Economic Barriers to the Security Dilemma

ISA 2019

Daniel Kent
PhD Candidate, Political Science
The Ohio State University
kent.249@osu.edu

3/30/2019

Question

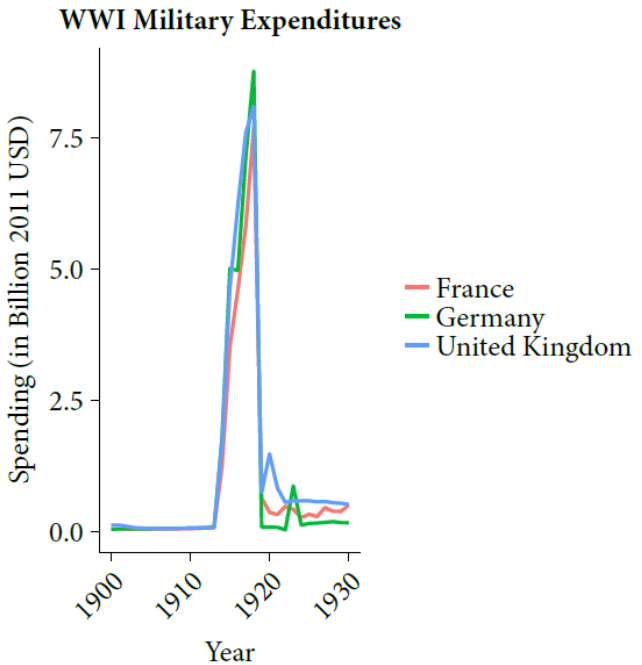
How do states lessen the severity of the security dilemma?

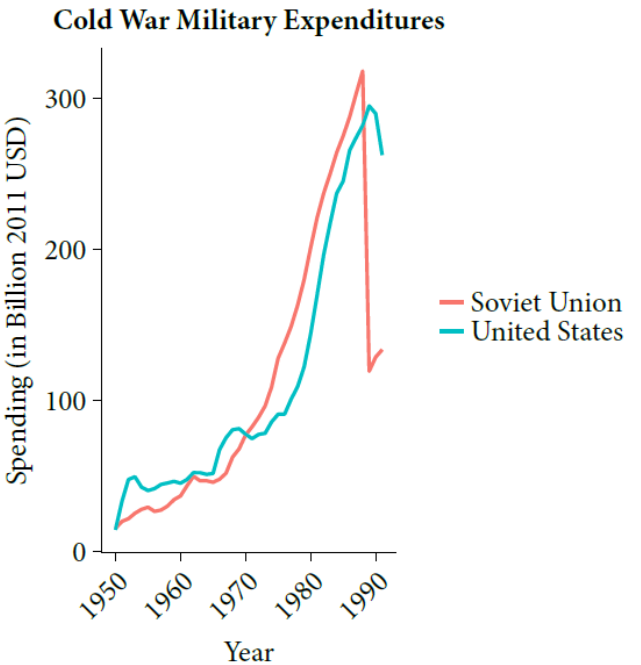
Security Dilemma

- The means by which a state makes itself more secure make others less secure.
- Jervis (1978): 3520 citations according to Google Scholar
- Glaser (1997): 615 citations
- Etc.

Spiral Model

- Worst case scenario: reciprocal spirals of insecurity lead to war
- Even if no war, economic costs (Fearon, 2018) and damage to trust (Kydd, 2007) are mutually undesirable





Sources of variation

- Distinguishable intentions
  - Can defensive intentions be distinguished from offensive intentions?
- Offense-Defense Balance
  - Do dominant military technologies favor offense or defense?

But...

