Counterparty Choice, Bank Interconnectedness, and Systemic Risk

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Motivation

Nearly half of the arrangements in the OTC derivative markets involve non-bank counterparties with multiple bank relationships

• Bank interconnections through common counterparty (CP) exposures have been previously identified as a source of systemic risk (BCBS (2011), FCIC (2012))
• Recent events (e.g., Archegos) have reinforced concerns

Systemic risk-shifting: connected banks’ choices of risk exposure are strategically complementary (Jackson & Pernoud (2019), Shu (2019))

• Banks may choose to expose themselves to greater risks in financial networks, particularly densely connected ones, amplifying contagion risks

Do bank CP choices reflect systemic risk-shifting behavior? If so, to what extent does it propagate systemic effects?

1. Confidential data allow us to precisely quantify bank-CP network mapping
2. Econometric methods help isolate risk-taking from other channels
CCAR Bank Counterparty Disclosures (FR Y-14, Schedule L)

- Counterparty-level data for largest U.S. G-SIBs
- Accounts for 35.7% of global OTC derivative markets
- Focus on uncleared positions: 48.7% of all activities by reporting banks
Identification Challenges

How does interconnectedness (IC) influence bank CP choice?

**Issue**: Interconnectedness may be correlated with unobservable demand (i.e., CP) and other supply (i.e., bank) factors
- The effect of IC on CP choice may not be necessarily due to bank risk-shifting

- **Demand**: Larger CPs better able to afford fixed costs of multiple dealer relationships, post collateral, may be of better quality
- **Supply**: Larger banks may have larger / different trading businesses, face differing regulatory restrictions, better able to manage CP risks

**Our Approach**: Use fixed effects estimators that purges *time-varying* unobservable CP and bank factors in our tests
Results: Bank Systemic Risk-shifting

Banks prefer high IC CPs
• The effect is much stronger for CPs with higher default probabilities
• Results mainly hold for CPs that represent sizable bank exposures

Following a major shock (i.e., pandemic), these relationships reverse
• Banks reduced or severed links with distressed, interconnected CPs

These findings are pronounced for NBFI CPs
Is bank IC related to systemic risk? Does this relationship differ during normal versus stress periods?

- Exploit pairwise bank common CP exposures

**Bank IC positively associated with systemic risk outcomes in the following quarter**

- Effects significantly increase for NBFI CPs during stress periods
Implications

1. Bank regulators primarily focus on direct bank-CP relationships
   • Existing data can be used to quantify and monitor broader connections

2. Bank behavior may exacerbate fragility related to dense network structures through CP choice
   • However, banks demonstrated resilience in the face of severe shocks in March 2020, aided in part by regulatory interventions and post-crisis regulations

3. Systemic risk-shifting behavior by banks may also be present in CCPs