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A Theory of Cost-Sharing Negotiations of Alliances

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Jan. 24, 2025

EXCLUSIVE

Trump Asks Tokyo to Quadruple Payments for U.S. Troops in Japan

The move is part of the administration's campaign to get U.S. allies to pay more for defense. South Korea is also being asked to pony up.

By Lara Seligman and Robbie Gramer

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- The majority of these costs are for utility bills, salaries of general workers at US bases, houses for US soldiers

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- Cost-sharing should weaken deterrence
- states claim something opposite

In 2021, Japanese Foreign Minister says, "(the agreement) increases the credibility of the alliance"

the US says that the cost-sharing by the Japanese government "serves as a pillar of the Alliance"

Introduction

RQs

- Why do protégés agree to pay?
- What determines the success or failure of these negotiations?
- How do these negotiations affect deterrence?

Introduction

Clarification

Burden-sharing: coordination about each member's military capability

Cost-sharing: direct or indirect payment of the cost of alliances or deployment

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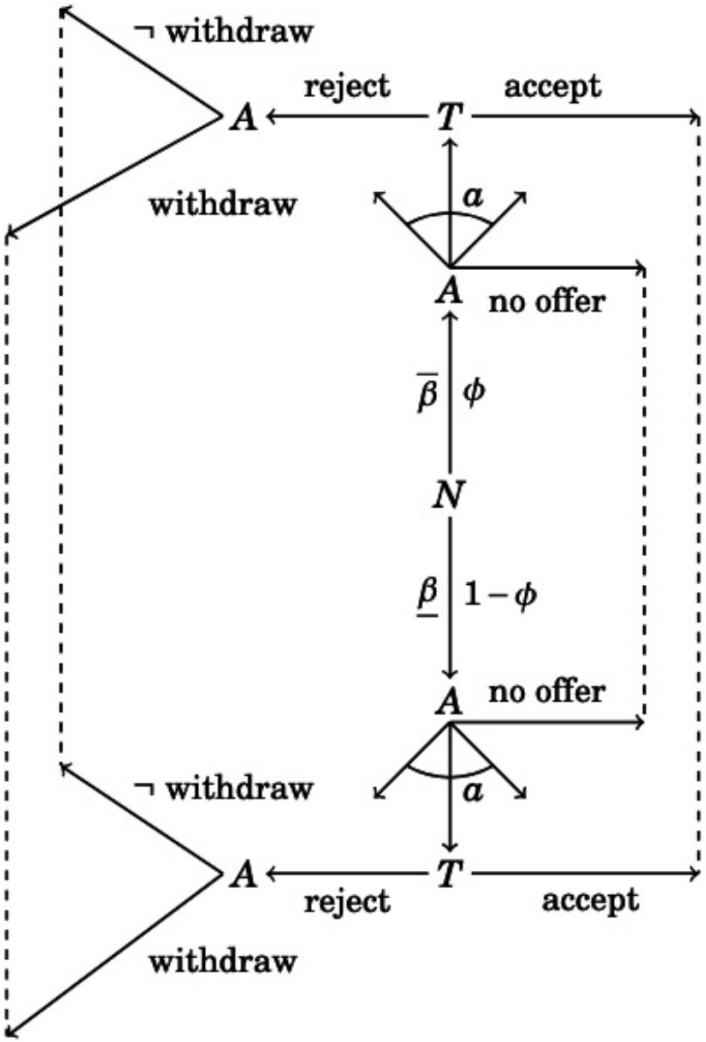
- The alliance increases the prob. of winning
- Two stages: (1) a cost-sharing negotiation and (2) crisis bargaining

Game: the cost-sharing negotiation stage



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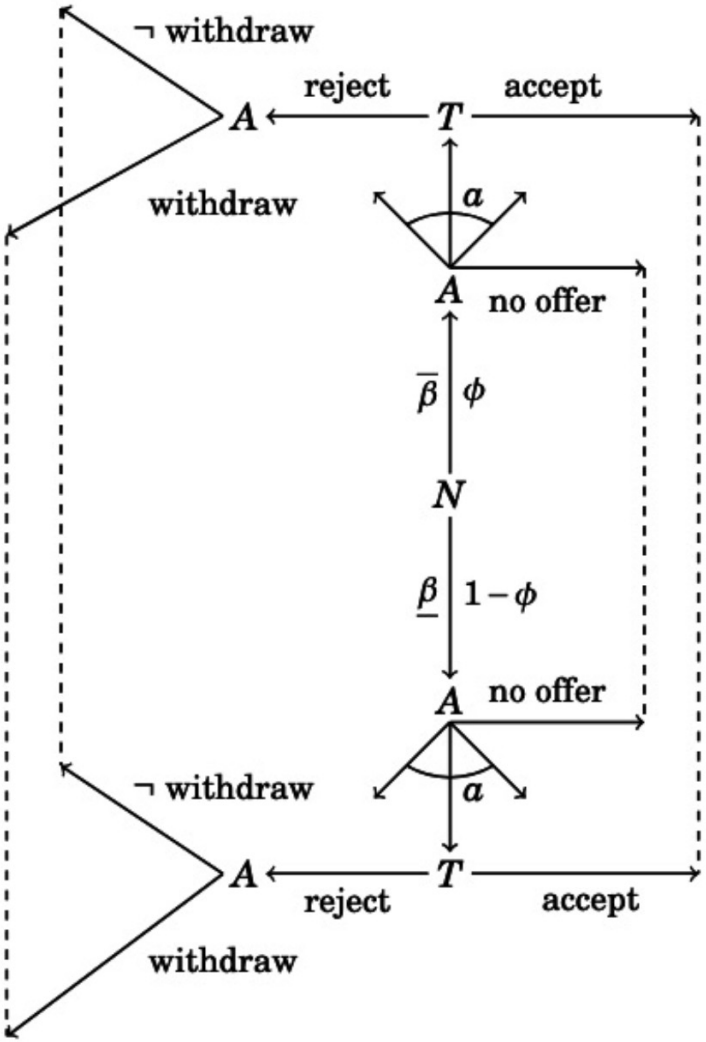

