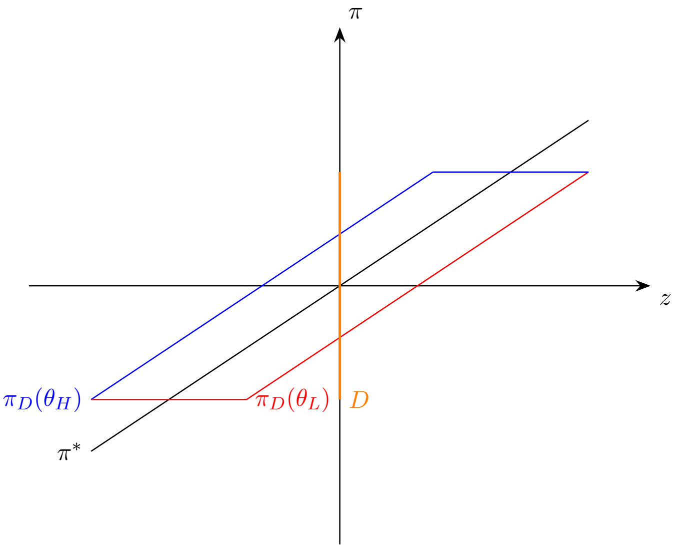
Proof has two steps

- Ramsey problem where D restricted to be interval
- Verify cannot improve it by more general mechanism

Optimality of interval delegation



How much flexibility to grant?

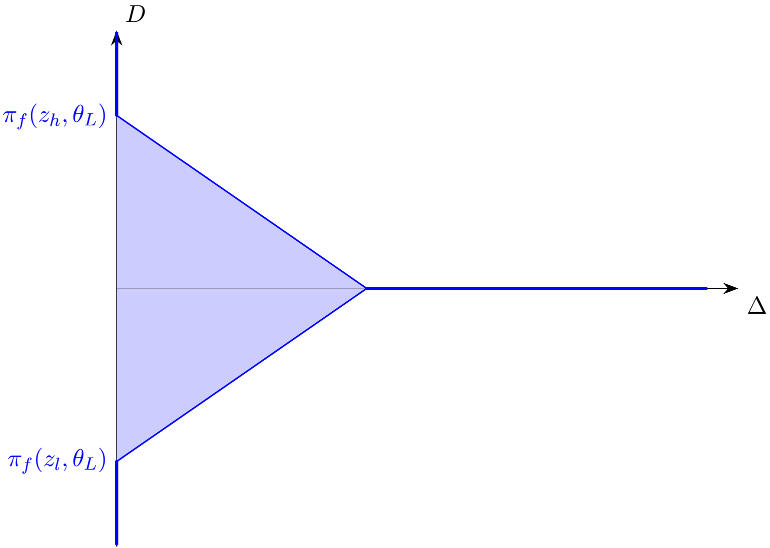
Flexibility is decreasing in the bias

- For any $\Delta \geq 0$, there is a threshold $\bar{\nu}(\Delta)$ such that for $|\bar{\nu}| \geq \bar{\nu}(\Delta)$, the delegated set is a single point
- If the densities f and κ are log-concave, the size of the delegated interval is decreasing in $|\bar{\nu}|$

Flexibility is decreasing in polarization

- For any $\bar{\nu}$, there is a threshold $\Delta(\bar{\nu})$ such that for $\Delta \geq \Delta(\bar{\nu})$, the delegated set is a single point
- Trade-off between flexbility and political risk

