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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

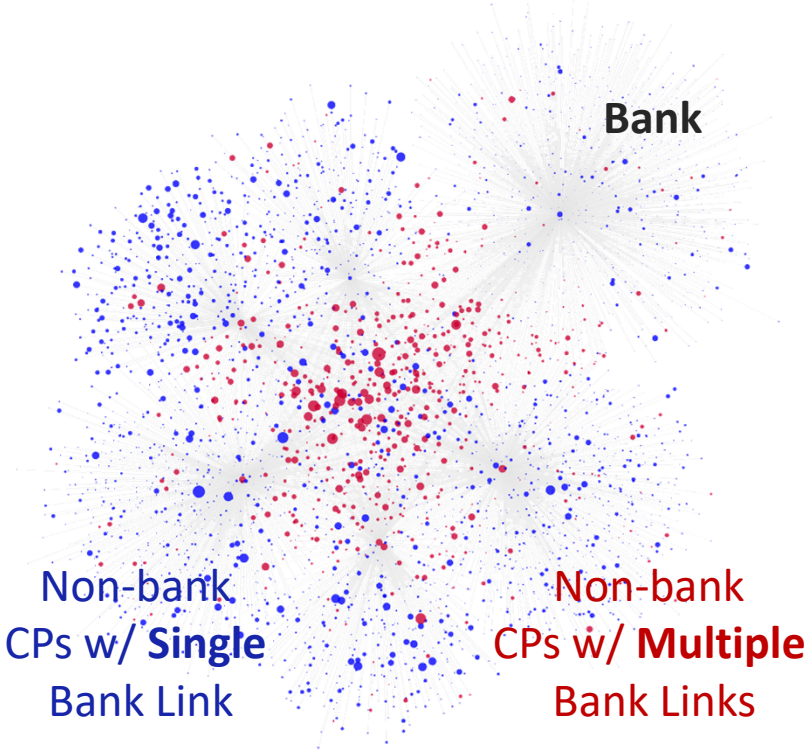
Do bank CP choices reflect systemic risk-shifting behavior? If so, to what extent does it propagate systemic effects?

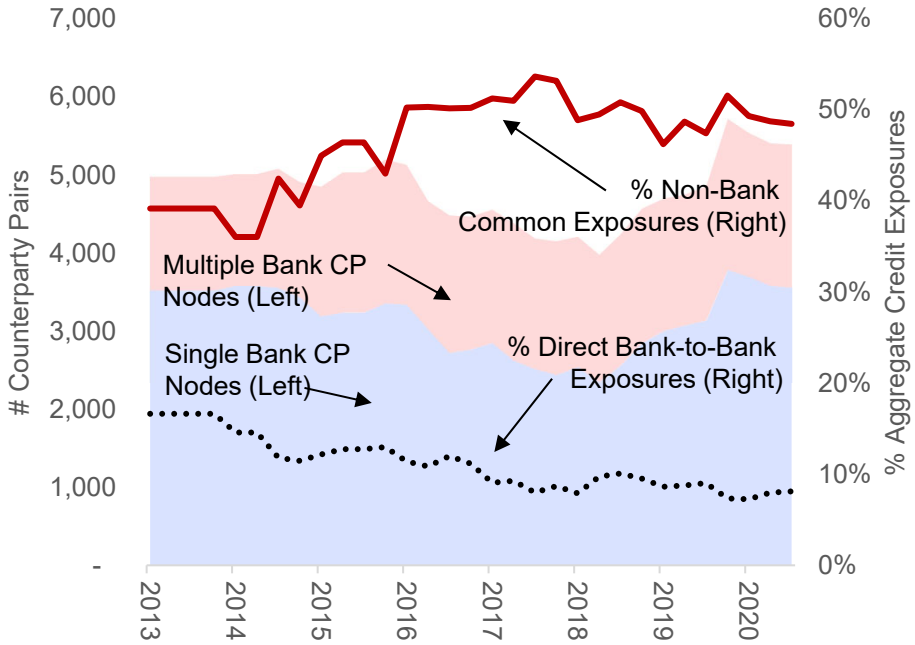
1. Confidential data allow us to precisely quantify bank-CP network mapping
2. Econometric methods help isolate risk-taking from other channels