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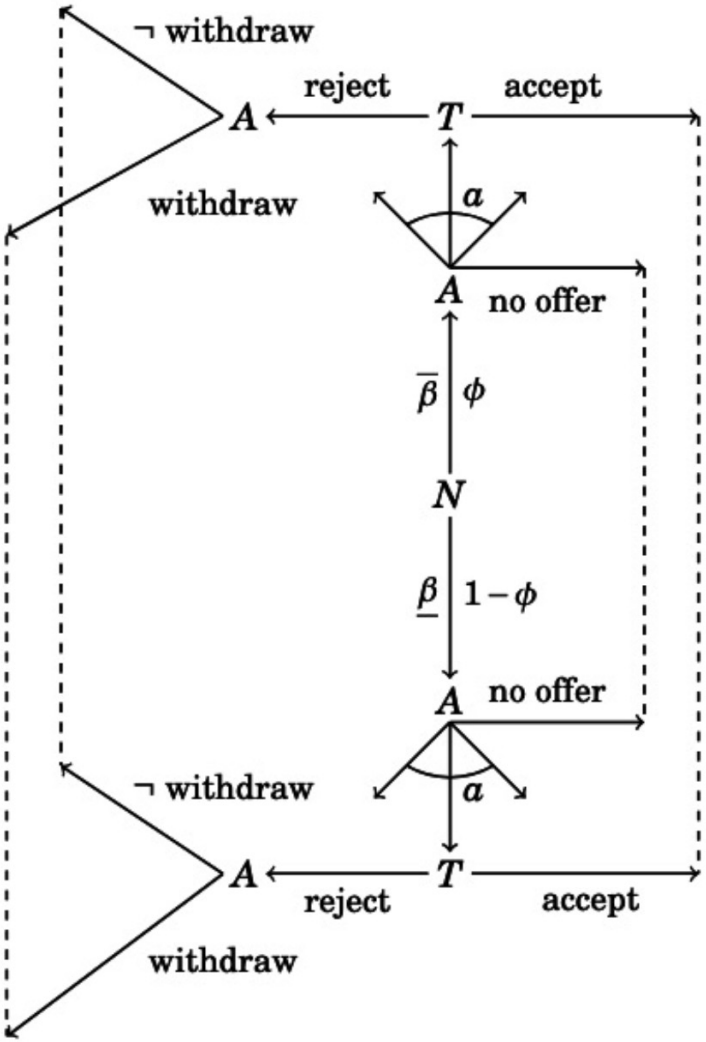

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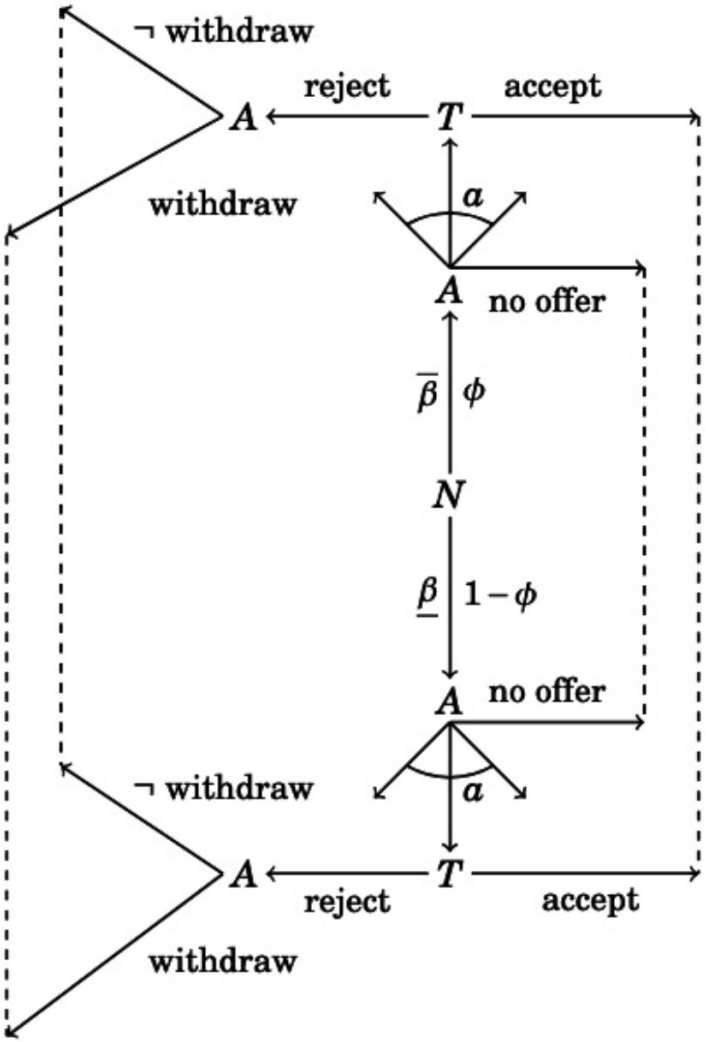

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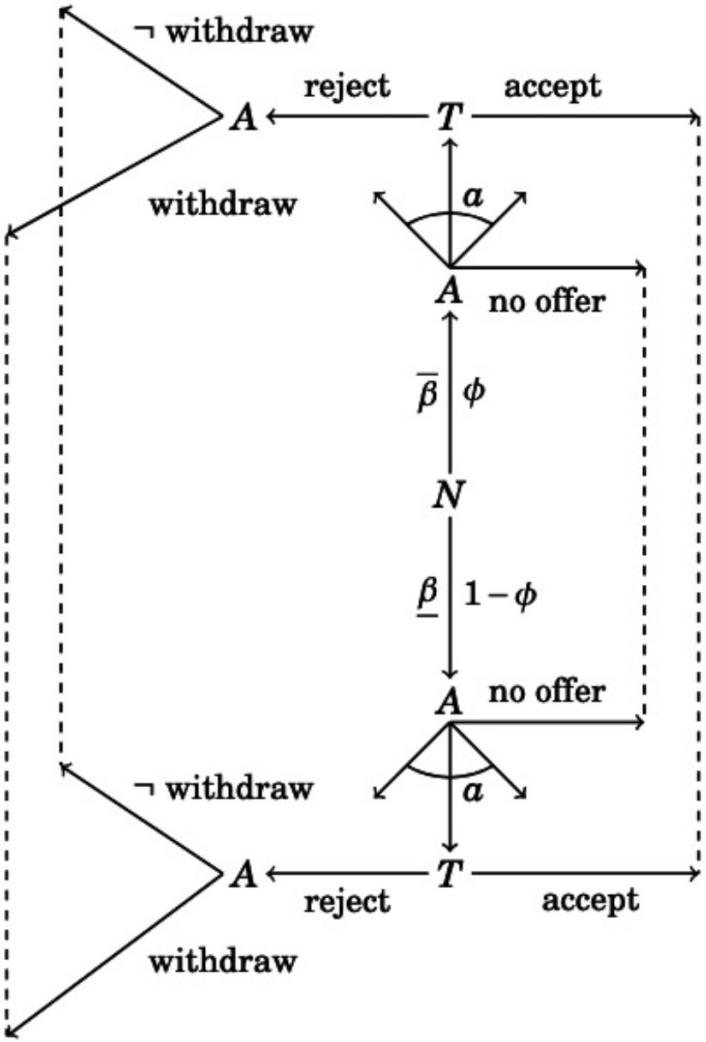

