A Political Economy of International Organizations

Agency, Influence, and Expertise

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International Organization Design and Operation

- Day-to-day operation of IO
  - think World Bank
- Formation and Evolution

"Why should weak states participate in an arrangement skewed towards the interests of the strong, and why should secondary powers tolerate an arrangement that disproportionately favors the leader of the system?" (Stone 2011, p16)

To accord voting power strictly proportionate to the value of the subscription would give the one or two powers control over the Fund. To do that would destroy the truly international character of the Fund, and seriously jeopardize its success. Indeed it is very doubtful if many countries would be willing to participate in an international organization with wide powers if one or two countries were able to control its policies. Harry Dexter White

Problem: Members, a Hegemon and an IO with Agency

- IO/Agency – A
  - Bureaucratic/budgetary interests
- Hegemon – H
  - Geopolitical interests, ω
- Members – $i = 1, \ldots, M$
  - Developmental interests, θ

Findings

1. Mix of "political" and "developmental" projects are funded
2. IO "shades" recommendations to accommodate *H*'s interests
3. Vote Shares α; Cost Shares, κ; Expertise, δ_A
   - H can want to pay more!
   - Member can want to cede power
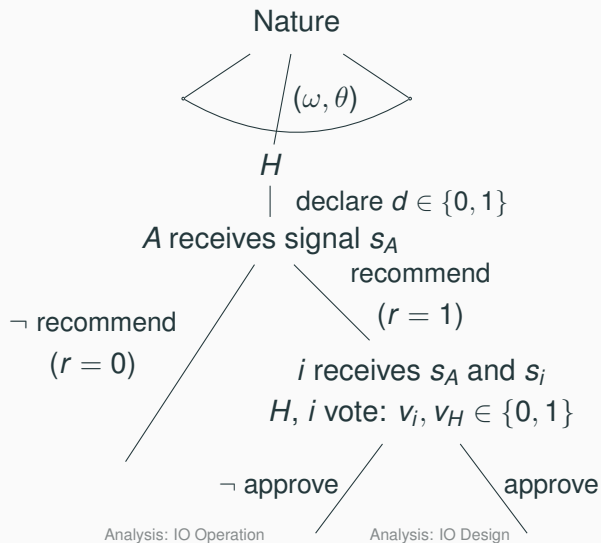   - Expertise can undermine H's participation

Model: Basics

- development value, θ
- political value, ω

Sequence:

1. Nature determines political value ω and developmental value θ.
2. H declares vote intention $d \in \{0, 1\}$.
3. A and i get signals of θ, s_i, s_A.
4. A recommends project or not, $r \in \{0, 1\}$.
   - If $r = 0$: game ends.
   - If $r = 1$:
     5 . A makes signal s_A public.
     6 . H, members vote, $v_H \in \{0, 1\}$ and $v_i \in \{0, 1\}$.

Nature

(ω, θ)

H

declare $d \in \{0, 1\}$

A receives signal s_A

recommend

$(r = 1)$

$\neg$ recommend

$(r = 0)$

i receives s_A and s_i

H, i vote: $v_i, v_H \in \{0, 1\}$

$\neg$ approve

approve

Features of the Institution: Vote Share, α

- Project funded if

$$\underbrace{\alpha v_H}_{\text{H's vote}} + \underbrace{\frac{(1-\alpha)}{M} \sum_{i=1}^{M} v_i}_{\text{i's votes}} \geq \frac{1}{2}$$

1. If H supports, need $\frac{1-2\alpha}{2-2\alpha}$ of Members
2. Without H, need $\frac{1}{2-2\alpha}$ of Members

Payoffs and Logic

1. H votes YES if $\omega \geq (1 - \kappa)$

2. Member votes Yes if $E[\theta] \geq \frac{\kappa\gamma}{M}$

3. $E[\theta]$: weighted sum of signals, s_i and s_A

4. Agency is bureaucrat:
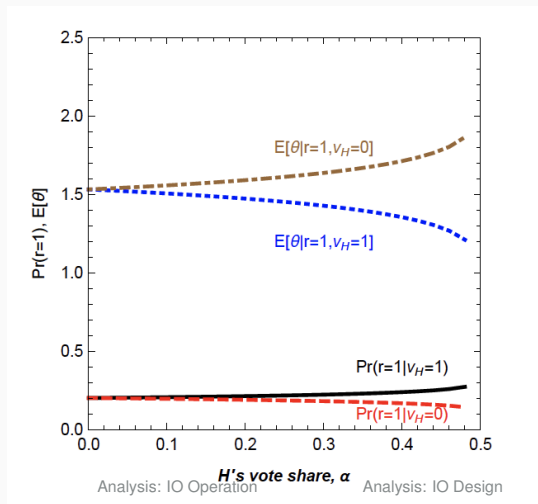
- Recommends if $Pr(funded) \geq \frac{c+\rho}{\psi+\rho}$

ψ	bureaucratic value
c	administrative cost
ρ	rejection cost
κ	members' cost share
γ	members' financial capacity

Intuition

1. A sees s_A

- $E[\theta]$ increasing in s_A
- High $E[\theta] \implies$ likely high member signals $\implies$ many member votes
- A recommend if $s_A \geq s_1^*$ if H supports
- A recommend if $s_A \geq s_0^*$ if H opposes

    - $s_1^* < s_0^*$

    - $Pr(\text{A recommends}|\text{H supports}) > Pr(\text{A recommends}|\text{H oppose})$

    - $E[\theta|\text{H supports}] < E[\theta|\text{H opposes}]$

- A shades recommendation

Preliminary Evidence Model Analysis: IO Operation Analysis: IO Design Conclusion Appendix

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Comparative Statics: Vote share, α