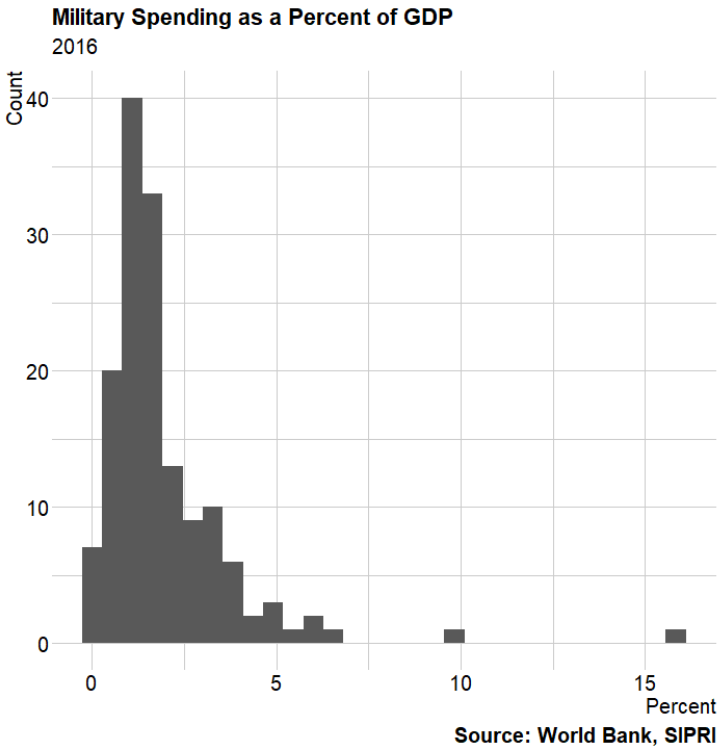
- Distinguishable intentions:
    - Copeland: **Uncertainty of *future* intentions**
    - Fearon: **Incentives to misrepresent private information: *why not act defensive?***
    - Snyder and Borghard: **Leaders prefer to not fully reveal intentions or tie their hands to one set path**
- Offense-Defense Balance:
    - Biddle: **Technological balance is murky, *capability employment* matters most**
    - Glaser and Kaufmann: **Incredibly hard to operationalize**

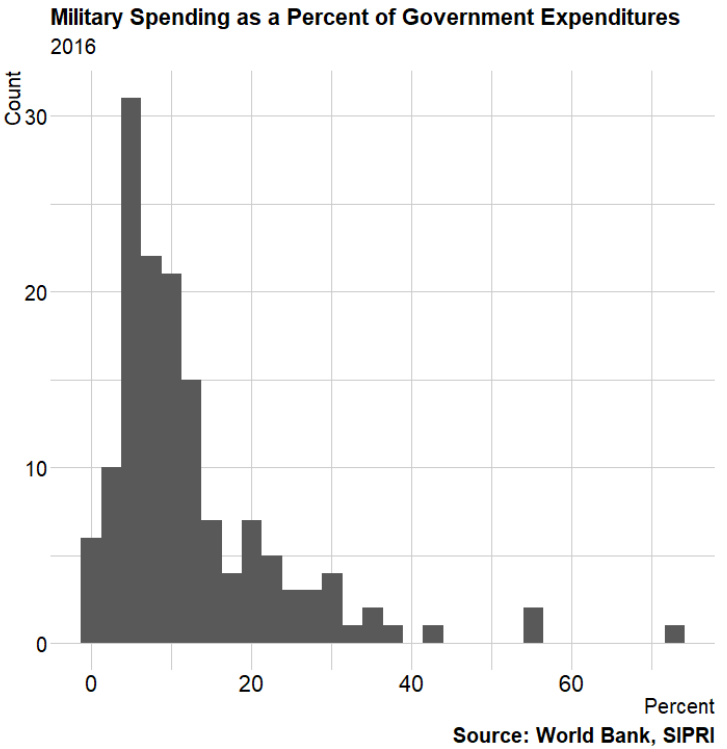
Puzzle

- Theoretically, the problem appears inescapable

Puzzle

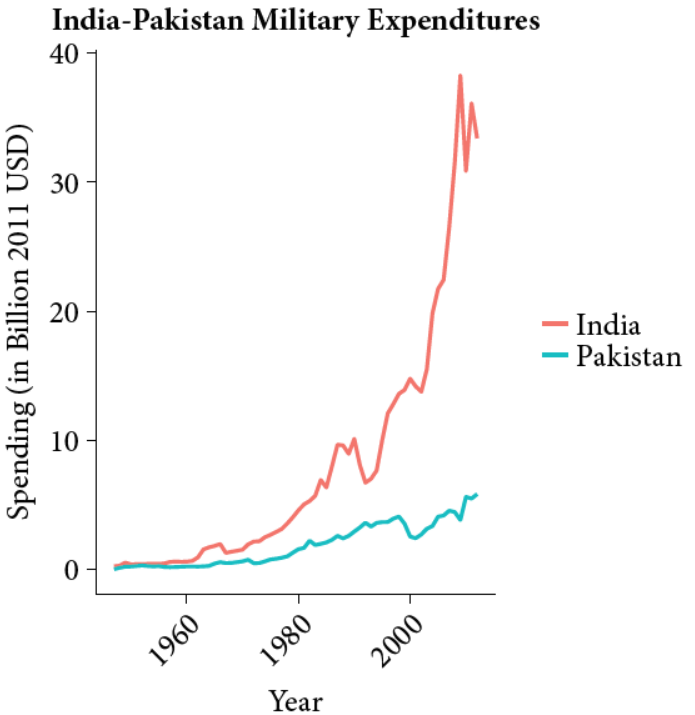
- But if we take a step back, then the problem appears overblown.