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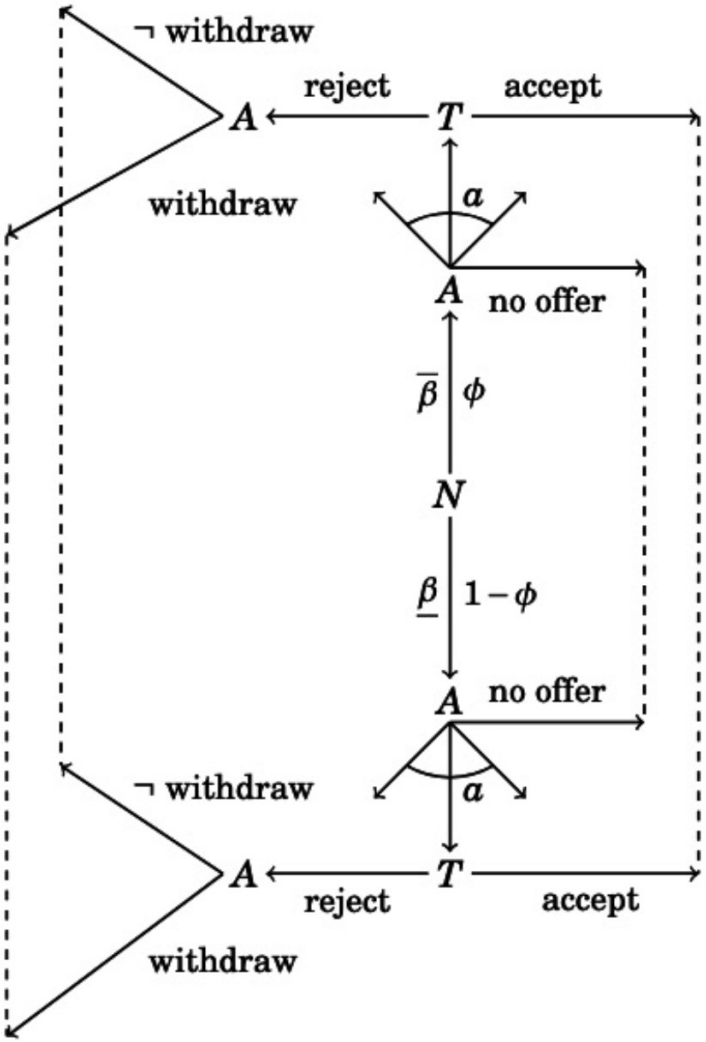

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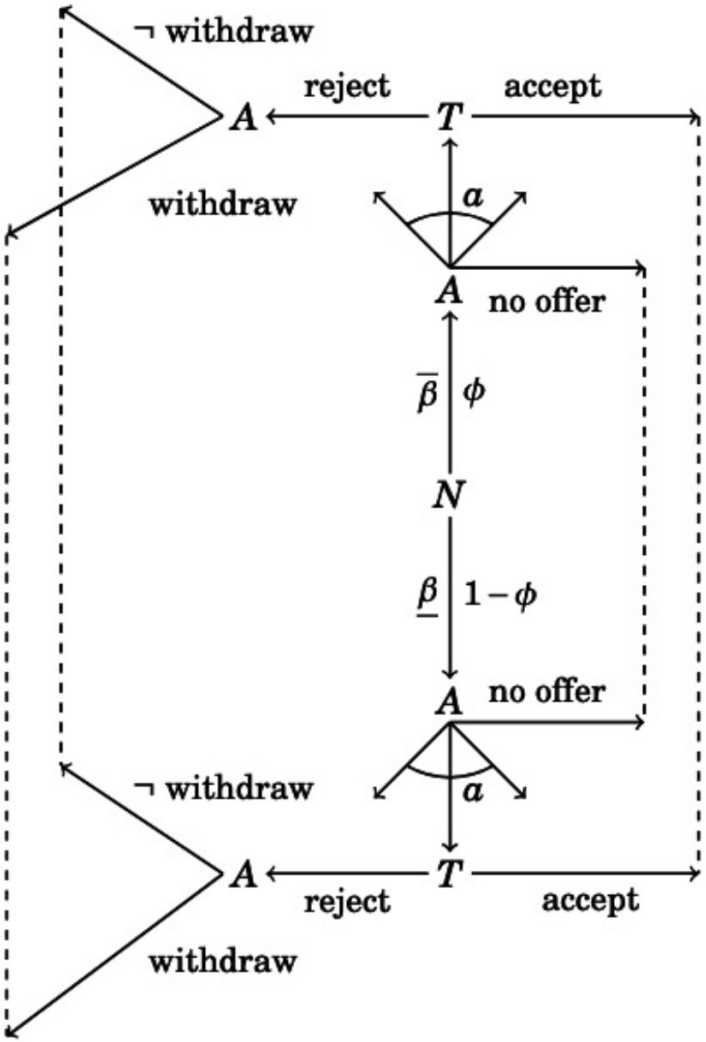