As *H*'s vote share rises, more political projects

**Comparative statics: cost share,** κ

As *H*'s cost share falls (i.e. as κ rises):
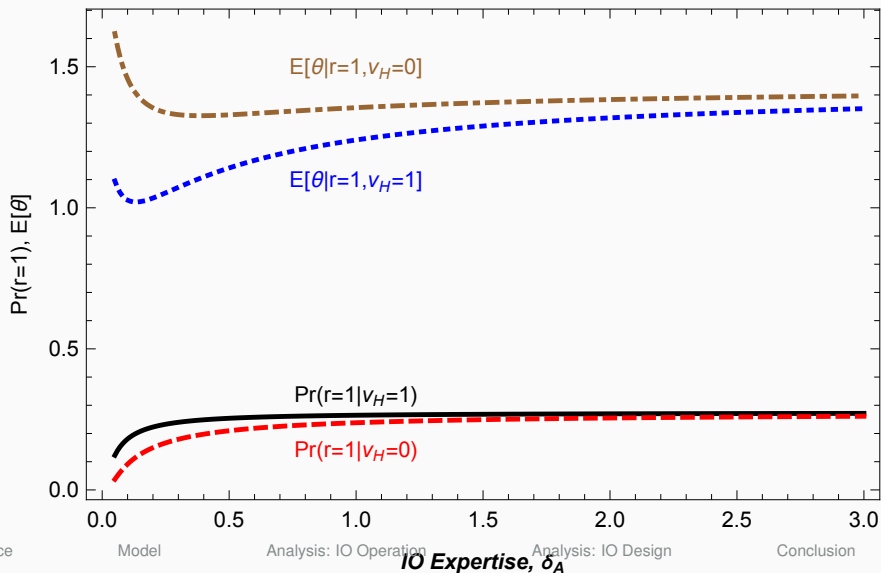
- Members are less willing to vote in favor of projects: $\frac{d\widehat{s_i(s_A)}}{d\kappa} > 0$

    - Members require a stronger signal

- Agency is less willing to recommend

- Everyone might want H to pay more!

Comparative Static: Agency Expertise

- A's signal more influential

- As $\delta_A \to \infty$, H's vote share worthless

- A recommends if $s_A > \frac{\kappa\gamma}{M}$

- Hegemonic Influence Declines with Expertise

IO Formation and Evolution
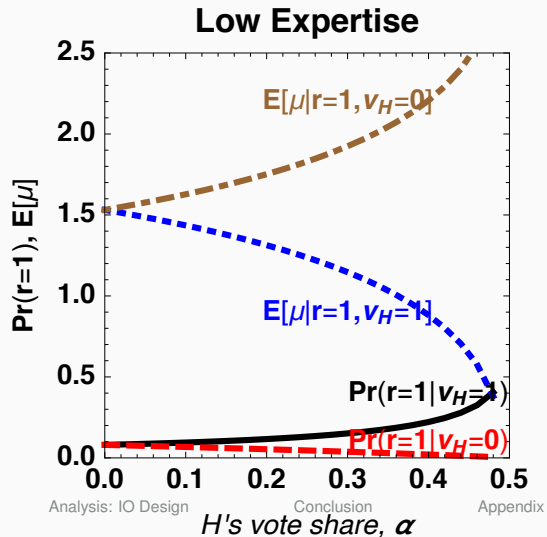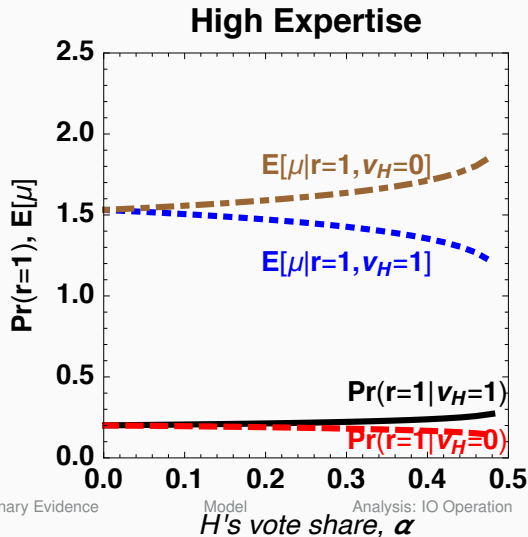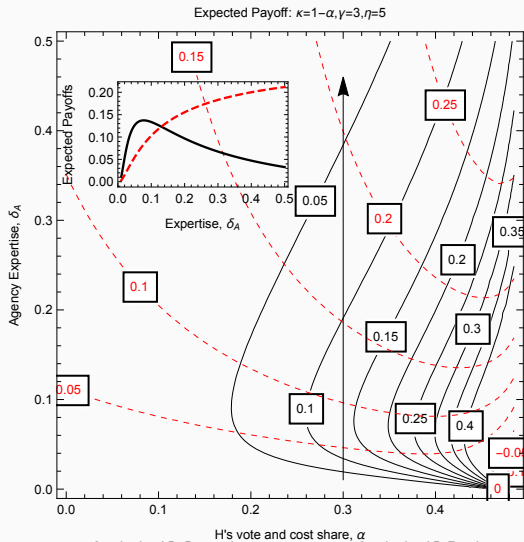
- Bretton Wood: US had all money and influence
    - H proposes α, κ
        - Expertise limited by low knowledge

    - M agree only if

        - H pays

        - Not too much hegemonic power

        - IO has expertise

    - H max vote share subject to M agreement

Expected Payoff: $\kappa=1-\alpha, \gamma=3, \eta=5$

Evolution

- World has changed since 1944

    - Members richer
        - Trade cost for influence: $\alpha \downarrow$, $\kappa \uparrow$

    - Cold War over, $|\omega|$ smaller
        - Influence less important to H: $\alpha \downarrow$, $\kappa \uparrow$