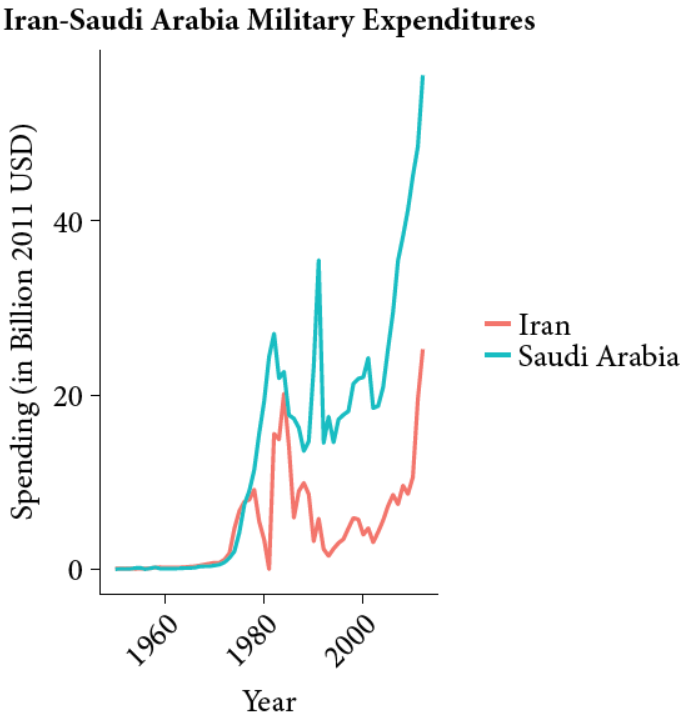




Puzzle

- Even in rivalries where an issue is under dispute, it is not clear if a spiral is present. Equally as plausible, one state may be just keeping up and attempting to deter the larger state.





Puzzle

- So what gives? Why this gap between theory and reality?

Argument

For almost all states, the security dilemma is largely irrelevant. Military parity with leading powers is *economically infeasible*.

Often, the only way to win is not to play.

Why a computational model?

- Most important variable is not observable in reality: percent of *available* capital to military.
    - The state cannot access all GDP and current national expenditures could be larger.
- Easily links domestic explanations of foreign policy (e.g. Weeks (2014), Milner and Tingley (2015)) and systemic/structural approaches (e.g. Braumoeller (2013), Waltz (1979))
- Speaks to formal literature of political economy of national security (e.g. Fearon (2018), Poast (2019))