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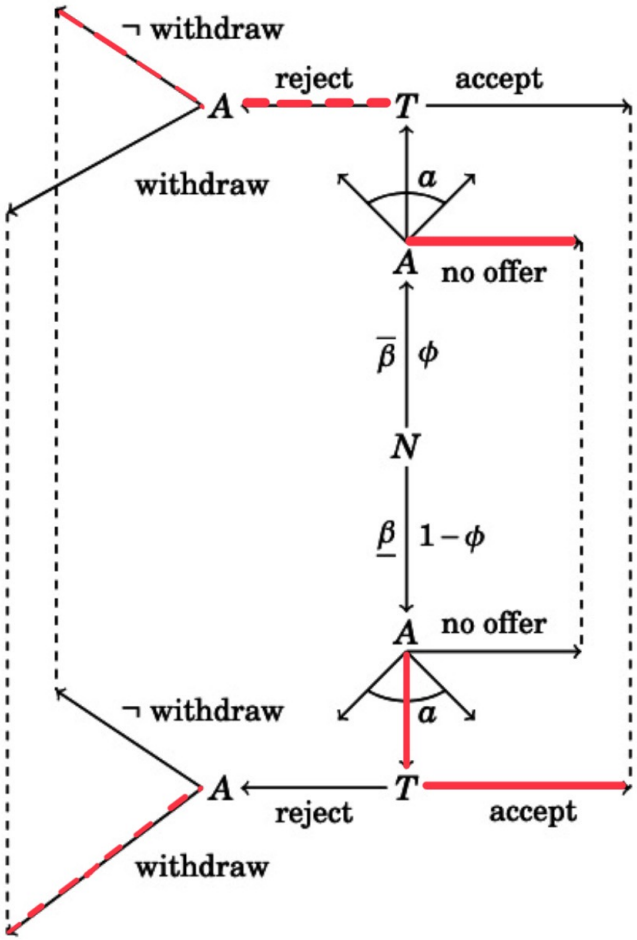
- A gets la from domestic politics, where $l \in (-1,1)$ is the level of isolationism
- T accepts or rejects a
- If T accepts, the alliance is kept ("sharing")
- If T rejects, A chooses to withdraw from the alliance ("withdrawal") or remain in the alliance ("free-riding")

Equilibrium 1



Proposition (Separating Equilibrium 1)

When

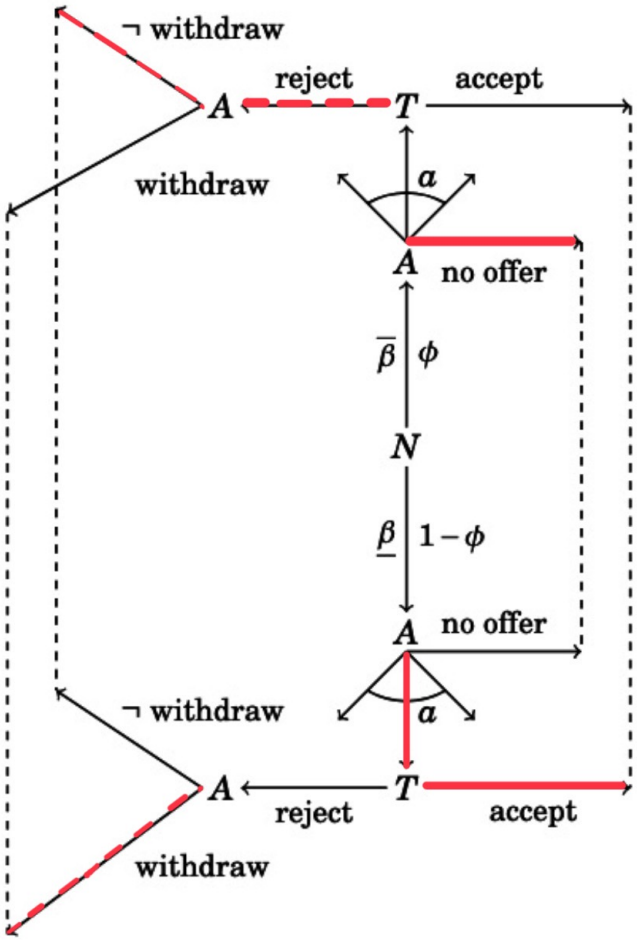
$$I < 0$$

$$\underline{\beta}(p_h - p_l) < \pi < \overline{\beta}(p_h - p_m - c_T) + c_A,$$

, and other conditions,

- *the committed A does not make an offer*
- *the uncommitted A offers* $a^* = p_h - p_l$*, and T accepts*

Equilibrium 1



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- A credible threat of abandonment is key for successful cost-sharing negotiations

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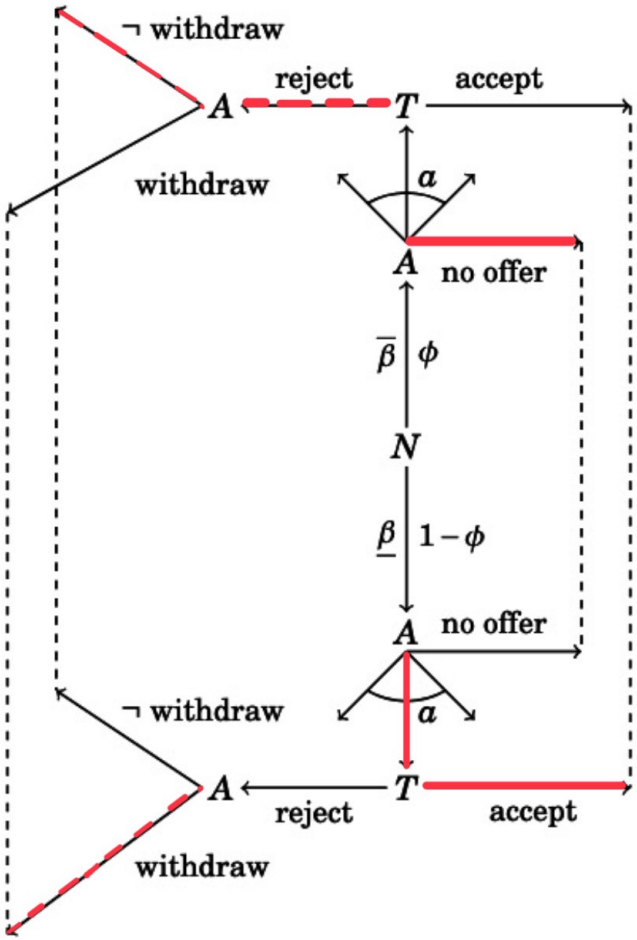