Little flexibility when polarization is high to avoid political risk



Legislative Bargaining

Legislative Bargaining

- Given D, faction θ in power can unilaterally choose

$$\pi_D(z,\theta) = \arg\max_{\pi \in D} u(\pi, z, \theta)$$

- Can also make a take-it-or-leave-it offer to the other faction θ_-

$$\pi_{LB}(z,\theta; D) = \arg\max_{\pi} u(\pi, z, \theta)$$

subject to

$$u(\pi, z, \theta_-) \geq u(\pi_D(z,\theta), z, \theta_-)$$

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- Optimal set D solves:

$$\max_{D \subseteq \mathbb{R}, \pi(z,\theta)} \int_{\underline{z}}^{\overline{z}} w(\pi(z,\theta_L), \pi(z,\theta_H), z) f(z) dz$$

subject to the incentive constraint

$$\pi(z,\theta) = \pi_{LB}(z,\theta; D)$$

Characterization of set D

Proposition

- *If* $\bar{\nu} \in [-\alpha_H \Delta, \alpha_L \Delta]$*, then* D *does not contain intervals,* $D = \{\pi_1, ..., \pi_N\}$*;*

- *Under distributional condition, if* $\bar{\nu} > \alpha_L \Delta$ *then* $\exists \tilde{\pi}$ *such that* D *does not contain intervals below* $\tilde{\pi}$ *and it grants full discretion above* $\tilde{\pi}$*, i.e.* $D = \{\ \pi_1, ..., \pi_N\} \cup [\tilde{\pi}, \pi_f(\bar{z}, \theta_H)]$

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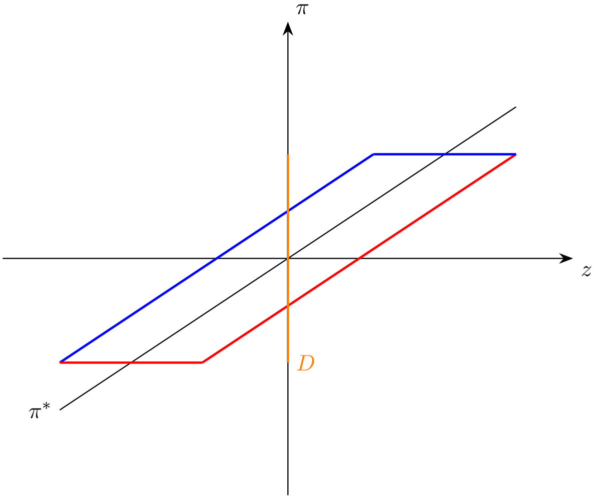
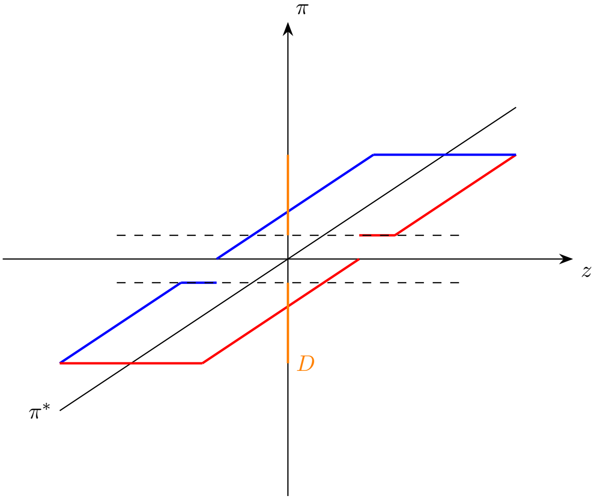
Sub-optimality of interval delegation