Evolution

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  - Cold War over, $|\omega|$ smaller
    - Influence less important to H: $\alpha \downarrow$, $\kappa \uparrow$

- Development Economics Improved
  - Expertise, $\delta_A \uparrow$

    - Reduces H's influence (α less important)
    - Member satisfaction $\uparrow$
    - Hegemon satisfaction $\downarrow$

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Conclusions

- Operation, Formation and Evolution of IO

  - Competing motives
    - Agency is bureaucrat
    - Member want development
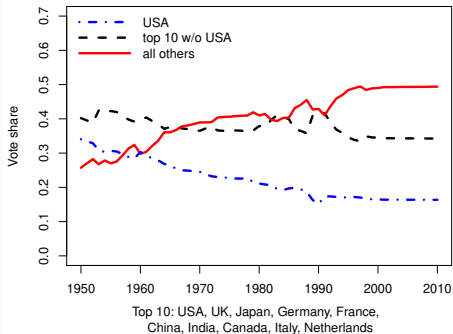   - H wants political projects

Conclusions

- Operation, Formation and Evolution of IO

  - Competing motives
    - Agency is bureaucrat
    - Member want development
    - H wants political projects
- Equilibrium
  - A shades recommendation
  - Comparative statics: novel predictions
    - Everyone wants H to pay
    - Members want to cede power
    - Expertise undermines influence
- Formation and Evolution
  - US declining satisfaction
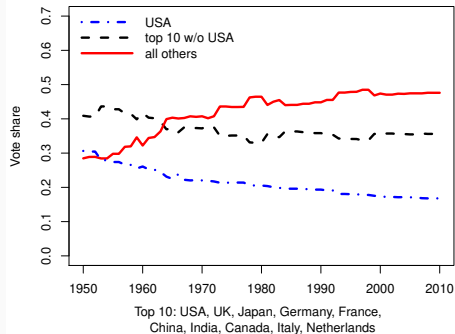 - US incentive to limit expertise.
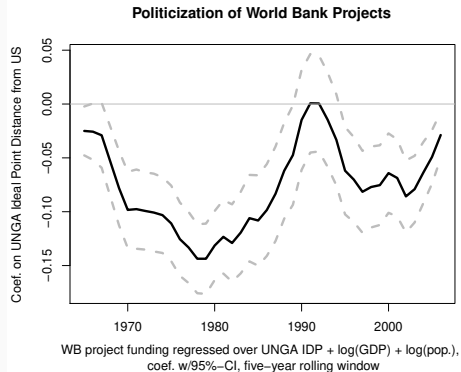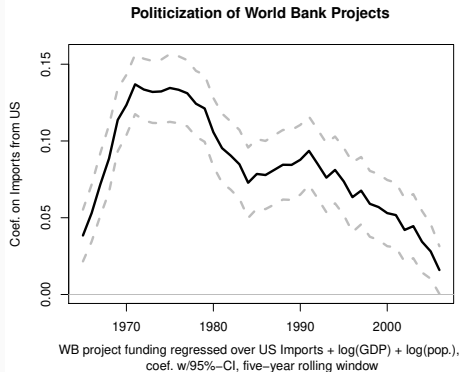
Preliminary Evidence

IBRD Vote Shares, 1950–2010

Vote share

- USA
- top 10 w/o USA
- all others

Top 10: USA, UK, Japan, Germany, France,
China, India, Canada, Italy, Netherlands

IMF Vote Shares, 1950–2010

Vote share

- USA
- top 10 w/o USA
- all others

Top 10: USA, UK, Japan, Germany, France,
China, India, Canada, Italy, Netherlands

Politicization of WB Projects

Politicization of World Bank Projects

WB project funding regressed over US Imports + log(GDP) + log(pop.),
coef. w/95%–CI, five–year rolling window

Politicization of World Bank Projects

WB project funding regressed over UNGA IDP + log(GDP) + log(pop.),
coef. w/95%–CI, five–year rolling window

- Powerful states influence IO decisions
    - Formally – larger vote shares
    - Informally – IO policies "reflect" interests of the powerful states

What are the conditions for an incentive-compatible IO that permits both major power influence and voluntary participation by the membership?

"Why should weak states participate in an arrangement skewed towards the interests of the strong, and why should secondary powers tolerate an arrangement that disproportionately favors the leader of the system?" (Stone 2011, p16)

Explaining IO Design: Starting Point

- Key design elements - exogenous variables
  - Voting Rules
  - Contribution shares
  - IO expertise

What are the key relationships among these exogenous variables that sustain international cooperation?

How have these relationships shifted over time – putting strains on IO stability?

Empirical Referent: The World Bank/IBRD

- Member states pay in to Bank capital
    - Vote shares $\approx$ proportional to capital shares
- "Project teams" identify and evaluate potential projects
- Bring to Board of Directors for approval
    - 25 Executive Directors, elected periodically from 189 member states
- Board votes on project approval
    - Typically unanimous
    - But "in the shadow" of vote shares

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1. Mix of "political" and "developmental" projects are funded
2. IO "shades" recommendations to accommodate *H*'s interests
3. *H* benefits from larger vote share – but benefit declines with IO expertise
4. Incentive compatibility $\implies$ limited IO expertise
5. Members may want to cede vote share to *H*

Model

Model: $M + 2$ Players

- IO – Agency *A*
    - Bureaucratic concerns
        - Wants to fund all projects
        - Costly if it recommends projects that membership votes down
        - Has expertise δ_A
- Hegemon – *H*
    - Political concerns
        - Wants political projects, of value ω
- Members, $i = 1 \ldots M$
   - Developmental concerns: project value θ
    - Many "small" members

Model: Basics

State variables: a project $(\theta, \omega) \in \mathbb{R}^2$:

- development value, θ
- political value, ω

Sequence:

1. Nature determines political value ω and developmental value θ.

2. *H* learns ω and declares vote intention $d \in \{0, 1\}$.

