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Arming, Alliance, and Screening

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Presentation at Kobe University
Jan. 23, 2026

Motivation: Alliances

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$\leftarrow$ solving information problems on a patron's intention.

But there is little discussion on commitment problems/preventive war.

Are alliances effective against another cause of war?

Motivation: Preventive War

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Counter examples: Japan and West Germany after WWII

Why did preventive war fail to occur in these likely cases?
How do alliances work under power shifts?

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RQ: Do alliances deter preventive war? If so, how?

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My argument

A screening effect of alliances: Alliances make arming more informative, and this screens the otherwise hidden intention of a rising protégé.

Model: Setup

Overview

In a baseline model,

- Two actors (A and B)
- a rising state (A) chooses to invest in its military capability
- Expecting a future power shift, a declining state (B) wants to prevent it if A is a revisionist, but not if A is a pacifist
- revisionism is private information ($r \in \{1, p\}$)

In a main model, an alliance is introduced.

- Three actors (A, B, and E)
- A has a defensive alliance with E
- E is SQ oriented, and can intervene in a war

Model: Setup

Sequence

- *Nature* picks up the level of A's revisionism ($r \in \{1, p\}$)
- A chooses whether it arms ($a = 1$) with some costs ($K = k > 0$) or not ($a = 0$ and $K = 0$)
- B chooses whether it goes to a preventive attack on A before arming is complete
- If B passes, A's revisionism is revealed
- B offers $x \in (0, 1)$ in crisis bargaining, and A decides whether to accept ($\rightarrow$ settlement) or reject it ($\rightarrow$ war)
- E is SQ oriented and can intervene in a war, increasing A's power by ϵ

Model: Payoffs

General war payoffs: $w_A(\cdot)$ for A and $w_B(\cdot)$ for B.

War is inefficient: $w_A(\cdot) + w_B(\cdot) < 1$

$w_A(\cdot)$ is increasing and $w_B(\cdot)$ is decreasing in the input $(\cdot)$.

E.g.,
In preventive war: $w_A(0)$ and $w_B(0)$

War without intervention: $w_A(a)$ and $w_B(a)$

War with intervention: $w_A(a+\epsilon)$ and $w_B(a+\epsilon)$

Model: Payoffs

$$u_i(\text{Settlement}) = \begin{cases} x - K & (\text{if } i = A) \\ 1 - x & (\text{if } i = B) \\ 1 - |x - s| & (\text{if } i = E) \end{cases} \tag{1}$$

$$u_i(\text{War w/o Intervention}) = \begin{cases} rw_A(a) - K & (\text{if } i = A) \\ w_B(a) & (\text{if } i = B) \\ 1 - |rw_A(a) - s| & (\text{if } i = E) \end{cases} \tag{2}$$

$$u_i(\text{War w/ Intervention}) = \begin{cases} rw_A(a + \epsilon) - K & (\text{if } i = A) \\ w_B(a + \epsilon) & (\text{if } i = B) \\ 1 - |rw_A(a + \epsilon) - s| & (\text{if } i = E) \end{cases} \tag{3}$$

, where s is an ideal point for E

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  $\rightarrow$ preventive war happens at a certain probability in a semi-separating equi.