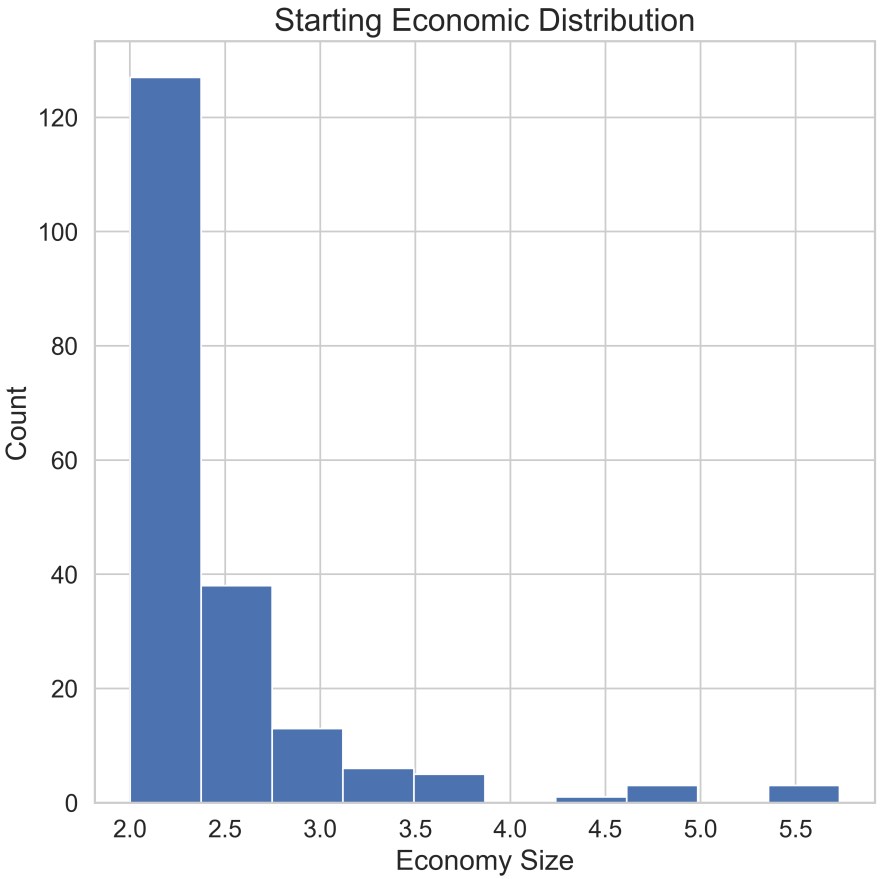
Model

- Computational model of state growth and military spending in an n-player system.
- Setup:
  - 14x14 grid
  - One agent (state) per cell
  - Parameters:
    - GDP
    - Growth
    - Max extractable capital
    - Domestic needs
    - Military size

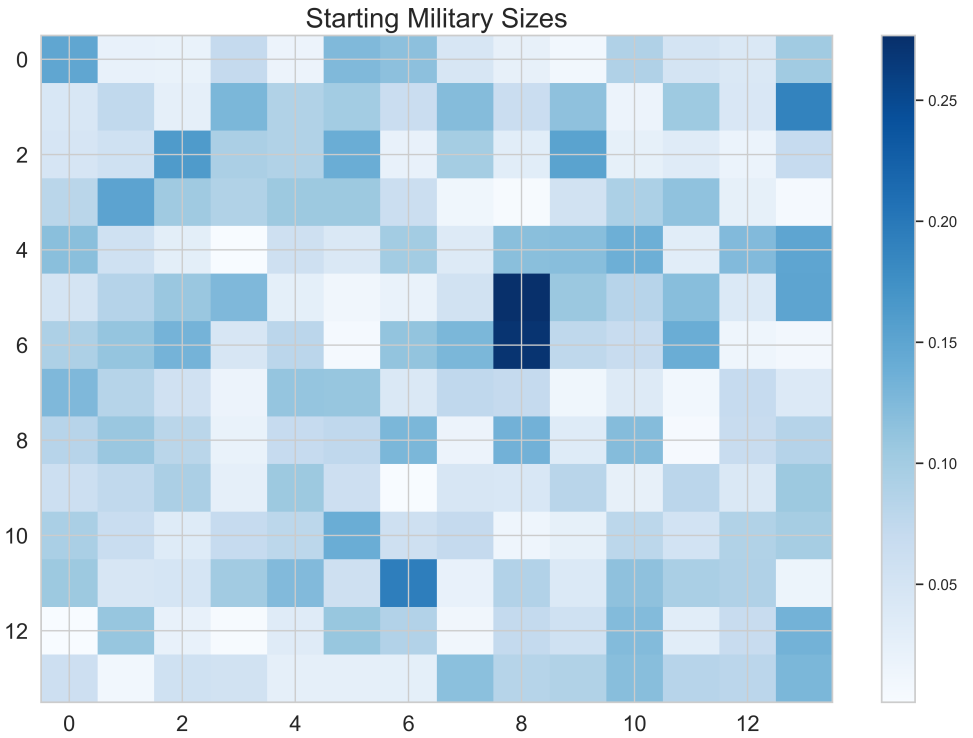
Model

- Decision rule:
  1. Record each neighbor's military size
  2. Assess the difference between the size of each neighbor's military and one's own
  3. Calculate available capital
     - (GDP * extractable capital) - domestic needs
  4. Consider n largest neighbors for balancing
     - n can be varied from 1 to 8
  5. Balance against the largest neighbor possible
  6. If each of n largest neighbors is too large to balance against, then save capital
  7. Military spending is removed from GDP