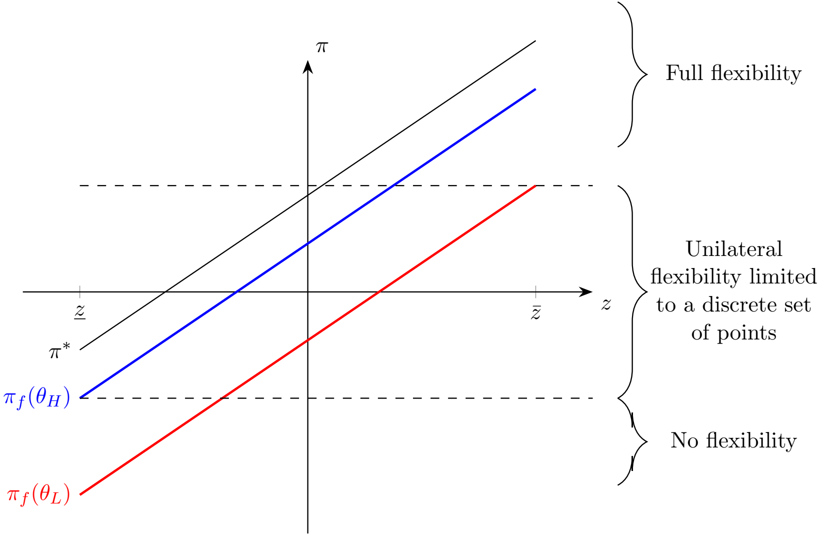


“Drilling a hole” is optimal

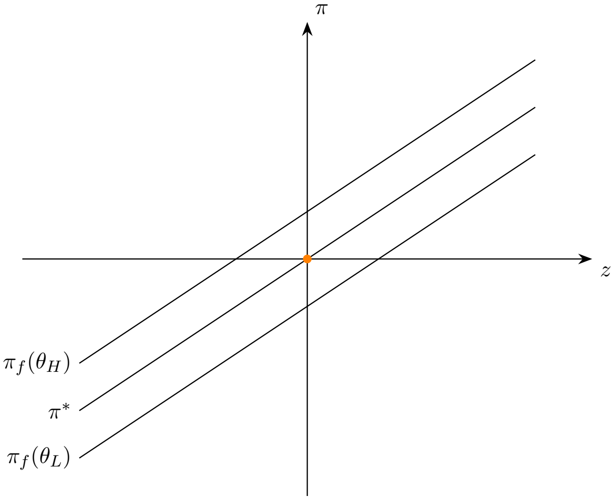


- Opposition has a stronger bargaining position → limits political risk

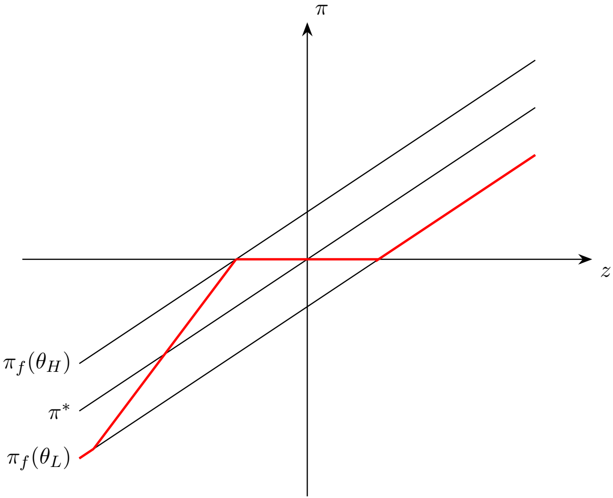
If $\bar{\nu} > \alpha_L \Delta$



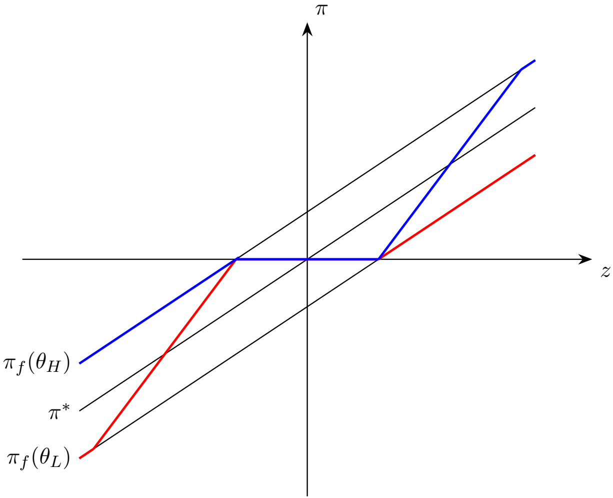
Typical outcome if $D = \{\pi_o\}$



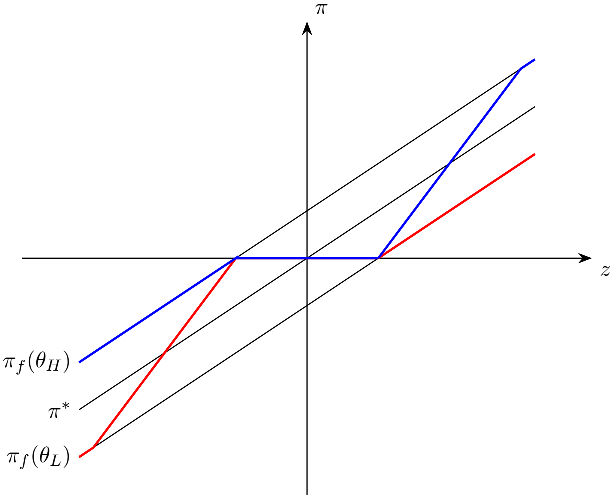
Typical outcome if θ_L in charge



Typical outcome if θ_H in charge

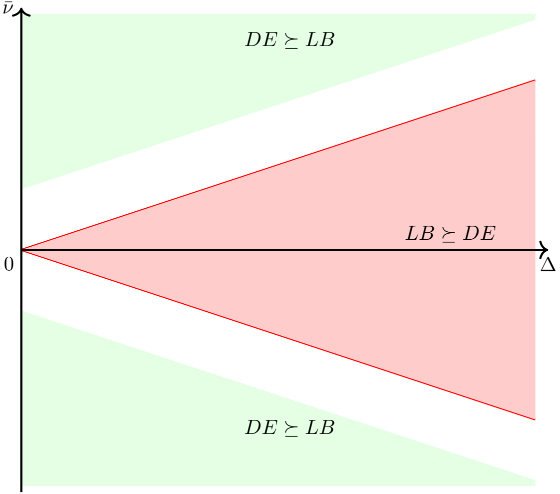


Inaction for small shocks but response to large shocks