3. *A* and *i* get signals of θ, s_i, s_A.

4. *A* recommends project or not, $r \in \{0, 1\}$.

- If $r = 0$: game ends.
- If $r = 1$:
    - **5** . *A* makes signal s_A public.
    - **6** . *H*, members vote, $v_H \in \{0, 1\}$ and $v_i \in \{0, 1\}$.

Features of the Institution
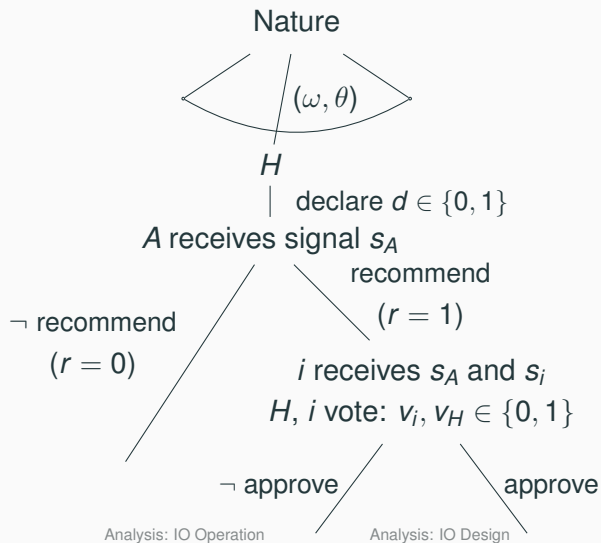
- α: *H*'s vote share
- Fund project if

$$\underbrace{\alpha v_H}_{\text{H's vote}} + \underbrace{\frac{(1 - \alpha)}{M} \sum_{i=1}^{M} v_i}_{\text{i's votes}} \geq \frac{1}{2}$$

Payoffs

$$U_H(v_H|\omega) = \begin{cases} \omega - (1 - \kappa) & \text{if funded} \\ 0 & \textit{otherwise} \end{cases}$$

$$U_A(r|s_A) = \begin{cases} r(\psi - c) & \text{if funded} \\ r(-c - \rho) & \textit{otherwise} \end{cases}$$

$$U_i(v_i|s_i, s_A) = \begin{cases} \theta - \frac{\kappa\gamma}{M} & \text{if funded} \\ 0 & \textit{otherwise} \end{cases}$$

ψ	bureaucratic value
c	administrative cost
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A PB equilibrium is a set of strategies (d, v_H, r, v_i) for $i = 1 \ldots M$ and beliefs.

Analysis: IO Operation

Signals and Learning: *H*

- Nature chooses ω (political value)

- *H* learns ω perfectly

- *H* declares and votes Yes ($d = v_H = 1$) if $\underbrace{\omega}_{\text{political value}} \geq \underbrace{1 - \kappa}_{H\text{'s cost}}$

Signals and Learning: *A* and *i*

- Noisy signals of development value
    - Nature chooses $\theta \sim N\left(\mu, \frac{1}{\delta}\right)$
    - *A* sees $s_A \sim N\left(\theta, \frac{1}{\delta_A}\right)$ which *A* announces whenever it recommends
    - *i* sees $s_i \sim N\left(\theta, \frac{1}{\delta_m}\right)$
- If *A* recommends then
    - $E[\theta|s_A] = \frac{\delta\mu + \delta_A s_A}{\delta + \delta_A}$ for *A*,
    - $E[\theta|s_i, s_A] = \frac{\delta\mu + \delta_m s_i + \delta_A s_A}{\delta + \delta_m + \delta_A}$ for all *i*.

Member's decision

Assumption
M is large and the members vote sincerely.

- If *A* recommends then for *i*
    - $E[\theta|s_i, s_A] = \frac{\delta\mu + \delta_m s_i + \delta_A s_A}{\delta + \delta_m + \delta_A}$ for all *i*.
- Member *i*'s decision
    - *i* votes Yes ($v_i = 1$) if $\underbrace{E[\theta|s_i, s_A]}_{\text{E[dev.val]}} \geq \underbrace{\frac{\kappa\gamma}{M}}_{\text{\textit{i}'s share of cost}}$
    - Define $\widehat{s_i(s_A)}$ where $E[\theta|\widehat{s_i}, s_A] = \frac{\kappa\gamma}{M}$
- *i* votes Yes ($v_i = 1$) if $s_i \geq \widehat{s_i(s_A)}$

A's Decision

- *A* recommends iff $Pr(\text{funded}) \geq \frac{c+\rho}{\psi+\rho}$
  - ψ bureaucratic value of extra project
  - *c* cost of report
  - ρ rejection cost

A's decision

- *A* cares only whether projects get funded.
- Projects get funded one of two ways
  - With *H*'s support
  - Without *H*'s support
- *A* chooses Y/N, and if yes, reports its signal s_A
- So *A* will recommend if s_A is high enough.
  - Two thresholds for s_A
  - One for when *H* declares and votes in favor, s_1^*
  - One for when *H* declares and votes against, s_0^*

Expected Support for Project

- Recall i votes Yes iff $E[\theta|s_i, s_A] \geq \frac{\kappa\gamma}{M}$
- If A gets a good signal of the quality – higher s_A
  - i is more likely to vote in favor
  - $\widehat{s_i(s_A)}$ *decreases* in s_A

Agency's behavior

- If *H* supports:
  - Need $\frac{1-\beta\alpha}{\beta(1-\alpha)} M$ members to vote Yes
  - Relatively fewer yes votes from membership
  - So *A* sets a low threshold for recommending

- If *H* opposes:
  - Need $\frac{1}{\beta(1-\alpha)} M$ members to vote Yes
  - Need more support from members
  - Critical signal threshold higher: $s_0^* > s_1^*$