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- A successful negotiation is a sign of an uncommitted patron

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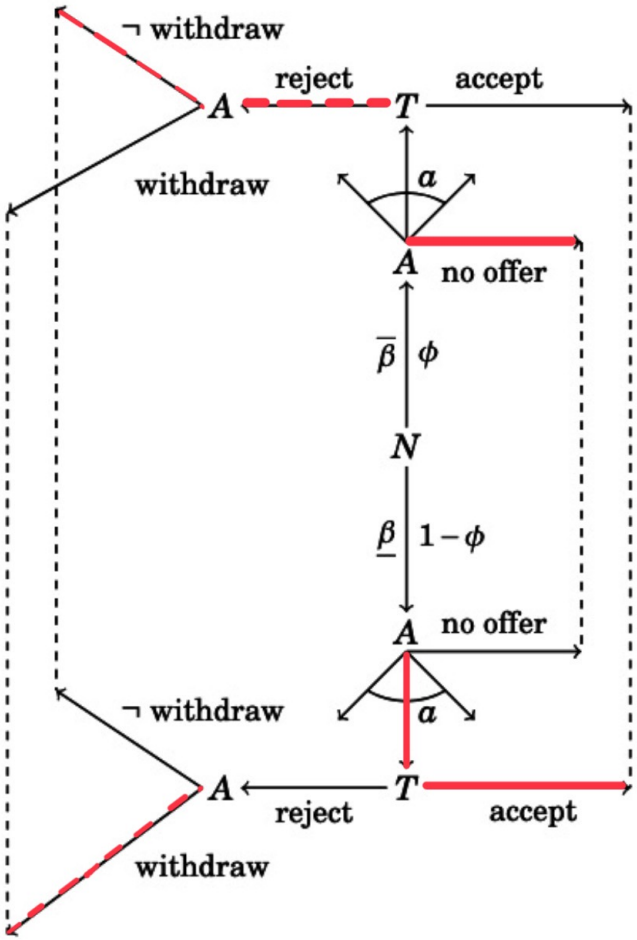
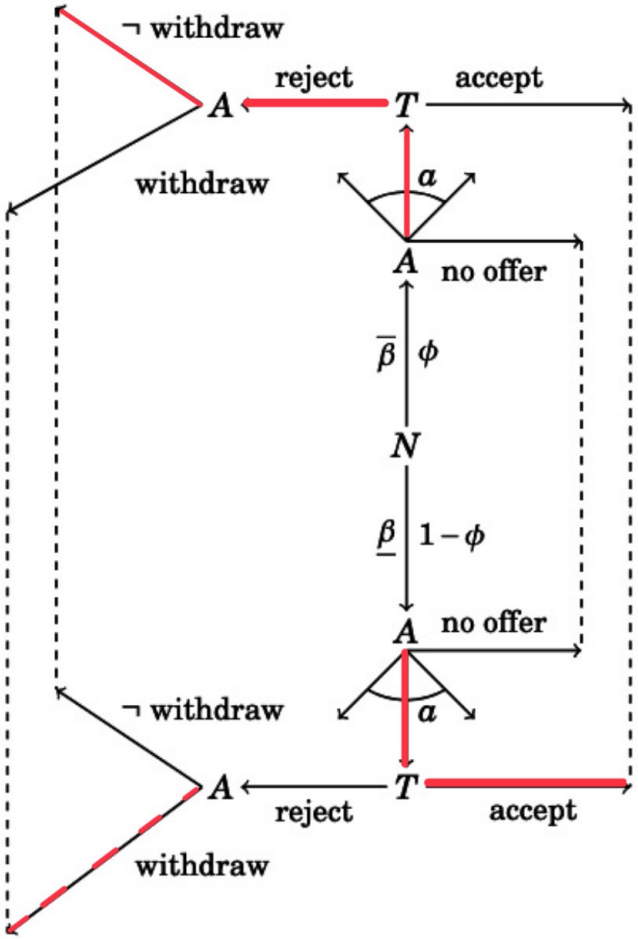


Implications

- A credible threat of abandonment is key for successful cost-sharing negotiations
- A successful negotiation is a sign of an uncommitted patron
- A successful negotiation maintains deterrence by prioritizing a capability boost of alliances over signaling

Equilibrium 2



Proposition (Separating Equilibrium 2)

When

$$\min\{1, l^* = \frac{(1+\underline{\beta})a^* - \pi}{\overline{a} - a^*}\} > l \geq 0$$

$$\underline{\beta}(p_h - p_l) < \pi < \overline{\beta}(p_h - p_m - c_T) + c_A$$

and other conditions,

- *the committed A offers $a = \overline{a}$ and T rejects it*
- *the uncommitted A offers $a = a^*$ and T accepts*

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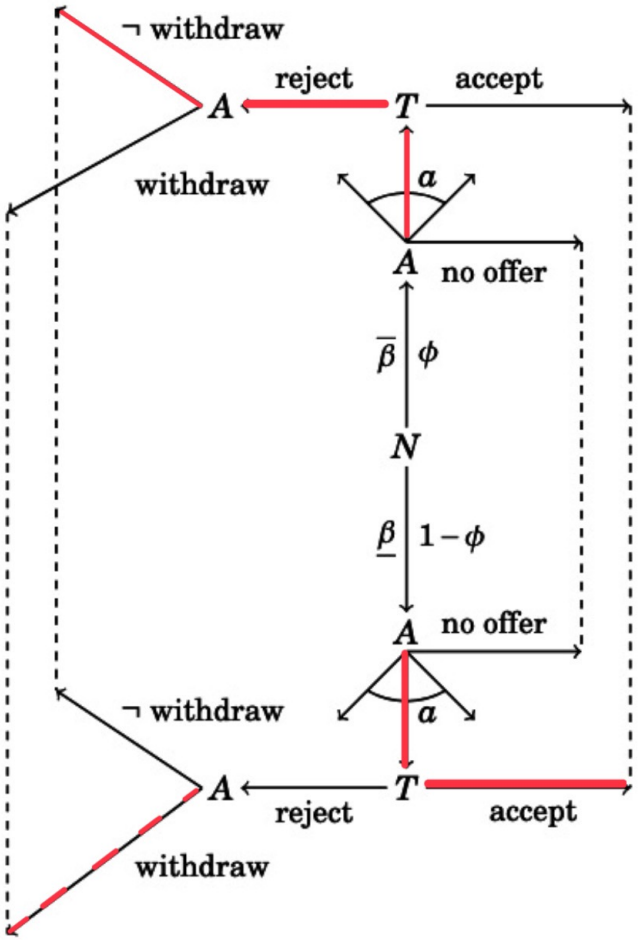