Optimal allocation of policy-making

How should society allocate policy-making?



How should society allocate policy-making?

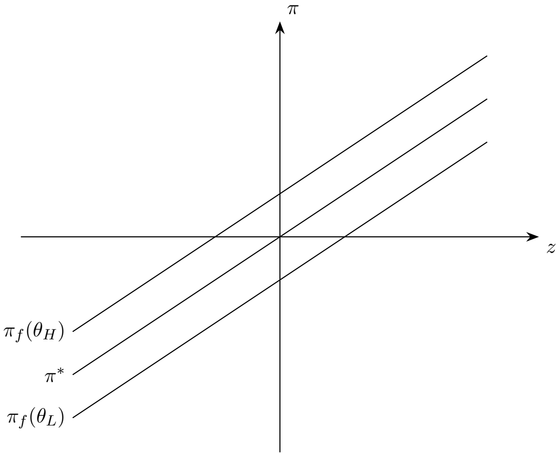
Proposition

- *If* $|\bar{\nu}|$ *is small relative to* Δ *then society prefers LB to DE*
- *If* $|\bar{\nu}|$ *is large relative to* Δ *then society prefers DE to LB*

Main idea:

- Bargaining allows for increased flexibility in policymaking
- Value of flexibility depends on bias relative to polarization

Small bias



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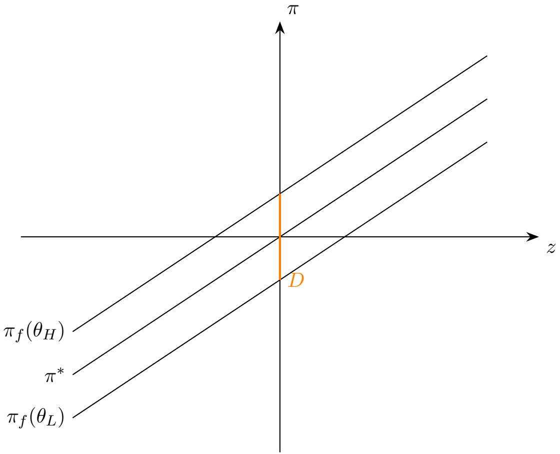

