

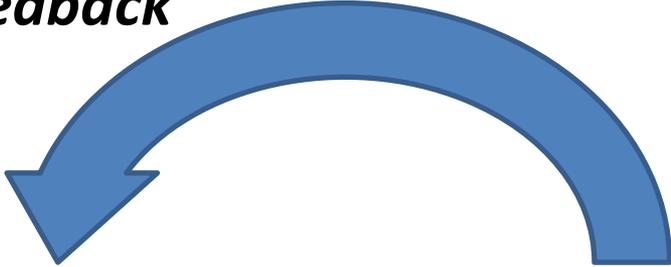
Cross-Border Bank Contagion

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European Central Bank, November 2012

Discussant:

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University of Kansas

Feedback



Common Shock



Contagion



Credit Crunch



Precipitating Event

- Macro Shock
- Market Shock

Bank(s)

- Equity ↓

Other Bank(s)

- Equity ↓

Borrowers

- Firms
- Households

Three Papers

1. Degryse, Elahi and Penas

Precipitating event: None identified; starts with Common Shocks.

Contagion: Bank region → Bank region.

Final event: Market-value bank equity declines.

2. Ongena, Peydró and van Horen

Precipitating event: Financial crisis in U.S./Europe.

Contagion: Banks → Firms.

Final event: Credit crunch.

3. Greenwood, Landier and Thesmar

Precipitating event: Theoretical asset price shock.

Contagion: Banks → Asset prices → Banks...

Final event: Book-value bank equity declines.

1. Degryse, Elahi and Penas

Purely empirical investigation: Search for evidence of bank-to-bank contagion within and across four large geographic regions (Asia, Latin America, U.S., Europe).

- Daily observations: 19 country-level bank stock indices, 1994-2010.
- A “coexceedance” occurs when two or more countries in same region experience large same-day fall in stock indices.

Model 1: Model of within-region fragility.

- What are determinants of coexceedances within a region?
- Contagion not captured; really a model of common shocks.

Model 2: Model of across-region contagion.

- Contagion occurs when daily coexceedances in one region precede (by a few hours) coexceedances in another region.

1. Degryse, Elahi and Penas

Findings:

- Common shocks (fragility) more likely when region has low capitalization, low liquidity, and high market concentration.
- Cross-region contagion exists. Tends to run from developed regions (U.S., Europe) to Asia and Latin America.
- High amounts of bank liquidity and bank capital make a region less susceptible to cross-region contagion.

1. Degryse, Elahi and Penas

Model 1: Within-region fragility

- **Multivariate logit model:** # of daily coexceedances in region.
- **Test variables:** Region-average macro and banking conditions.
- **Contagion measure:** $1-R^2$.

- Methodological issues:
 - The contagion measure pools specification error with contagion.
 - Test variables observed quarterly (not daily). Daily macro/market common shocks unobserved.
 - Test variables are regional averages (not country-level).

1. Degryse, Elahi and Penas

Model 2: Across-region contagion

- ***Multinomial logit model:*** # of daily coexceedances in region.
- ***Test variables:*** # of coexceedances in other regions.
- Methodological issues:
 - A better way to test for contagion. Region pairs are defined and measured. Timing is defined.
 - Not convinced that authors are identifying region-to-region propagation separately from common multi-region shocks.
 - Could use data on daily macro/market shocks in each region.

2. Ongena, Peydró and van Horen

Question: Was the financial crisis in the U.S. and Western Europe transmitted to local business firms in other regions? If so, through which international banking channel did this propagate?

- Authors use annual 2005-2009 data on 208 banks and 43,847 client firms in 14 Eastern Europe and Near Asia countries.
- Authors identify and investigate two channels:
 - Local International banks: Some firms borrow from banks that get funding from international liquidity markets.
 - Local Foreign banks: Some firms borrow from banks that are affiliates of foreign banks.
 - Control group: Firms that borrow from “purely local” banks.