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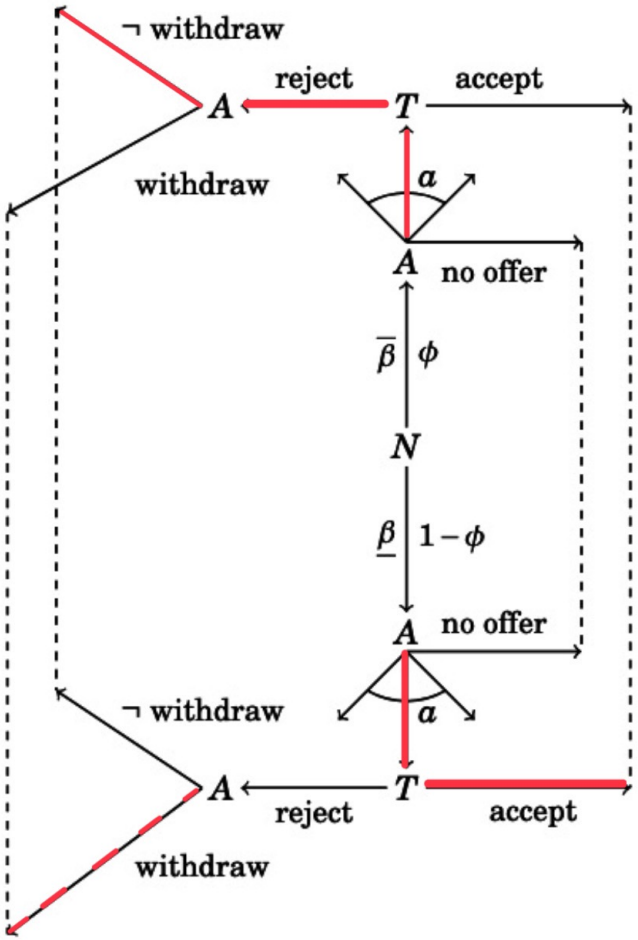

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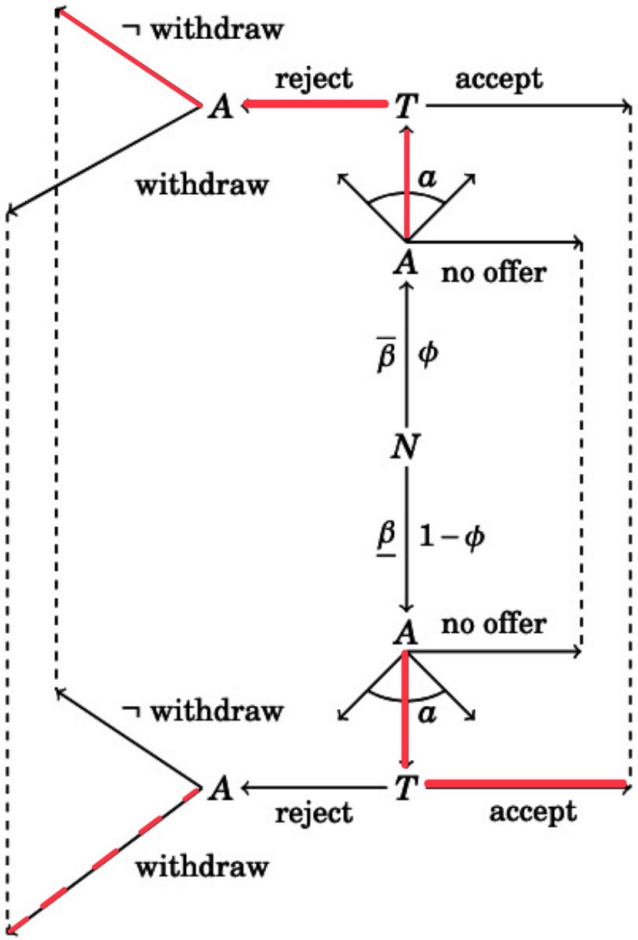

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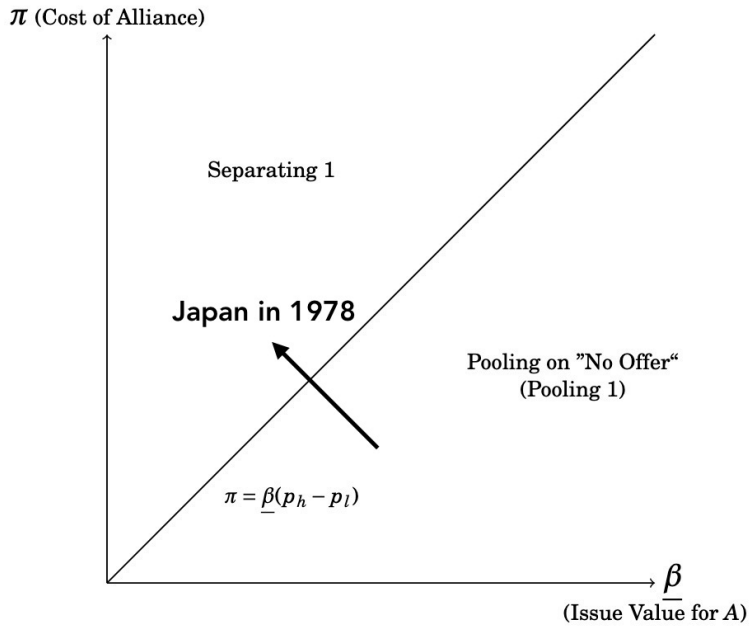
- A committed patron increases its demand to pander to domestic isolationism, not to get international concession
- Failure of the negotiation is a sign of a committed patron b/c it shows a protégé's confidence in its patron's support
- A *positive* correlation between a patron's cost-sharing demand and commitment

Japan 1978



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- π increases
- β decreases
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  $\leftarrow$ the US's withdrawal from other Asian countries

Japan 2019

The US failed to get a concession from Japan in 2019, and the model can explain why.