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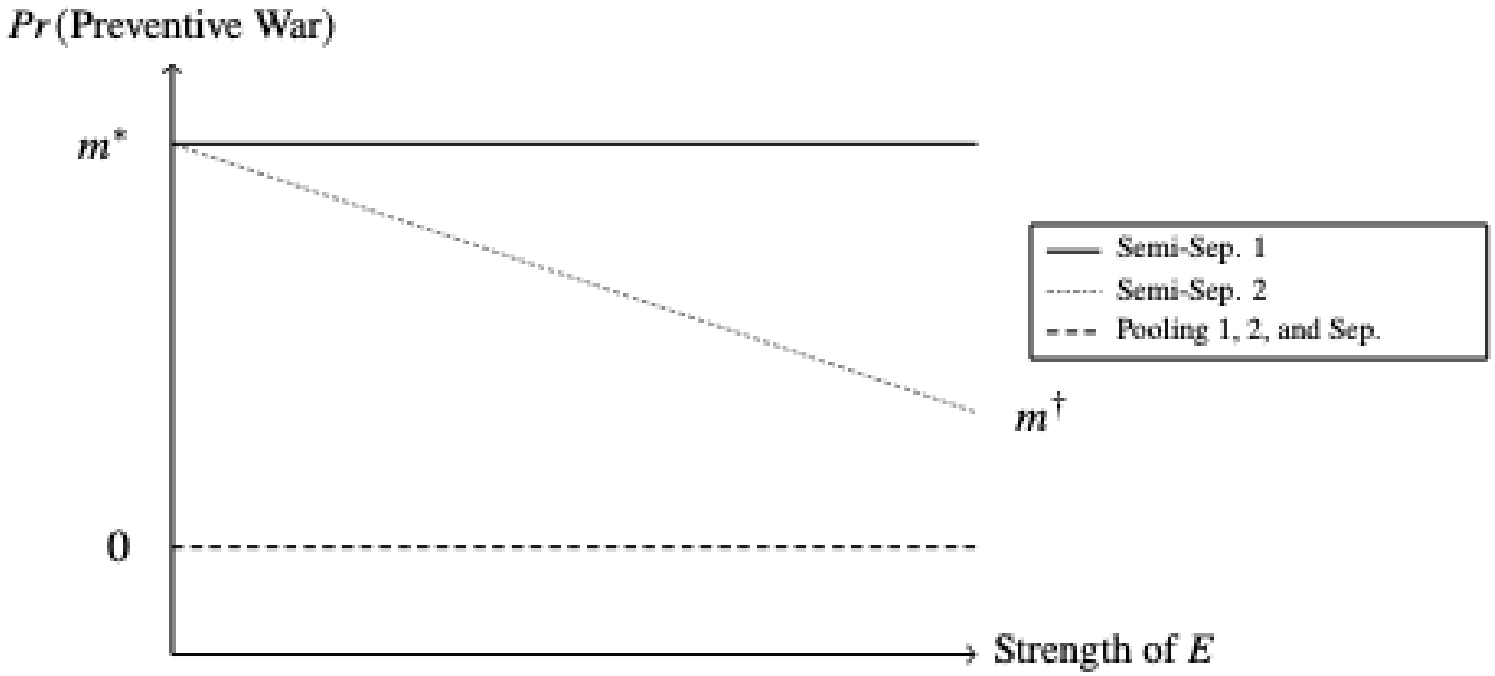
- w/ alliances, only revisionist A has the incentive to arm
  $\rightarrow$ arming is a clear sign of revisionism, which *would* cause preventive war for sure
- Given this, the revisionist is *less* likely to arm to avoid a preventive war
  $\rightarrow$ preventive war is less likely
  $\rightarrow$ screening happens in an off-equi. path

Implication: Probability of Preventive War



Pr(Preventive War) is higher in the baseline alliance model (solid line) and lower in the main alliance model (dotted lines)

Hypothesis and Empirical Strategy

- **Hypothesis**: Defensive alliances decrease the probability of preventive war

- I follow Bell and Johnson (2015) and (re)calculate the expected power shifts
- DV: War on target (a rising side)
- IV: Expected power shifts, defense pacts[1], and their interaction term
- with some pre-treatment control variables[2] and directed-dyad- and year-fixed effects, estimated through OLS[3]