2. Ongena, Peydró and van Horen

Findings:

- Did crisis spillover to local bank lending?
 - Local International banks: Substantial and immediate reductions in local lending.
 - Local Foreign banks: Substantial, but delayed, reductions in local lending.
 - Core deposit funding dampened these effects.
- Did crisis spillover to local firm performance?
 - Firms at Local International banks: No decline in firm performance.
 - Firms at Local Foreign banks: Eventual, but not immediate, decline in firm performance.

2. Ongena, Peydró and van Horen

Some problems and potential improvements:

- Identification of the two channels could be improved by more carefully defining variables:
 - Can you measure Local International banks' strength of reliance on international liquidity (as opposed to a dummy)?
 - Can you observe location of Local Foreign bank parents (i.e., are parents in the U.S. and/or Western Europe)?
- NOTE: 87% of purely local banks (control group) are located in the same places:
 - located in former Yugoslavia states (63%).
 - located in Romania (24%).

2. Ongena, Peydró and van Horen

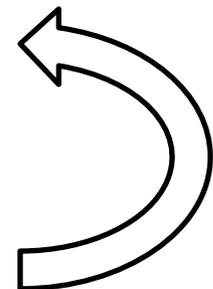
Big unanswered question: Why is there no strong empirical association between reduced bank lending and firm performance?

- Are firms finding other sources of funding?
 - If so, then the contagion is limited to the marginal increase in alternative cost of funding.
- Are firms able to “get by” in the short-run...but will suffer in the long-run?
 - Would adding 2010 firm performance data tell a different story?

3. Greenwood, Landier and Thesmar

1. Theoretical model of asset price shocks on bank asset values.

1. Exogenous price shock
2. Banks suffer losses on assets (direct)
3. Regulatory capital minimums violated
4. Banks de-lever by selling assets
5. Price shock from “fire sale”
6. Banks suffer losses on assets (indirect)



Model iterates to convergence

- Size of bank losses depends on characteristics of SIFIs:
 - Bank size, bank exposure, cross-bank exposures, leverage, asset liquidity.
- Contains key risk concepts that other researchers measure:
 - Contribution: “Systemicness” is similar in spirit to “CoVaR.”
 - Sensitivity: “Indirect vulnerability” similar in spirit to “MES.”

3. Greenwood, Landier and Thesmar

2. Simulate the model: Data for 90 largest EU banks in 2010-2011, under different policy scenarios.

- Establish some benchmarks: An immediate 50% write-down on all GIIPS sovereign debt results in:
 - Aggregate Vulnerability (AV) = 245% of total industry equity
 - Direct Vulnerability (DV) = 111% of equity at average bank
 - Indirect Vulnerability (IV) = 302% of equity at average bank
- Conduct a smell test: Cross-sectional regressions of 2010-2011 bank equity returns.
 - Market returns declined with increases in DV and IV.
- Policy experiments

3. Greenwood, Landier and Thesmar

Policy simulation findings:

- **Cap bank size:** AV ↑ slightly.
- **Eurobond swap-out:** AV ↑ slightly.
 - These two results may be circumstantial.
- **Merge good-bad banks:** AV ↑ slightly.
 - Good banks get contaminated.
- **Cap financial leverage:** AV ↓ substantially.
 - Capping leverage is ex ante and across-the-board. Lending will decline.
- **Inject equity:** AV ↓ substantially.
 - Injecting equity is ex post and targeted. Moral hazard will increase.

3. Greenwood, Landier and Thesmar

Some issues and questions:

- Implicit assumption that assets are marked-to-market.
 - If assets not marked-to-market, or if supervisors forbear, then the feedback slows down. Uncertainty will increase. Markets may not clear.
- TARP 1.0 would have purchased assets.
 - Government asset purchases would prevent fire sales. Hence, no indirect vulnerability. (Same as perfect asset liquidity.)
 - Market for private label securitizations broke down. So banks could not even get fire sale prices.

Wrap Up

- Three interesting papers, each with nice potential.
- Observation: The findings in these studies often remind us of the basics:
 - Capital
 - Liquidity
 - Core deposits
 - Competition

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Discussion from the floor