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The US failed to get a concession from Japan in 2019, and the model can explain why.

Japan in 2019 was in the second separating equilibrium:

- Trump recognized a threat of abandonment as leverage to get a concession
- That threat was not credible enough due to his relationship with Shinzo Abe and his commitment to Japanese security
- Trump was mainly concerned about domestic politics where domestic isolationism is relatively strong

$\Rightarrow$ As the model explains, the demand surged.

Conclusion

This paper

- investigates a model of cost-sharing negotiations
- shows (a) credible threat of abandonment is key for successful cost-sharing negotiations
- (b) allies sometimes abandon the signaling aspect to secure a capability boost
- (c) a large demand causes a failure of a negotiation, but it satisfies domestic isolationism without damaging signaling

Thank you!

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Appendix 1

Assumption

$$p_l > c_T \tag{1}$$

$$\min\{\overline{\beta}(p_m - p_l), \underline{\beta}(p_h - p_l)\} > c_A > \underline{\beta}(p_m - p_l) \tag{2}$$

Appendix 2

Proposition (Separating 1)

When assumption 1 is satisfied and

$$I < 0 \tag{3}$$

$$\overline{\beta} > \frac{\underline{\beta}(p_h - p_l) - c_A}{p_h - p_m - c_T} \tag{4}$$

$$\frac{p_h - p_m - c_T + c_A}{p_h - p_l} > \underline{\beta} \tag{5}$$

$$p_h - p_m > c_T, \tag{6}$$

$$\underline{\beta}(p_h - p_l) < \pi < \overline{\beta}(p_h - p_m - c_T) + c_A, \tag{7}$$

there exists a separating PBE at which the committed type of A does not make any cost-sharing offer, C offers $x = p_h - c_T$, and T accepts it, and the uncommitted A offers $a = \min\{a^* = p_h - p_l, \overline{a}\}$, T accepts the offer, C offers $x = p_h - c_T$, and T accepts it on the path of play.

Appendix 3

Proposition (Separating 2)

When assumption 1 and Line 4, 5, 6, and 7 are satisfied and

$$\bar{a} > a^* \tag{8}$$

$$\min\{1, l^* = \frac{(1+\underline{\beta})a^* - \pi}{\bar{a} - a^*}\} > l \geq 0 \tag{9}$$

there exists a separating PBE at which the committed type of A offers $a = \bar{a}$, T rejects it, A does not withdraw from the alliance, C offers $x = p_h - c_T$, and T accepts it, and the uncommitted A offers $a = a^*$, T accepts the offer, C offers $x = p_h - c_T$, and T accepts it on the path of play. See Appendix for proof.

Appendix 4

Proposition (Separating 3)

When assumption 1 and Line 4, 5, 6, and 7 are satisfied and

$$\overline{a} > (\underline{\beta} + 2)a^* - \pi \tag{10}$$

$$1 > I > I^* \tag{11}$$

there exists a separating PBE at which the committed type of A offers $a = \overline{a}$, T rejects it, A does not withdraw from the alliance, C offers $x = p_h - c_T$, and T accepts it, and the uncommitted A offers $a = \overline{a}$, T rejects the offer, A withdraw from the alliance, C offers $x = p_h - c_T$, and T accepts it on the path of play. See Appendix for proof.