Equilibrium Path

On equil. path,

1. H supports if $\omega \geq 1 - \kappa$, then A recommends if $s_A \geq s_1^*$.

2. H opposes if $\omega < 1 - \kappa$, then A recommends if $s_A \geq s_0^*$.

Proposition: Perfect Bayesian Equilibrium

- H declares and votes truthfully:
    - $d = v_H = 1$ if $\omega \geq (1 - \kappa)$
    - $d = v_H = 0$ otherwise
- Given H's declaration d, A recommends the project ($r = 1$) if $s_A \geq s_d^*$, and otherwise does not recommend ($r = 0$). That is,
    - if $d = 1$, then $r = 1$ if $s_A \geq s_1^*$
    - if $d = 0$, then $r = 1$ if $s_A \geq s_0^*$
    - otherwise $r = 0$.
- Members vote
    - $v_i = 1$ if $s_i \geq \widehat{s_i(s_A)}$
    - $v_i = 0$ otherwise.
- Agency's and members' beliefs: $E[\theta | s_A] = \frac{\delta\mu + \delta_A s_A}{\delta + \delta_A}$ for A, and $E[\theta | s_i, s_A] = \frac{\delta\mu + \delta_m s_i + \delta_A s_A}{\delta + \delta_m + \delta_A}$ for all i.

In Equilibrium: Both Political and Developmental Projects are Funded

1. Both political and developmental projects get funded in equilibrium
2. The projects that the agency recommends are of
   - higher developmental value, $E[\theta|r = 1] > E[\theta|r = 0]$,
   - and higher political value, $E[\omega|r = 1] > E[\omega|r = 0]$,
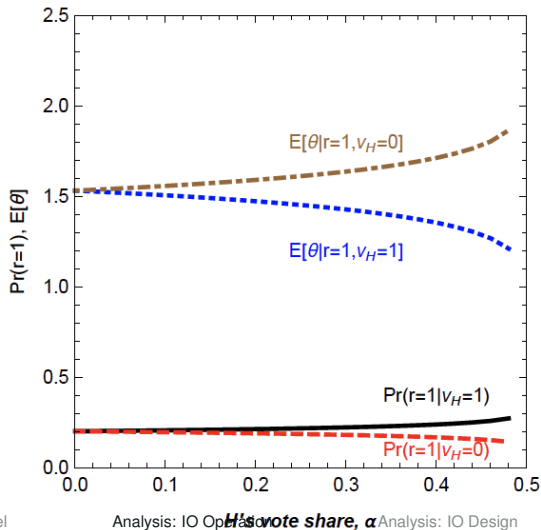   - than the projects it does not recommend.

In Equilibrium: Agency "shades" its recommendations

3. The agency is more likely to recommend a project the hegemon supports:
$Pr(r = 1|v_H = 1) > Pr(r = 1|v_H = 0)$

4. But expected developmental value of these recommended projects is lower:
$E[\theta|r = 1, v_H = 1] < E[\theta|r = 1, v_H = 0]$.

Recommendations are "biased"; members know this in equilibrium

In Equilibrium:

5. Among projects that get funded, those which the hegemon supports will be of lower developmental value than those which the hegemon opposes:
$E[\theta|funded, v_H = 1] < E[\theta|funded, v_H = 0]$.

Project values and recommendations in Equilibrium
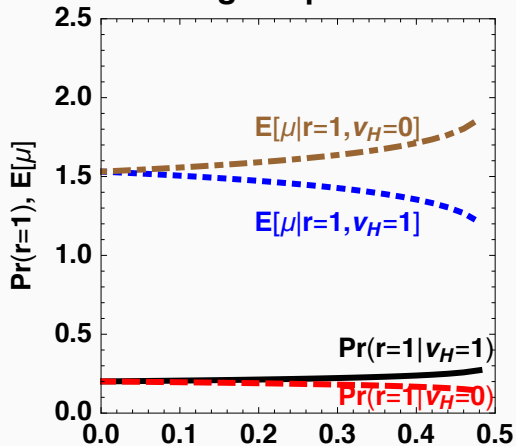
Comparative statics: cost share, κ

As *H*'s cost share falls (i.e. as κ rises):

- Members are less willing to vote in favor of projects: $\frac{d\widehat{s_i(s_A)}}{d\kappa} > 0$
  - Members require a stronger signal

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- Members are less willing to vote in favor of projects: $\frac{d\widehat{s_i(s_A)}}{d\kappa} > 0$
    - Members require a stronger signal
- Agency is less willing to recommend $\frac{ds_0^*}{d\kappa} = \frac{ds_1^*}{d\kappa} > 0$,
    - Agency needs to see a higher signal

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- Members are less willing to vote in favor of projects: $\frac{d\widehat{s_i(s_A)}}{d\kappa} > 0$
  - Members require a stronger signal
- Agency is less willing to recommend $\frac{ds_0^*}{d\kappa} = \frac{ds_1^*}{d\kappa} > 0$,
  - Agency needs to see a higher signal
- Shifting the costs to the members reduces the likelihood of recommending any project, irrespective of the hegemon's support.
  - $\frac{dPr[r=1|v_H=1]}{d\kappa} < 0$, $\frac{d\Pr[r=1|v_H=0]}{d\kappa} < 0$
- The members like spending the hegemon's money; if they bear a larger burden, they are more risk averse about their own contributions.

Comparative Statics: Vote share, α

As H's vote share α rises, A becomes more willing to recommend hegemon-supported projects, and less willing to recommend hegemon-opposed projects:

- $\frac{ds_0^*}{d\alpha} > 0$, $\frac{ds_1^*}{d\alpha} < 0$,
- $\frac{d\Pr[r=1|v_H=1]}{d\alpha} > 0$, $\frac{d\Pr[r=1|v_H=0]}{d\alpha} < 0$.