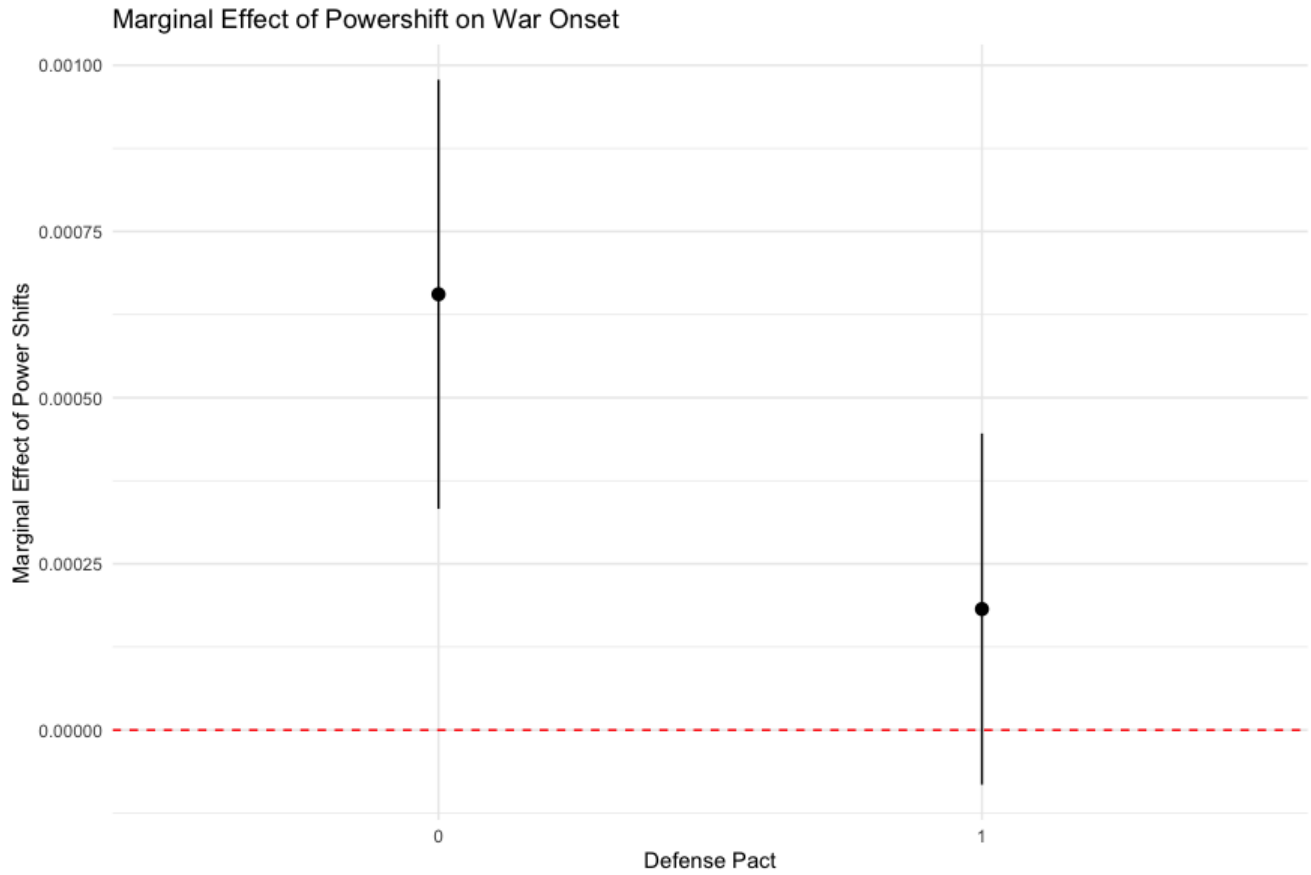
$$Y_{it} = \beta_1 \text{PS}_{it} + \beta_2 \text{Alliance}_{it} + \beta_3 \text{PS}_{i,t} \times \text{Alliance}_{i,t} + \mathbf{X}'\beta + \lambda_i + \eta_t + \epsilon$$

[1] from ATOP dataset.

[2] mutual democracy (Polity2), foreign policy similarity (S-score), contiguity, distance, and up-to-cubic polynomial of peace years