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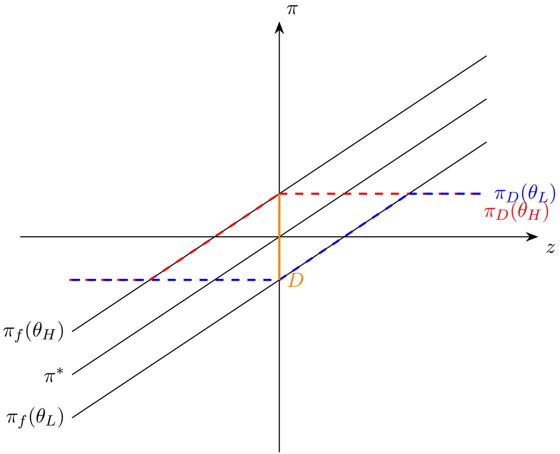
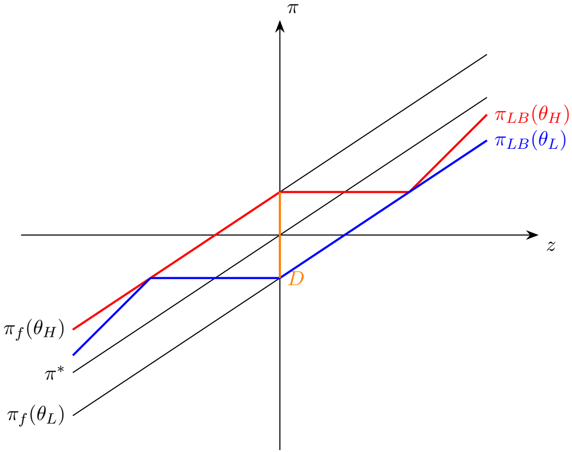
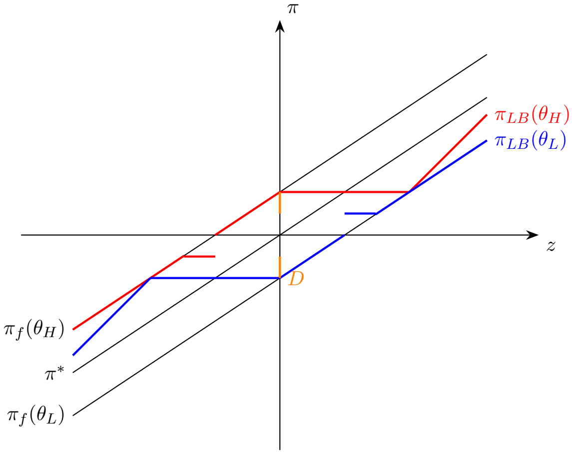


LB and ex-post inefficiency



LB and political risk



If bias small LB preferred to allow for flexibility

Under DE

- Trade-off between flexibility and political risk
- Allowing for more flexibility wrt z also implies undesirable flexibility wrt θ (political risk)

Under LB

- Bargaining between factions moderates political risk
- Renegotiated policy is closer to society's preferences
- Gridlock and inaction for intermediate z but flexibility for large shocks