High Expertise — Low Expertise

$\text{E}[\mu|r=1,v_H=0]$

$\text{E}[\mu|r=1,v_H=1]$

$\text{Pr}(r=1|v_H=1)$

$\text{Pr}(r=1|v_H=0)$

Pr(r=1), E[μ]

H's vote share, α
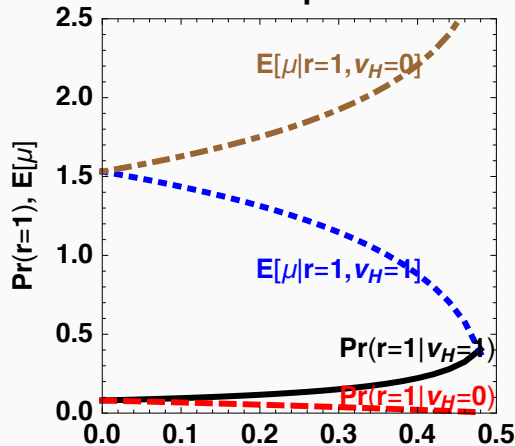
Agency Expertise: Voting power less effective

- As $\delta_A \to \infty$ (expertise increases)
    - Agency knows developmental value perfectly
- If agent recommends, members learn value too (report)
    - Members vote yes as long as real value exceeds its costs (irrespective of hegemon)
- Agency's recommendation ceases to differ across the hegemon's vote
    - $s_1^* \to \frac{\kappa \gamma}{M} \leftarrow s_0^*$
    - H's political concerns ignored by IO
- The agency no longer "shades" its recommendations when expertise is perfect.

Agency Expertise
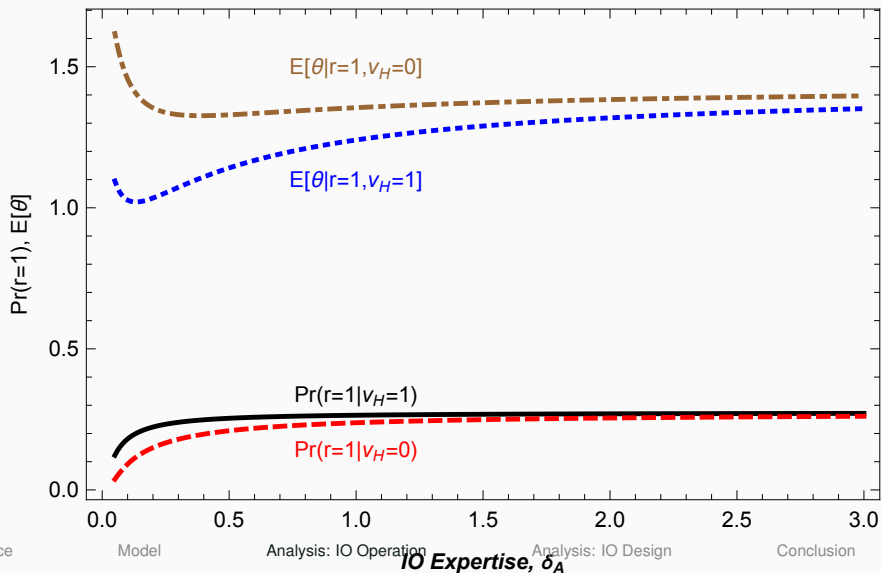
- Expertise gets large,
    - the expected utility of the hegemon shrinks,
    - and may exit, depending on its outside options.
- Members value expertise
    - in the limit, they receive a perfect signal of the developmental quality of the project, and
    - can perfectly control the agency.
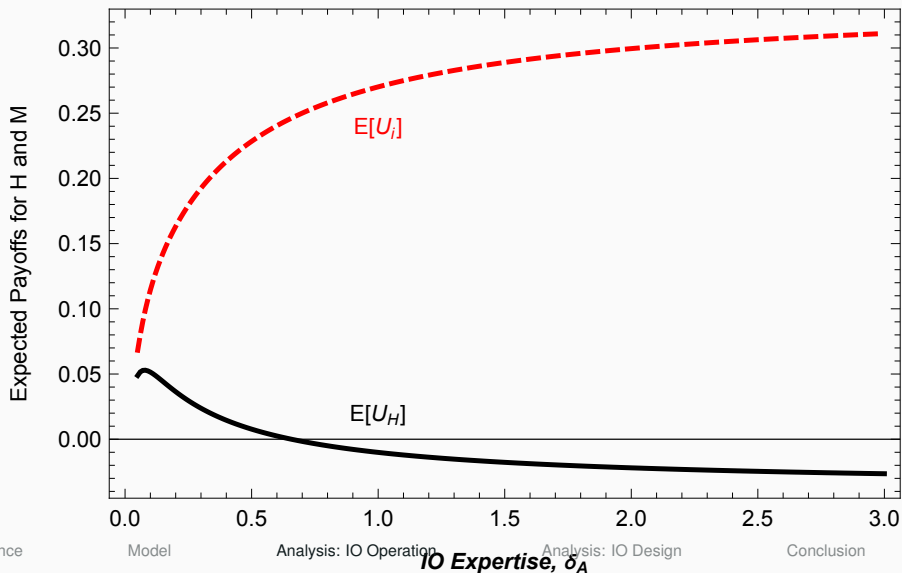
Hegemonic Influence Declines with Expertise