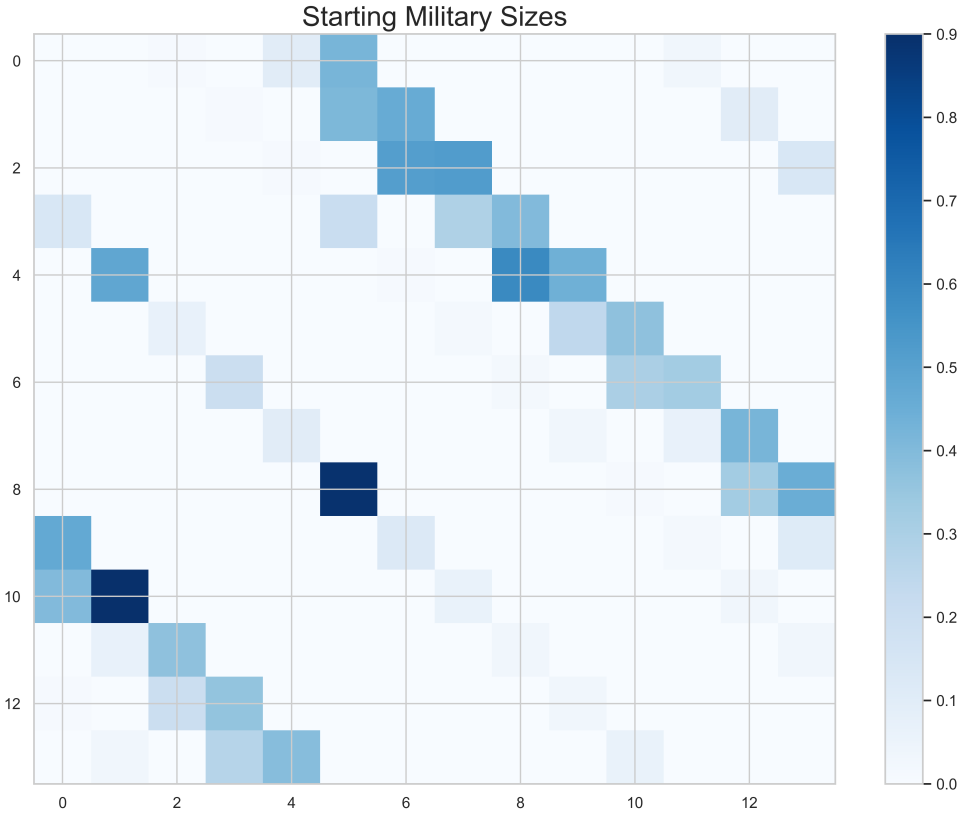
Starting conditions: GDP



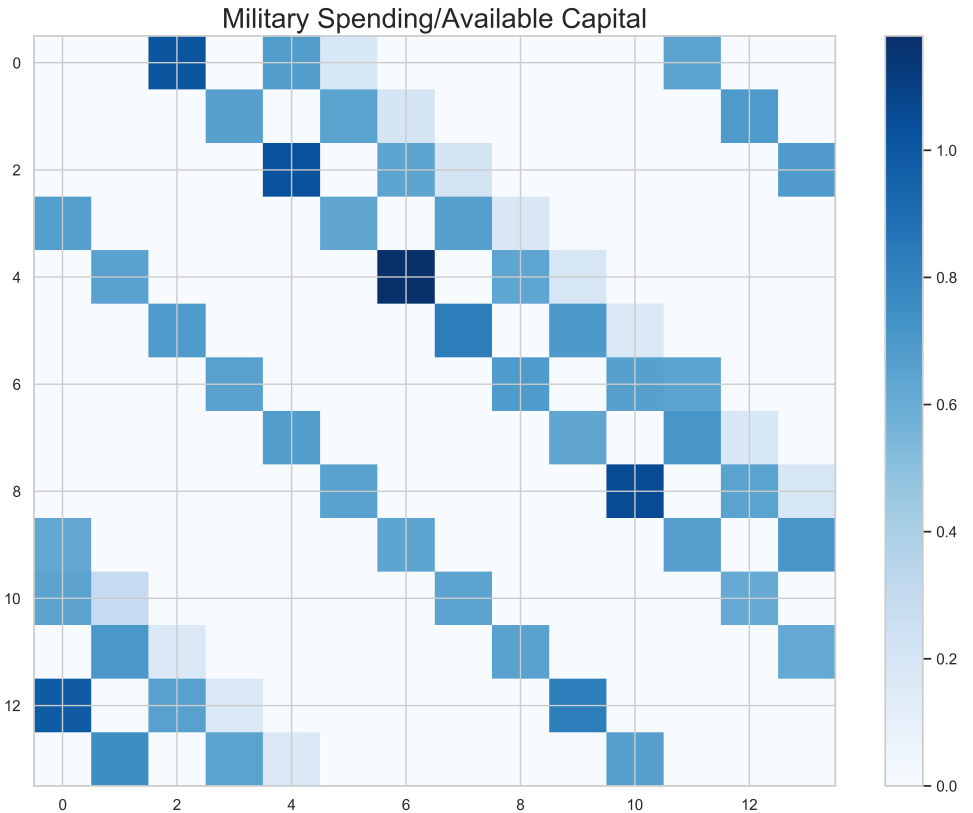
Starting conditions: Military



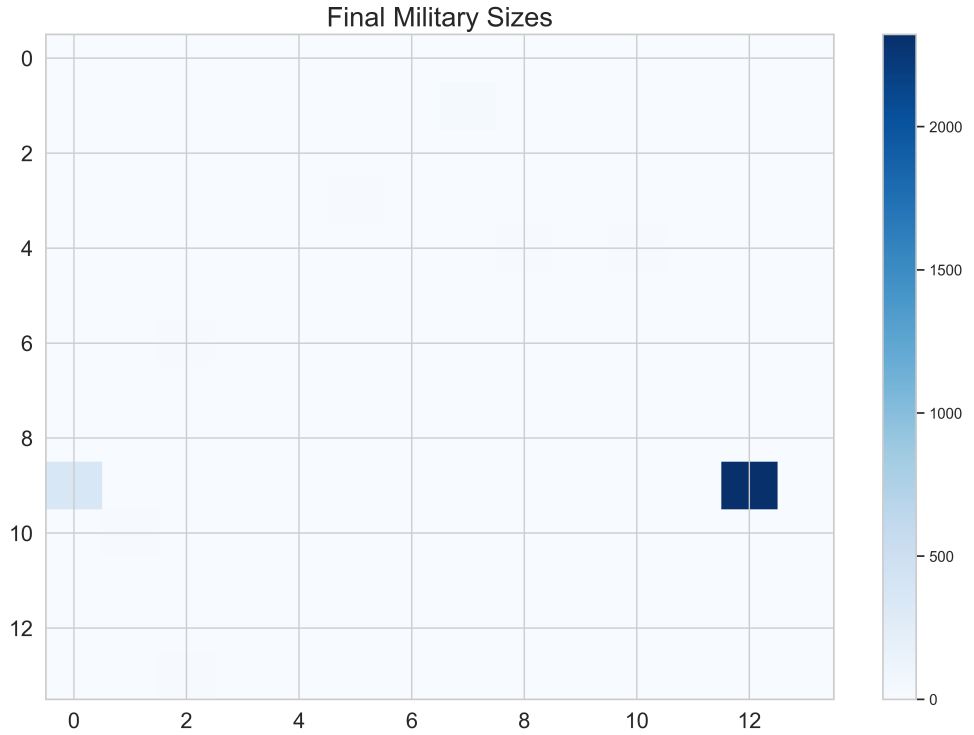