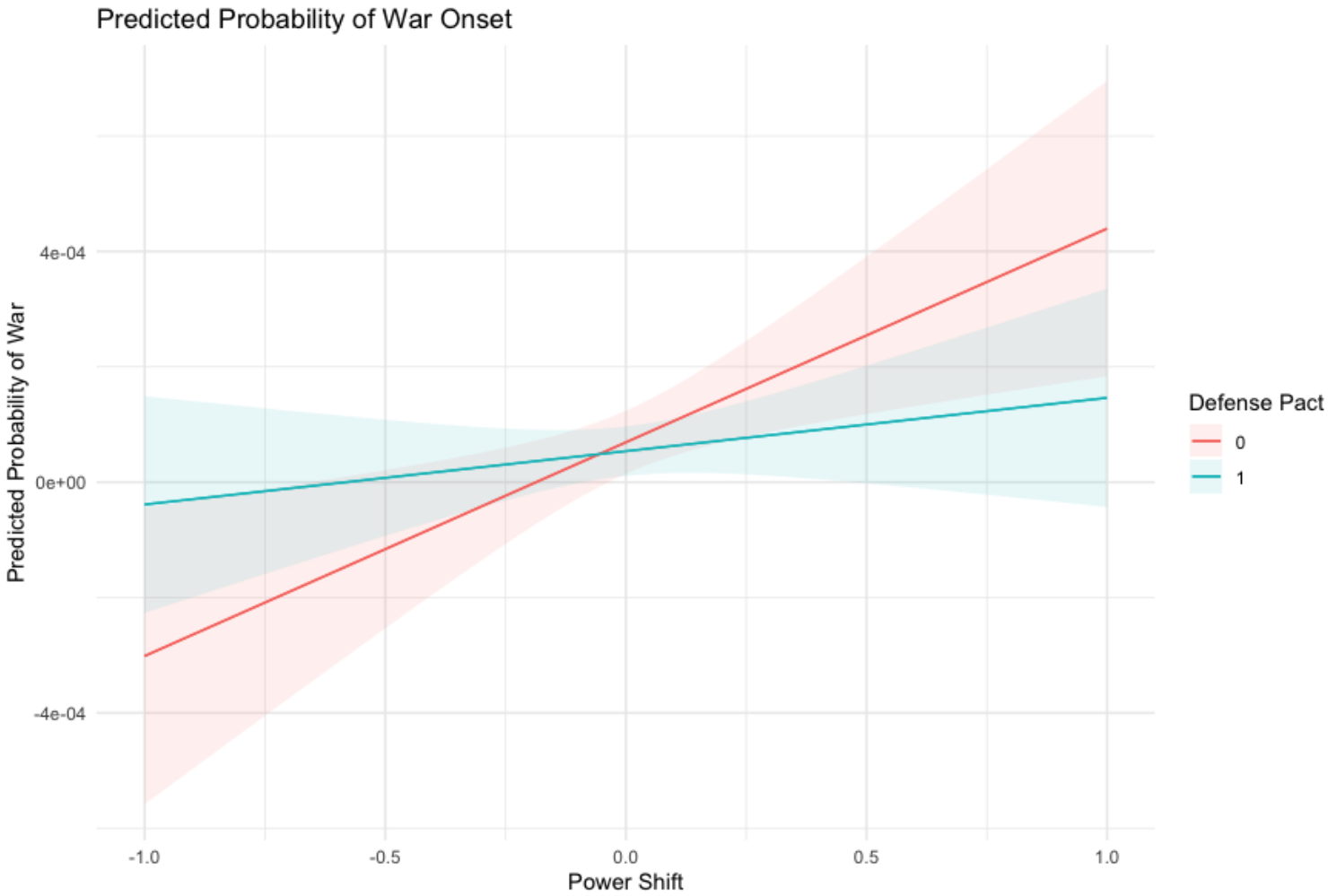
[3] See Beck (2020) for methodological concerns of logistic regression with fixed effects.

Result: Marginal Effect of Expected Power Shifts



- the expected power shifts are positively associated with war
- alliances mitigate this positive correlation

Result: Predicted Probability of War



Robustness

These results remain robust across multiple model specifications.

- a different foreign policy similarity measure (UN Voting Data)
- a different democracy index (Vdem)
- excluding NATO
- different year coverage without NATO (befor and after 1945)
- logistic regressions

Case Study

Two case studies to test the mechanisms.

Germany in the July Crisis in 1914

- The Franco-Russian Alliance
- Russian general mobilization on July 31st
- Germany's preventive attack on August 4th
- Thanks to the alliance, Germany had a conviction that Russia is a revisionist

Japan after WWII

- Clear understanding that arming would destabilize the region
- Low military expenditure and efforts to reconstruct relationships
- Nonetheless, enduring distrust esp. from South Korea and the CCP
- because low military expenditure is what a revisionist Japan would also do due to the screening effect

Conclusion

This paper

- Investigates whether alliances deter preventive war
- Proposes a *screening effect* of alliances with some qualitative and quantitative evidence
- Suggests that alliances serve as a critical institutional tool for sustaining global stability during periods of power shifts

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Thank you for listening!