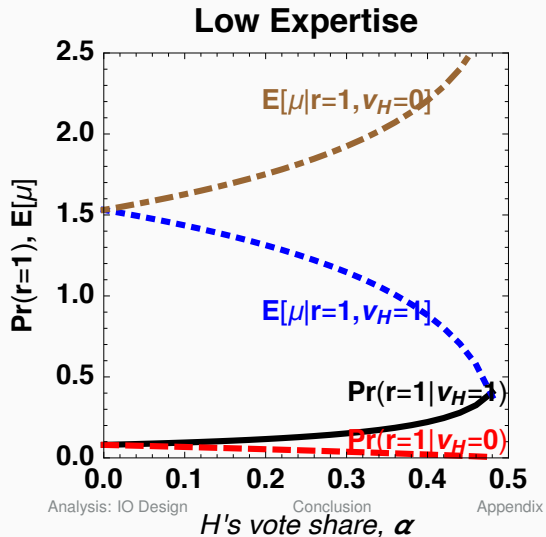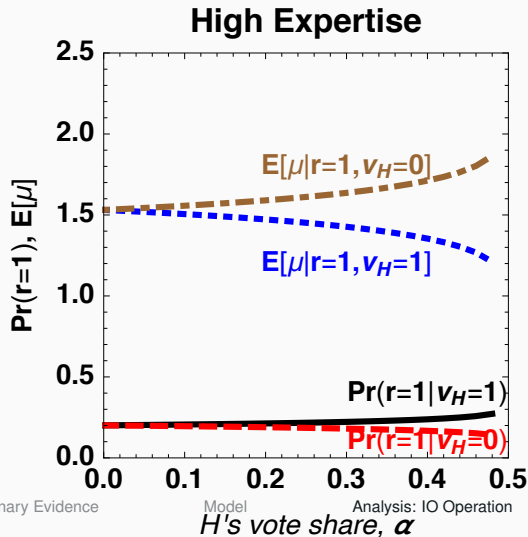- A's responsiveness to H's political interests is moderated by the precision of A's private information.
- Recall $\frac{ds_0^*}{d\alpha} > 0$, $\frac{ds_1^*}{d\alpha} < 0$.
- Then

$$\frac{d^2 s_1^*}{d\alpha d\delta_A} > 0 \quad \text{and} \quad \frac{d^2 s_0^*}{d\alpha d\delta_A} < 0$$
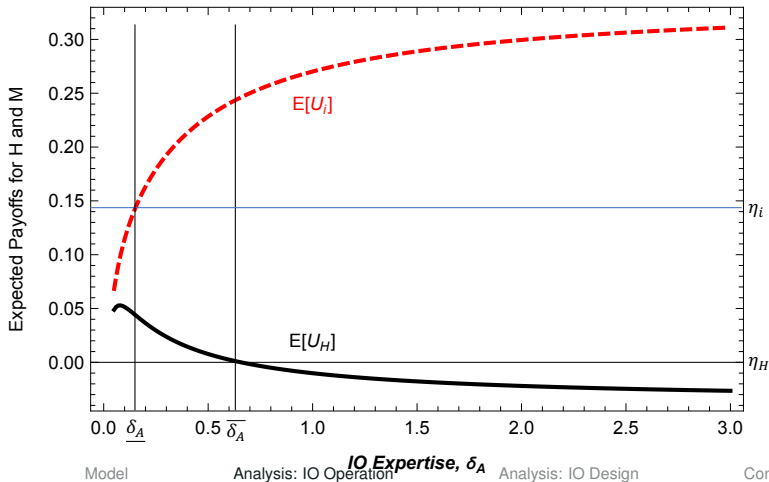
- The relationship between the hegemon's vote share and the agency's recommendation thresholds shrinks towards zero as the agency becomes better informed.
    - Benefit of a larger vote share for the hegemon declines with agency expertise.

IO expertise limits the bias towards the hegemon.

High Expertise

Low Expertise

Preliminary Evidence   Model   Analysis: IO Operation

Analysis: IO Design   Conclusion   Appendix

Consider the decision to *ex ante* join the IO

Exogenous Reservation Payoffs:

- η_i and η_H
- Suppose they are not trivially small.
    - $\eta_i > \widehat{\eta_i}$ and $\eta_H > \widehat{\eta_H}$

Belief thresholds

- $(\tilde{\mu}, \tilde{\omega}) \in \mathbb{R}^2$, such that
- $E[\theta] = \mu < \tilde{\mu}$ and $E[\omega] < \tilde{\omega}$.
- That is the institution can help discern good projects,

Then any incentive-compatible institutional design is characterized by an intermediate level of agency expertise.

Analysis: IO Design

Institutional Design

At formation, H proposes an IO arrangement (α_0, κ_0) that satisfies

$$\frac{dE[U_H(\alpha_0, \kappa_0)]}{d\alpha} \Big/ \frac{dE[U_H(\alpha_0, \kappa_0)]}{d\kappa} = \frac{dE[U_i(\alpha_0, \kappa_0)]}{d\alpha} \Big/ \frac{dE[U_i(\alpha_0, \kappa_0)]}{d\kappa} \tag{1}$$

Both *H* and *i* have same marginal rate of substitution

IMF in 1948: Bretton Woods

US vote share could not be too large

- Negotiations over institutional design – United States and Great Britain
    - US provides bulk of funds 60%.
    - US agreed to limit vote share to 30%.

- Chief US negotiator, Harry Dexter White:

    To accord voting power strictly proportionate to the value of the subscription would give the one or two powers control over the Fund. To do that would destroy the truly international character of the Fund, and seriously jeopardize its success. Indeed it is very doubtful if many countries would be willing to participate in an international organization with wide powers if one or two countries were able to control its policies

Evolution and Reform: Member capacity

Consider the WB since formation in 1948

- Members wealth has increased, $\gamma \downarrow$
    - China: Now about 16% of world GDP.
- Equalized marginal rates of substitution:
    - Member contributions, $\kappa \uparrow$
    - Hegemon vote share, $\alpha \downarrow$
- In 2010, China's vote share increase from 2.77% to 4.42%. 2019: 5.05%.
- China's relative vote and cost share gone up, the US down (relatively).
- Incentive compatibility requires these adjustments.