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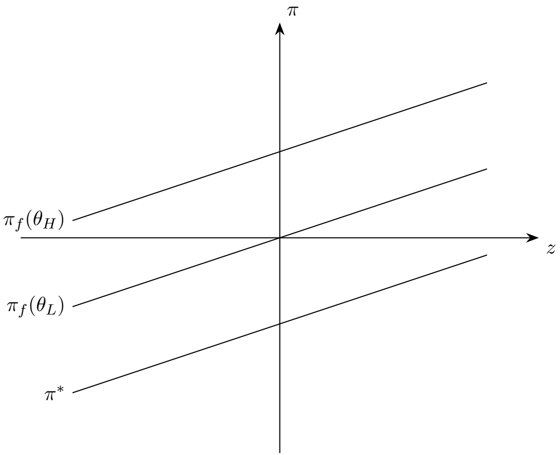
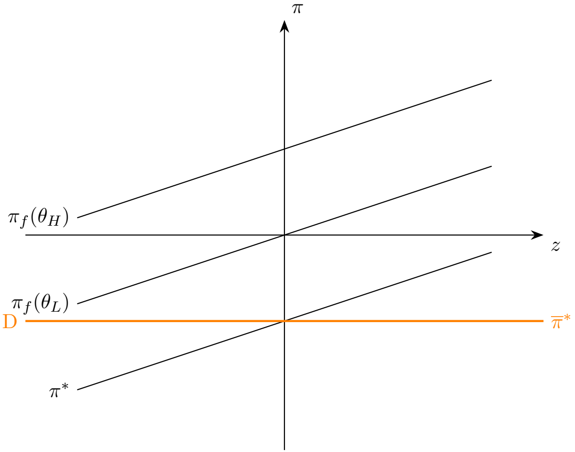
Large bias



Large bias



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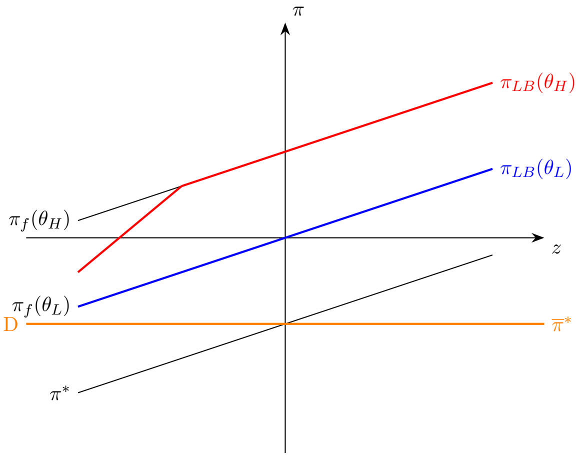


π
$\pi_{LB}(\theta_H)$
$\pi_{LB}(\theta_L)$
$\pi_f(\theta_H)$
z
$\pi_f(\theta_L)$
D
$\overline{\pi}^*$
π^*

If bias large DE preferred to limit flexibility

- Preferences of society and (average) policymakers are severely misaligned

- Society would like to limit the flexibility granted

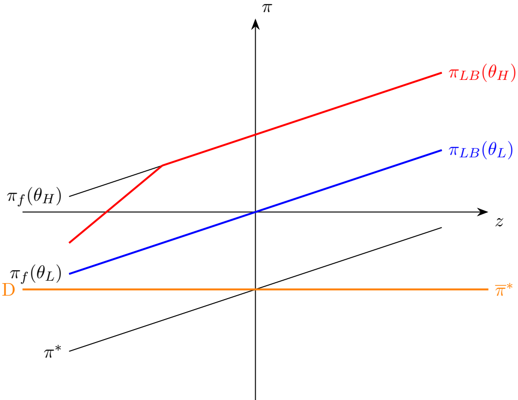
- Under LB:
  - Cannot limit flexibility
  - Policymakers can renegotiate policies outside D

- Under DE:
  - Can limit policymakers' flexibility by imposing a narrow mandate
  - Delegating a single point equal to best constant policy

Optimality of narrow mandate

Proposition

If the bias is sufficiently large relative to the polarization, then it is optimal to leave no flexibility to executives and have a narrow mandate at the best constant policy $D = \{\bar{\pi}^*\}$.



Take-aways

- Results strongly caution against delegating b/c of gridlocks in Congress
  - E.g. environmental policy
  - Delegation to executive agencies lead to political risk
- When delegation to executive agencies narrow mandate is optimal
  - Chevron doctrine
  - Central bank mandates
- Predictions on how policies respond to shocks
  - Fiscal vs. monetary policy

Time-inconsistency and the bias

Bias arises endogenously due to time-inconsistency

Policy-game as Kydland and Prescott (1977), Barro and Gordon (1983), Athey, Atkeson, and Kehoe (2005)