100 Iterations: Military



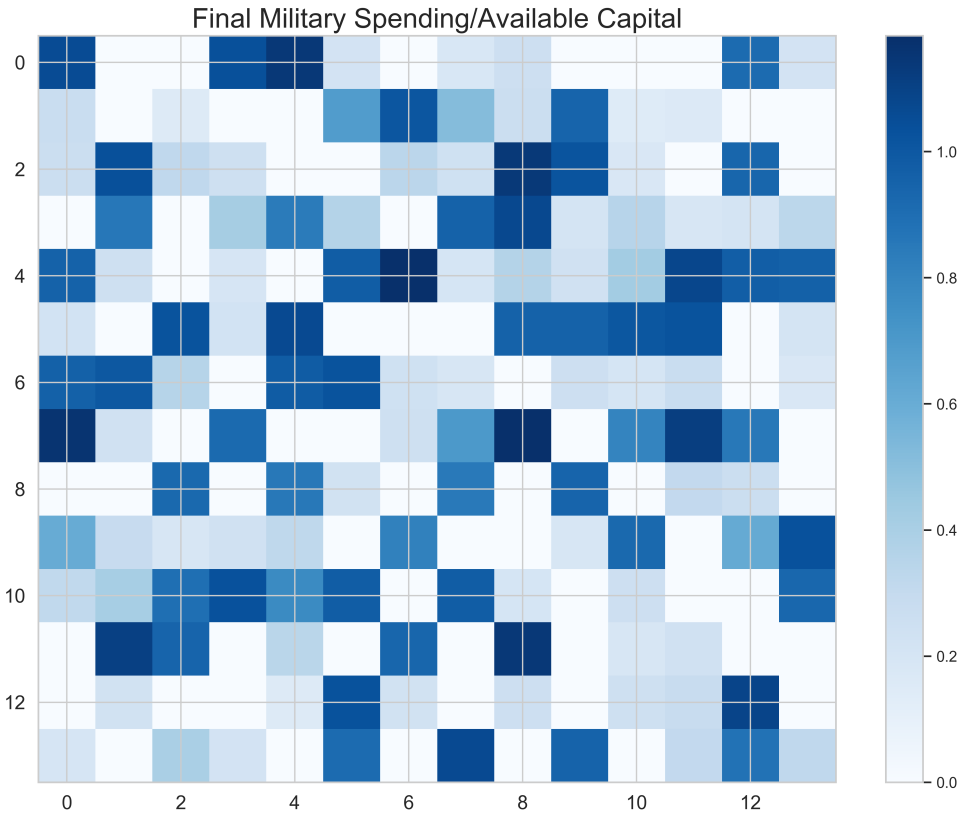
100 Iterations: Military/Available Capital



1000 Iterations: Military



1000 Iterations: Military/Available Capital