Data

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





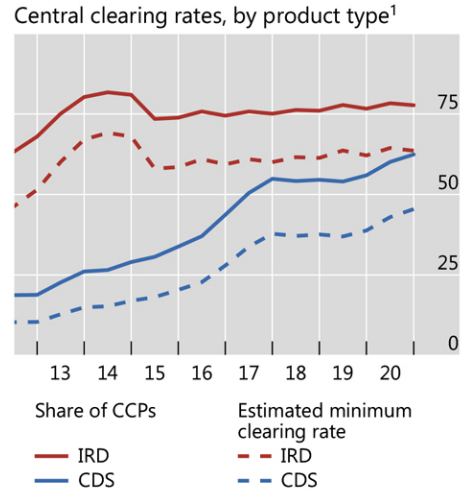
Identification Challenges

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

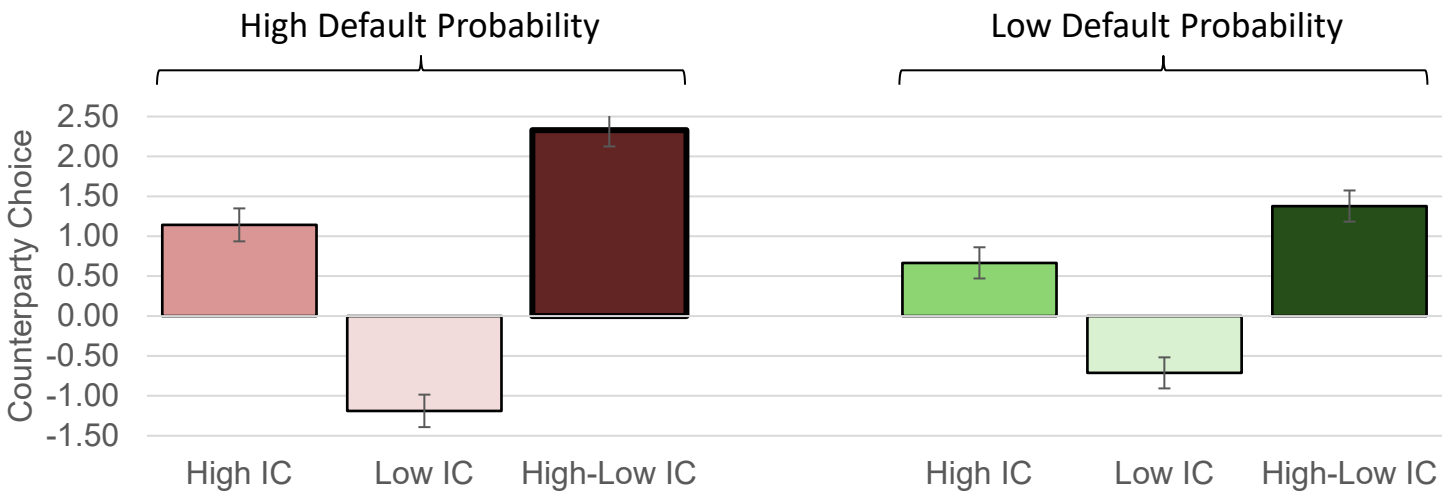
Banks prefer high IC CPs

- 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



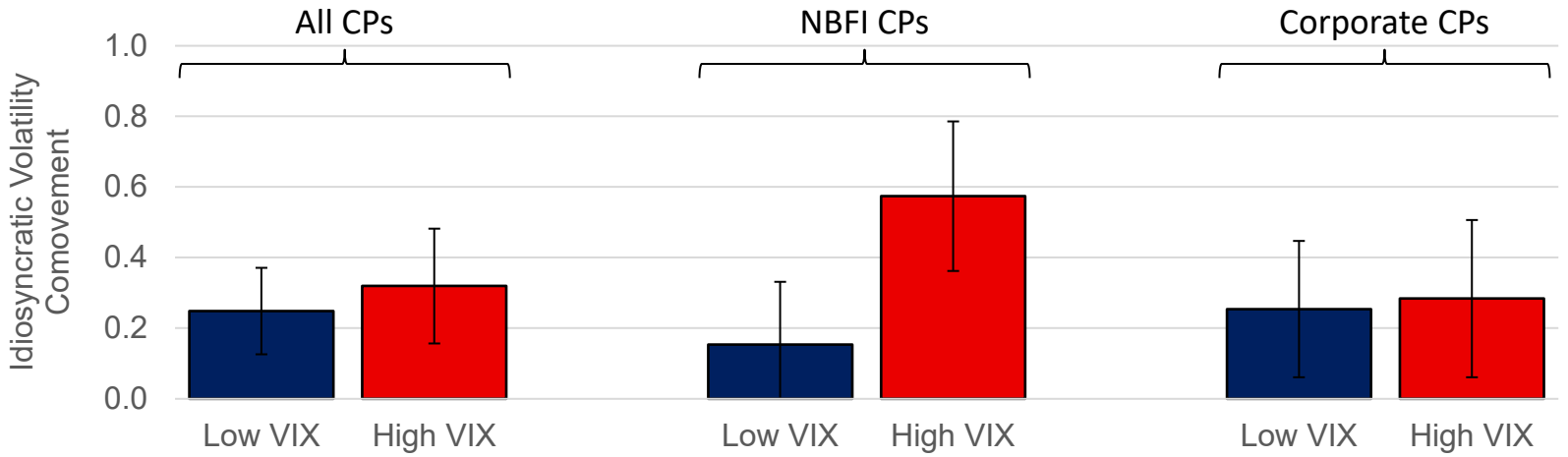
Results: Systemic Risk

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