- Aggregate shock z, preference θ
- Price setters set sticky price

$$x = \sum_i \alpha^i \int \pi(z, \theta_i) f(z) dz$$

- Government chooses policy π to maximize

$$R(x, \pi, z, \theta) = -\frac{1}{2}\left[(U + x - \pi)^2 + (\pi - z - \theta)^2\right].$$

  - $U > 0$ parametrerizes severity of time-inconsistency problem

DE problem

$$\max_{D,\pi(z,\theta),x} \sum_i \sum_j \alpha_i \alpha^j \int R(x, \pi(z, \theta_j), z, \theta_i) f(z) dz$$

subject to the incentive compatibility constraint for all θ

$$\pi(z, \theta) = \arg\max_{\pi \in D} R(x, \pi, z, \theta)$$

and the implementability constraint

$$x = \sum_i \alpha^i \int \pi(z, \theta_i) f(z) dz$$

DE problem

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and the implementability constraint

$$x = \sum_i \alpha^i \int \pi(z, \theta_i) f(z) dz$$

- Let λ be multiplier on the implementability constraint
- As if society had a bias with preferences

$$R\left(x, \pi(z), z, \bar{\theta}\right) - \lambda \pi(z).$$

- Bias is endogenous to the allocation

LB problem

$$\max_{D,\pi(z,\theta),x} \sum_i \sum_j \alpha_i \alpha^j \int R(x, \pi(z, \theta_j), z, \theta_i) f(z) dz$$

subject to the incentive compatibility constraint for all θ

$$\pi\left(z, \theta\right) = \arg\max_{\pi} R\left(x, \pi, z, \theta\right) \text{ s.t. } R(x, \pi, z, \theta_-) \geq R(x, \pi_D(x, z, \theta), z, \theta_-)$$

and the implementability constraint

$$x = \sum_i \alpha^i \int \pi(z, \theta_i) f(z) dz$$

How should society allocate policy-making?

Proposition

For any $\Delta > 0$, *there exist thresholds* $U_L(\Delta), U_H(\Delta)$ *such that*

- *If* $U < U_L(\Delta)$ *then society weakly prefers LB to DE*
- *If* $U > U_H(\Delta)$ *then society prefers DE to LB and a narrow mandate is optimal*
- *If* $\Delta = 0$, *society prefers DE to LB*

Similar logic as exogenous bias case

Credibility

Credibility

- In practice, Congress chooses institutional arrangement
  - E.g. Congress can change central bank's mandate

- An institutional arrangement is $i \in \{DE, LB\}$ and a delegated set D

- Let $V^i_{\hat{\theta}}(D, \theta)$ be expected value to faction $\hat{\theta}$ of having faction θ set the policy

- Institutional arrangement is *credible* if policy-makers cannot agree to change it

$$V^i_\theta(D, \theta) \geq \max_{j, \hat{D}} \left\{ V^j_\theta(\hat{D}, \theta) \;\middle|\; V^j_{\hat{\theta}}(\hat{D}, \theta) \geq V^i_{\hat{\theta}}(D, \theta) \right\} \quad \text{for all } \theta$$

Credibility when DE preferred

If DE preferred because of large exogenous bias $\Rightarrow$ narrow mandate not credible

Proposition

Suppose $|\bar{\nu}| > \bar{\nu}_H(\Delta)$ *so that DE is preferred to LB. Then DE is not credible.*

If DE preferred because of large time-inconsistency $\Rightarrow$ narrow mandate credible

Proposition

For all Δ*, there exists* $\bar{U}_H \geq U_H(\Delta)$ *such that for all* $U \geq \bar{U}_H$ *DE is preferred to LB and the optimal DE outcome is a credible narrow mandate at the constant Ramsey policy.*

- Evaluating credibility *before* x is chosen

Credibility when LB preferred

Assume the bias is exogenous and it is optimal to have $D = \{\pi_o\}$

Proposition

LB is always credible

- If faction in power needs approval from the opposing faction
- Then Congress will never choose to delegate policy-making

Conclusion

- Study allocation of policy-making between two institutional arrangements
  - Legislative bargaining (LB)
  - Delegation to executives (DE)