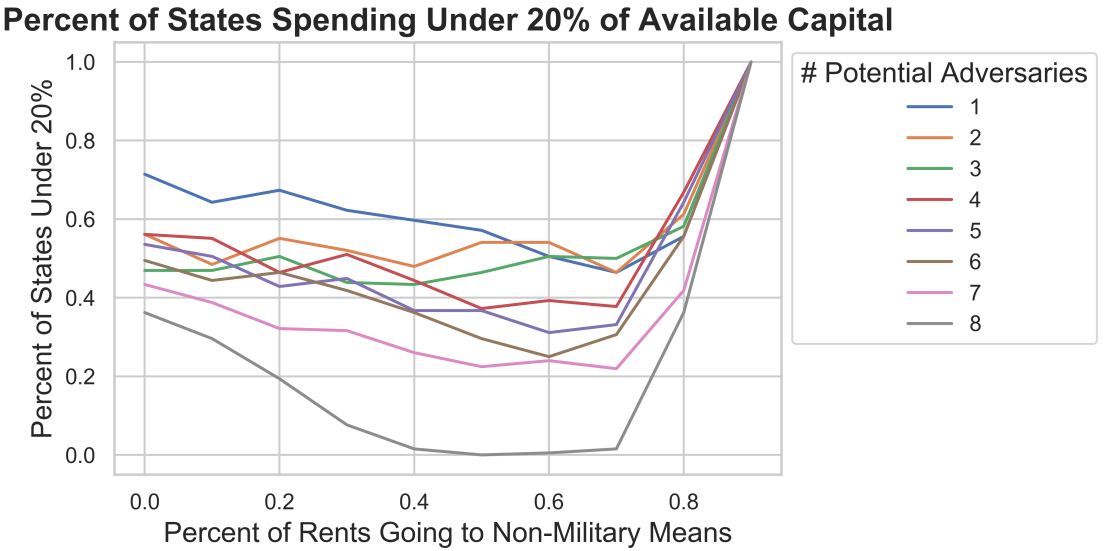


Parameter sweep

- Vary:
  1. n most powerful neighbors to consider for balancing
  2. Percent of available capital that must go to domestic spending first