Appendix: Equilibria

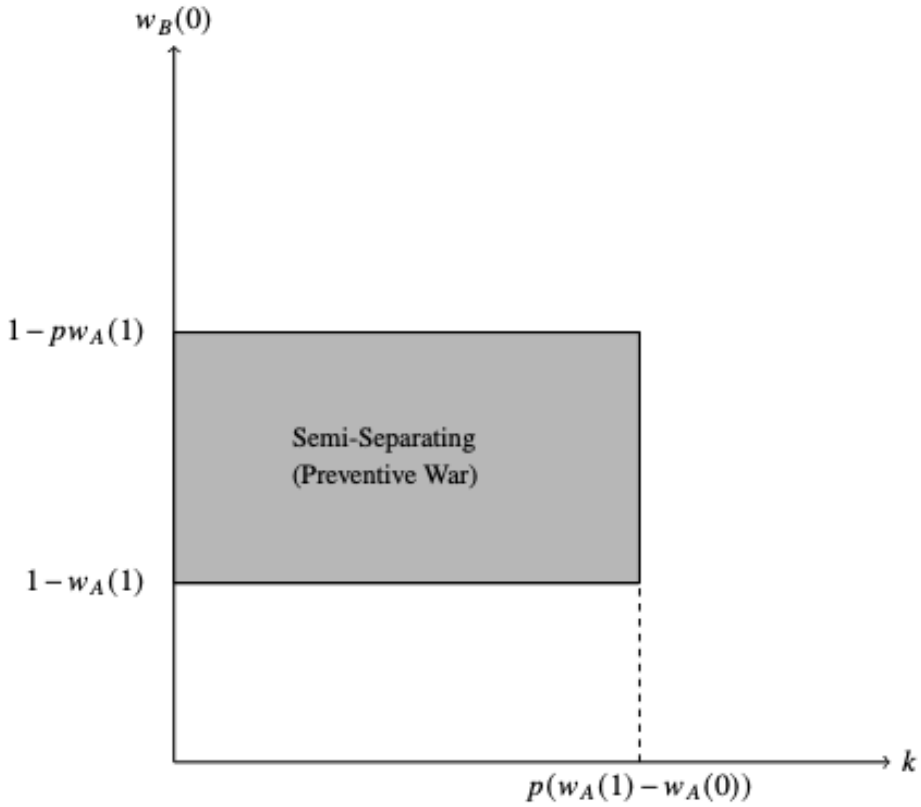


Figure: Equilibrium without Alliance

Appendix: Equilibria

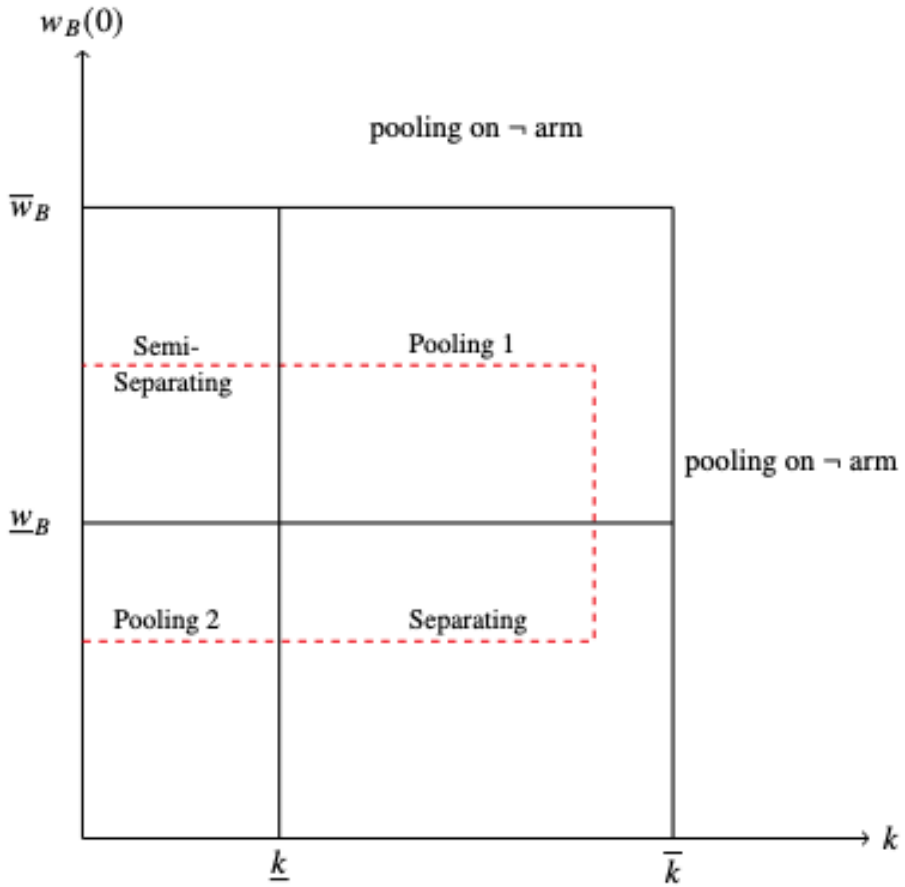
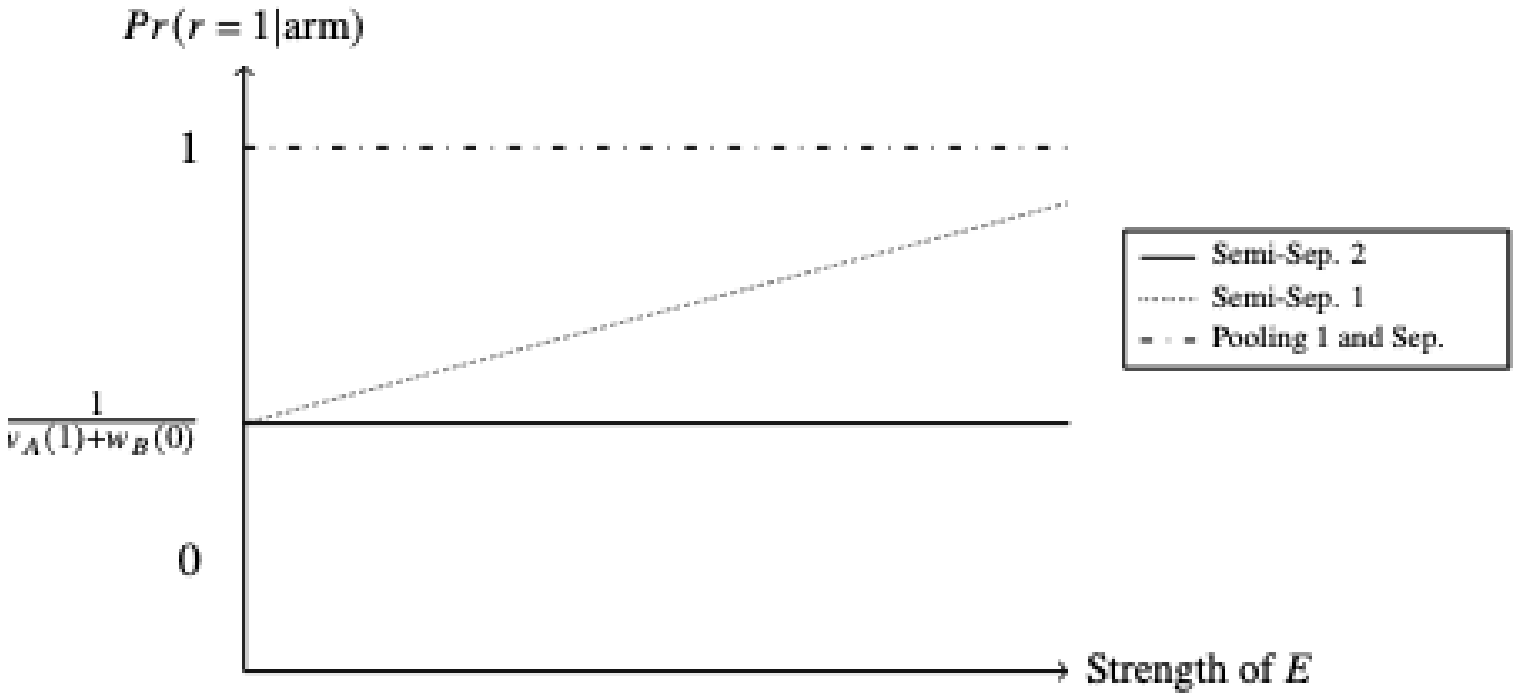


Figure: Equilibrium with Alliance

Appendix: B's Belief and Screening Effect



B's belief that A is a revisionist after arming ($Pr(r = 1|\text{arm})$) is higher in the main model (dotted lines) than the baseline model (solid line).

$\rightarrow$ arming, coupled with an alliance, is a clear sign of revisionism.

$\rightarrow$ a sign of the screening effect