- LB desirable when polarization is large relative to the bias/time-inconsistency because it allows to respond to large shocks while limiting political risk

- DE desirable when bias/time-inconsistency is large relative to the polarization because it allows to grant little flexibility by imposing narrow mandates

Appendix

Proof of Proposition 1

Prove the result in two steps

1. Consider a Ramsey problem in which D is restricted to be an interval
   - Characterize optimal cap and floor
2. Show under distributional assumptions more general mechanisms not optimal
   - Two-dimensional private information

Step 1: Ramsey problem

Let

- $K(z) \equiv \alpha_L F(z) + \alpha_H F(z - \Delta)$
- $\kappa(z) \equiv \alpha_L f(z) + \alpha_H f(z - \Delta)$
- $d(z) \equiv \alpha_L \alpha_H f(z) - \alpha_H \alpha_L f(z - \Delta)$
- $d_h(z_h^*) \equiv -\frac{\int_{z_h^*}^{\bar{z}+\Delta} d(z)\mathrm{d}z}{1-K(z_h^*)}$

Any interior cap must satisfy

$$\underbrace{\Delta \cdot d_h(z_h^*)}_{\text{disagreement over cap}} - \underbrace{\bar{\nu}}_{\text{bias}} = \underbrace{E_\kappa[z|z \geq z_h^*] - z_h^*}_{\text{loss of discretion}}$$

Step 2: Verification

Characterizing IC: an allocation is IC iff

1. Envelope condition

$$u(\pi_i(z), z, \theta_i) = u(\pi_i(\underline{z}), \underline{z}, \theta_i) + \int_{\underline{z}}^{z} \pi_i(x)dx$$

2. Monotonicity

$$\pi_i(z) \text{ is non-decreasing}$$

3. Integrability condition

$$\pi_H(z) = \pi_L(z + \Delta)$$

Step 2: Verification, cont.

- Key step: show suboptimal to have two disconnected intervals
- Disconnecting the interval will result in
  - some types bunching at policies below their preferred one
  - others will bunch at policies above their preferred one
- Bunching will introduce costs at one end and benefits at other
- Distributional assumptions guarantee that costs outweigh benefits

Distributional assumption

$$E_\kappa\left[\hat{z}|\hat{z} \geq z\right] - z + \bar{\nu} \leq \left(E_\kappa\left[\hat{z}|\hat{z} \geq z_h^*\right] - z_h^* + \bar{\nu}\right)\frac{d_h(z)}{d_h(z_h^*)}$$

Guarantees bunching at the cap is optimal

$$z - E_\kappa[\hat{z}|\hat{z} \leq z] - \bar{\nu} \leq \left(z_l^* - E_\kappa[\hat{z}|\hat{z} \leq z_l^*] - \bar{\nu}\right)\frac{d_l(z)}{d_l(z_l^*)}$$

Guarantees bunching at the cap is optimal

$$\Delta\frac{d'(z)}{\kappa(z)} + \bar{\nu}\frac{\kappa'(z)}{\kappa(z)} \leq 1$$

Guarantees that granting discretion between the cap and the floor is optimal ◂ Back

Proof of Proposition 2

Suppose low type in power

- Suppose the delegation set contains an interval $[\pi_f(z_l, \theta_L), \pi_f(z_H, \theta_L)]$
- Suppose we disconnect the set $[\pi_f(z_l, \theta_L), \hat{\pi} - \varepsilon] \cup [\hat{\pi} + \varepsilon, \pi_f(z_H, \theta_L)]$
- Low type cannot implement pref policy in $(\hat{\pi} - \varepsilon, \hat{\pi} + \varepsilon)$
- Implemented policy achieved via bargaining: pushes policy in direction of high type
- Valuable for society if

$$\frac{\alpha^L f(z)}{\alpha^H f(z - \Delta)} \geq \frac{(\bar{\nu} - \alpha_L \Delta)}{(\bar{\nu} + \alpha_H \Delta)}$$

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