Appendix 5

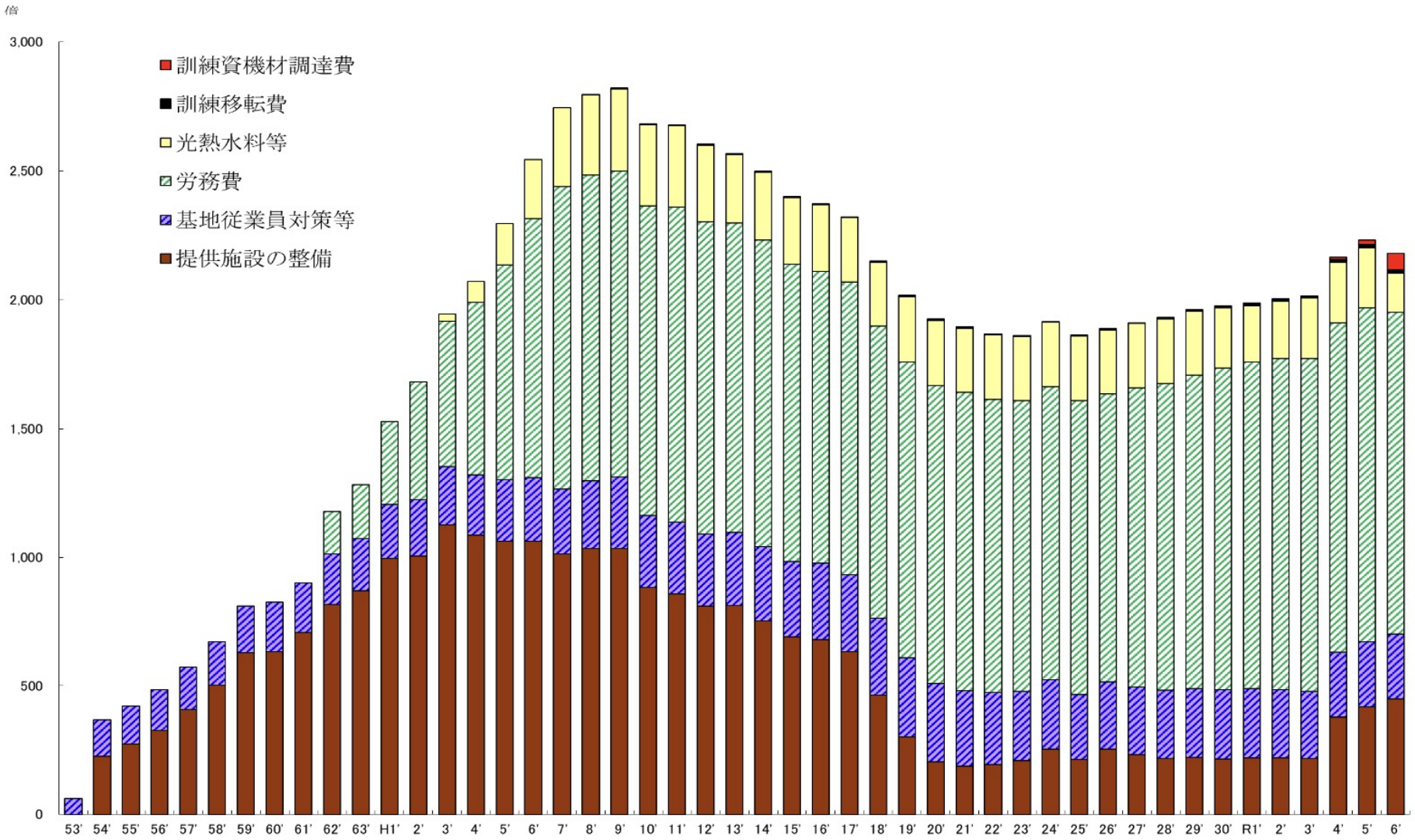
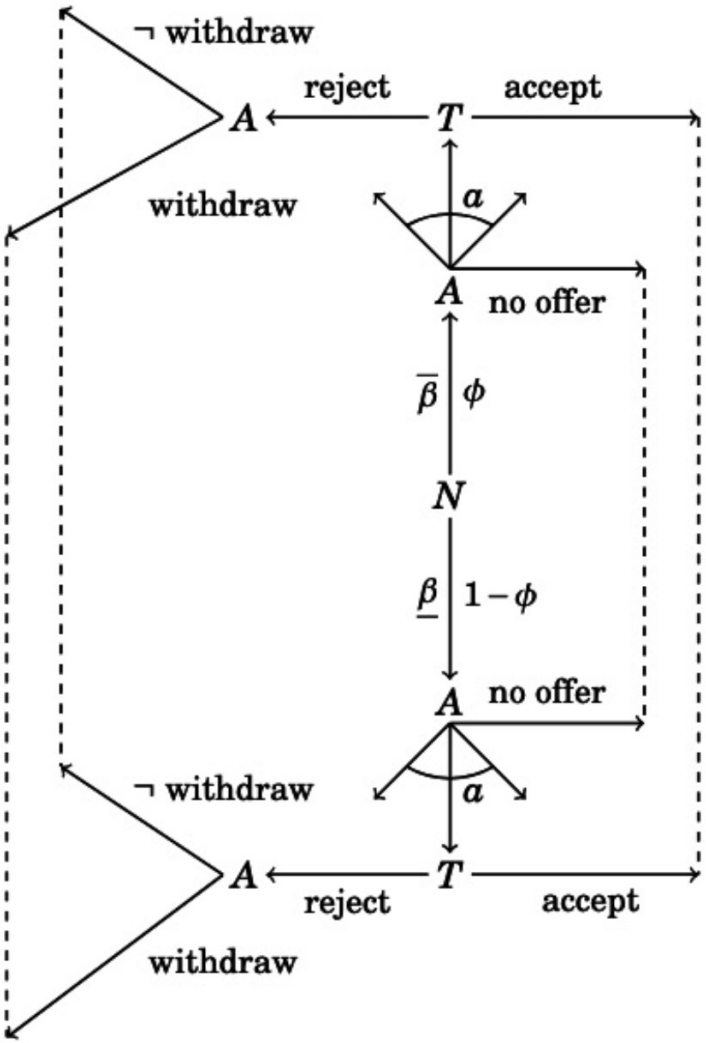


Figure: Japan's Cost-Sharing Over Time

Appendix 6: Payoffs from the Negotiation



Outcomes: no offer, sharing, free-riding, and withdrawal

Payoffs from the negotiation: $\lambda_{i,n}$

$$\lambda_{A,n} = \begin{cases} -\pi & (\text{if } n = \text{no offer}) \\ -\pi + a + la & (\text{if } n = \text{sharing}) \\ -\pi + la & (\text{if } n = \text{free-riding}) \\ 0 + la & (\text{if } n = \text{withdrawal}) \end{cases}$$

$$\lambda_{T,n} = \begin{cases} -a & (\text{if } n = \text{sharing}) \\ 0 & (\text{otherwise}) \end{cases}$$

Appendix 7: Crisis Bargaining

- C offers $x \in (0, 1)$
- T accepts the offer or not
- If T accepts, it gets x and C gets $1 - x$
- If T rejects, war occurs and A decides to intervene or not
- The prob. of winning for T: $p \in (0, 1)$

$$p = \begin{cases} p_l & \text{(fighting alone)} \\ p_m & \text{(fighting together w/o alliance)} \\ p_h & \text{(fighting together w/ alliance)} \end{cases}$$

Appendix 8: Payoffs

$$u_i(\text{Settlement}) = \begin{cases} \beta x + \lambda_{A,n} & (\text{if } i = A) \\ x + \lambda_{T,n} & (\text{if } i = T) \\ 1 - x & (\text{if } i = C) \end{cases}$$

$$u_i(\text{Bilateral War}) = \begin{cases} \beta p_l + \lambda_{A,n} & (\text{if } i = A) \\ p_l - c_T + \lambda_{T,n} & (\text{if } i = T) \\ 1 - p_l - c_C & (\text{if } i = C) \end{cases}$$

$$u_i(\text{Multilateral War w/o Alliance}) = \begin{cases} \beta p_m - c_A + \lambda_{A,n} & (\text{if } i = A) \\ p_m - c_T + \lambda_{T,n} & (\text{if } i = T) \\ 1 - p_m - c_C & (\text{if } i = C) \end{cases}$$

$$u_i(\text{Multilateral War w/ Alliance}) = \begin{cases} \beta p_h - c_A + \lambda_{A,n} & (\text{if } i = A) \\ p_h - c_T + \lambda_{T,n} & (\text{if } i = T) \\ 1 - p_h - c_C & (\text{if } i = C) \end{cases}$$