- US vote share in the IMF has gradually declined as the membership has expanded
  - Economic recovery after the war and subsequent development gave other countries substantial resources to contribute.
  - Shifted more of the voting weight to Europe and Japan.

Evolution: Geopolitics

End of cold war: Salience of geopolitical interests, ω, for US has declined.

- Again, US willing to give up vote share in return for smaller cost share.
    - Much talk by US of others bearing a larger burden
        - NATO and military spending

Threats of Exit: Expertise

Also over this period – IOs better at development etc.

- Expertise up: $\delta_A \uparrow$
- Benefit of large α devalued
- Need a larger α to restore equality of MRS
- Members calling for lower α
- Existence of IC institution in question
- Exit

Increased dissatisfaction for the hegemon; reforms demanded, threat of exit credible.

- Increased expertise
  - monitoring, jurisprudence
- Undermines hegemonic influence
  - Which was somewhat low to start with – unanimity rule
- Stop appointing judges to appellate body,
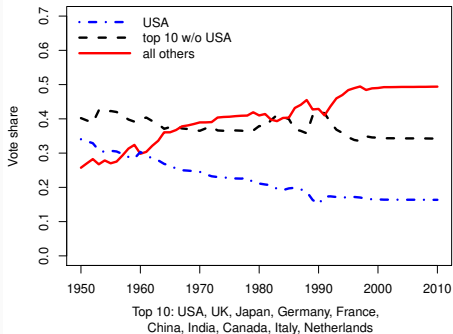 - Threats of exit.

Conclusion

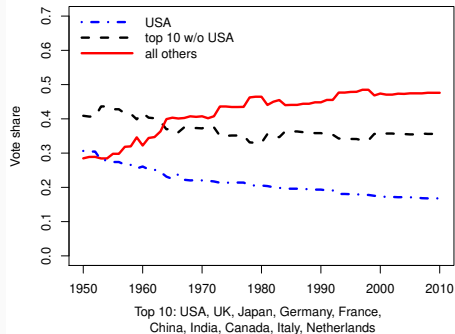## Conclusions: Formal model of IO design

- Consistent with stylized facts
  - Delegation to IO with expertise
  - Both powerful and less powerful states participate (contribute and vote)
  - Powerful states informally influence IO
- Key findings
  - IO shades its recommendations in favor of hegemon, even though it has no underlying preference to do so
  - Both developmental and political projects are undertaken in equilibrium
  - Hegemon prefers limited expertise
    - More expertise undermines H's influence
    - Vote share devalued
  - IC institutional design requires moderate expertise
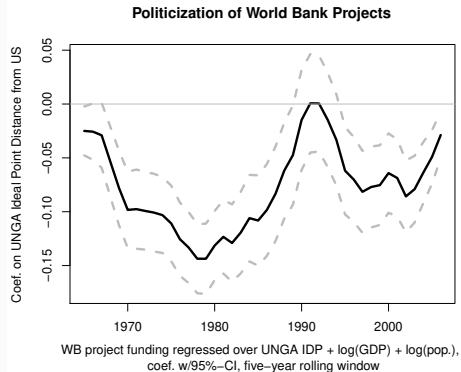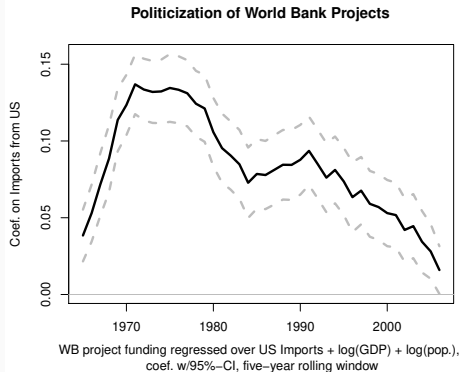   - Bureaucrats can't be too good at their jobs.

IBRD and IMF Vote Shares
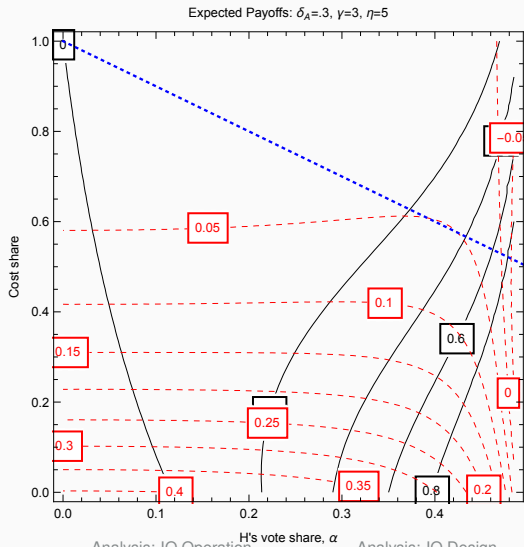

Figure: IBRD Vote Shares, 1950–2010 (USA, top 10 w/o USA, all others). Top 10: USA, UK, Japan, Germany, France, China, India, Canada, Italy, Netherlands

Figure: IMF Vote Shares, 1950–2010 (USA, top 10 w/o USA, all others). Top 10: USA, UK, Japan, Germany, France, China, India, Canada, Italy, Netherlands

Politicization of WB Projects

Politicization of World Bank Projects

WB project funding regressed over US Imports + log(GDP) + log(pop.), coef. w/95%–CI, five–year rolling window

Politicization of World Bank Projects

WB project funding regressed over UNGA IDP + log(GDP) + log(pop.), coef. w/95%–CI, five–year rolling window

Expected Payoffs: $\delta_A=.3$, $\gamma=3$, $\eta=5$

Expected Payoff: $\kappa=1-\alpha, \gamma=3, \eta=5$

Distribution of funded projects

Appendix