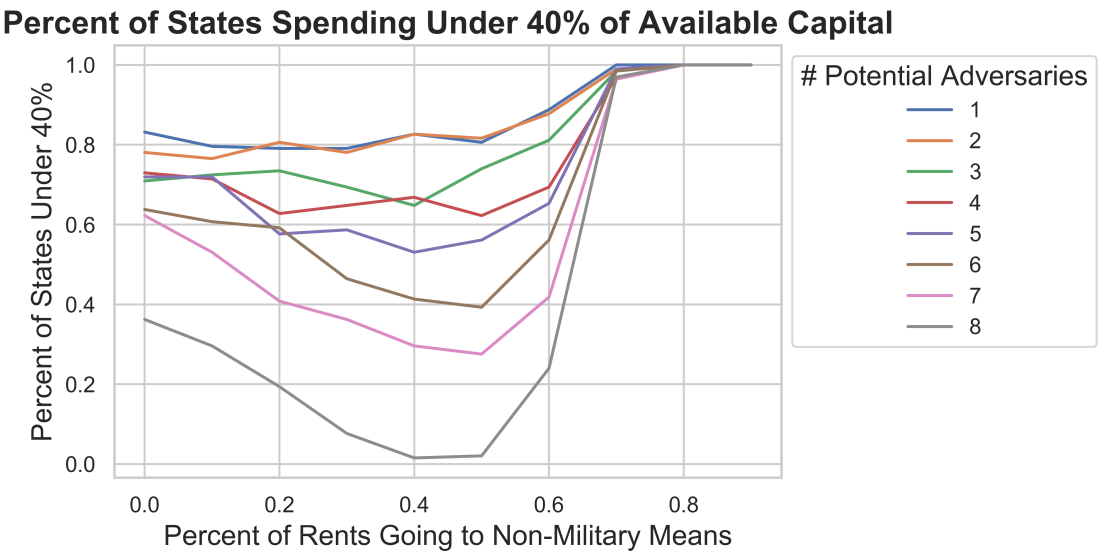
Parameter sweep

Under 20% of available capital to military



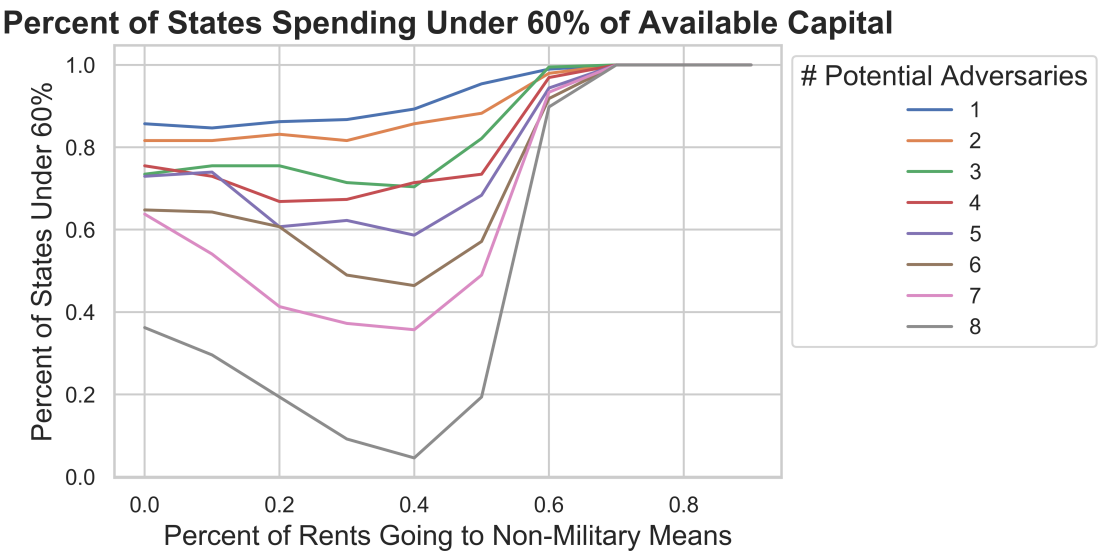
Parameter sweep

Under 40% of available capital to military



Parameter sweep

Under 60% of available capital to military



Concluding points

- By varying state size and including a simple-guns butter tradeoff, only under the most extreme circumstances do most states spend the majority of available capital on the military.
- How to best externally validate?
- Literatures this speaks to:
    - Hierarchy: *Why are states willing to cede autonomy to a hierarch?*
    - Nuclear weapons: *Why risk going nuclear?*
    - Spiral vs. Deterrence Model: *Contradictory prescriptions and explanations, which fits best?*

Thanks!

kent.249@osu.edu

dnkent.github.io