TROOPS OR CASH? ANALYZING THE INTERDEPENDENCIES BETWEEN MILITARY AND FINANCIAL COOPERATION

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How are financial and military cooperation related?

- Existing work: Commercial peace theory

- Economic interdependence?
  - Decision to go to war is a government activity.
  - Replace trade (private activity) with bilateral lending (government activity)

- Security cooperation?
  - Formal alliances are rarely activated; new alliances are uncommon
  - Defense cooperation agreements (DCAs) have proliferated.
Our Approach

- Methodological challenges
  - Endogeneity across networks
    - loans $\rightarrow$ DCAs
    - DCAs $\rightarrow$ loans
  - Endogeneity within networks
    - Individual loans are not independent events: loans $\rightarrow$ loans
    - Individual security agreements are not independent events: DCAs $\rightarrow$ DCAs

- Our approach: Model co-evolution of these networks over time
**STARTING POINT**

- **Direct effects**
  - A. loans $\rightarrow$ DCAs
  - B. DCAs $\rightarrow$ loans

- **Competition effects**
  - C. Position in loan network $\rightarrow$ DCAs
  - D. Position in DCA network $\rightarrow$ loans

- **Information effects**
  - E. Loan relationships with third parties $\rightarrow$ DCAs
  - F. DCA relationships with third parties $\rightarrow$ loans
Issue linkage

“If the USG determines that Turkey is not "fully cooperating" with the USG on military matters, the USG would inform Turkey that it was suspending Turkey’s right to obtain disbursements.” (Loan agreement between U.S. and Turkey)

Side-Payments

“China believes it must foster economic development in Central Asia in order to create a more secure environment because economic backwardness contributes to instability” (Cable from U.S. Embassy in China)

H1: A bilateral loan between i and j increases the probability of a DCA between i and j
B. DCAs → Loans

Direct Effect

- Issue linkage (again)
  
  “Jiang said that China was not completely satisfied with its recent loan-for-oil agreement with Russia. [...] Yan noted that the military’s support for the deal had weighed heavily in the central government’s decision to move forward with it.”
  
  (Cable from U.S. Embassy in China)

- Build up capacities of allies
  
  “The two sides are also expected to discuss regional security, and strengthening cooperation in the fight against terrorism, extremism and separatism. [...] In addition, Chen Yuan, Chairman of China’s Development Bank arrived in Dushanbe to sign an agreement providing a USD 10 million loan.”
  
  (Cable from U.S. Embassy in Tajikistan)

⇒ H2: A bilateral DCA between i and j increases the probability of a loan from i to j
Active creditors are unattractive security partners
  - Aristotle: “A friend to all is a friend to none”
  - Active creditors exhibit diffuse political commitments

\[ i \rightarrow \begin{array}{c} k \\ j_1 \rightarrow k \\ j_2 \rightarrow k \end{array} \]

\[ k \leftrightarrow \begin{array}{c} k \\ k \leftrightarrow k \end{array} \]

\[ i \leftarrow \begin{array}{c} k \\ k \leftarrow k \end{array} \]

\[ H3: \text{Countries that are highly active creditors in the loan network are less attractive as DCA partners} \]
Loans only meaningful if they purchase influence

"Thailand remains a vital military ally, one of only five in the East Asian and Pacific region. […] We face increasing competition in this regard from China, though, which is ramping up its military ties with other countries in the region. […] I hope that you also will have the opportunity to press for deeper economic cooperation."

(Cable from U.S. Embassy in Thailand)

$\implies$ H4: Countries that are highly active in the DCA network are less attractive as potential loan recipients
Similar loan portfolio imply shared interests

\[ k \rightarrow j_1 \]
\[ k \rightarrow j_2 \]

\[ H5: \text{Countries with similar borrowing portfolios are more likely to sign DCAs} \]
Lending is risky, thus lending by trusted friends provides information.

\[ i \quad \tilde{\rightarrow} \quad k \quad \tilde{\rightarrow} \quad j_1 \quad \tilde{\rightarrow} \quad j_2 \]

\[ H_6: \text{Creditors prefer to lend to the same debtors as their DCA partners} \]
CONTROL VARIABLES

These effects should persist even after controlling for . . .

DCA equation
- GDP per capita
- total bilateral trade
- military power
- formal military alliance
- NATO member
- common enemy
- common terrorist threat
- Regime type
- colonial legacies
- UN voting affinity
- distance between capital cities

Loan equation
- credit rating
- currently in default
- GDP per capita
- exports and imports
- oil reserves
- corruption
- formal military alliance
- Polity similarity
- colonial legacies
- UN voting affinity
- distance between capital cities
RESULTS

DCA Equation

Loan Equation

-4 0 4 8
Rescaled estimates + 95% CIs

Indegree_j
Outdegree_j
Transitivity
Oil_reserves_j
GDP_i
GDP_j
Corruption_j
Default_j
Distance
DCA_closure
DCA_degree_j
DCA_bilateral

-10 -5 0 5 10
Rescaled estimates + 95% CIs

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CONCLUDING REMARKS

Significance

- Rise of China and India as new creditors might not only have economic effects but also has implications for international security.
- Changing flows of bilateral loans might predict changes in military alliances, and eventually, the potential for international war.
The challenge:
- Endogeneity within networks: loans → loans; DACs → DACs
- Endogeneity across networks: loans → DACs; loans → DACs
- Dynamics: Co-evolution of these networks over time

Stochastic actor-oriented models (SAOMs) (e.g., Snijders et al., 2013)
- Specify separate DCA (x) and loan (y) network equations
- Include (1) controls, (2) endogenous effects, and (3) cross-network effects
- Simulate coevolution of x and y networks
- Sample from parameter space
- Minimize differences b/w simulated and observed networks

\[ f_i^X(x, y) = \sum_{h=1} \beta^X_{ih} s_{ih}^X(x, y) \]
\[ f_i^Y(x, y) = \sum_{h=1} \beta^Y_{ih} s_{ih}^Y(x, y) \]
**Figure:** Goodness of Fit, with and without Network Effects

- **SAOM without network effects**
  - Bilateral DCA (AUC=0.698)
  - Bilateral loan (AUC=0.935)

- **SAOM with network effects**
  - Bilateral DCA (AUC=0.974)
  - Bilateral loan (AUC=0.995)