Discussion of “Risk Assessment for Banking Systems” by H. Elsinger, A. Lehar, M. Summer

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* Any views expressed represent those of the author only and not necessarily those of the Federal Reserve Bank of New York or the Federal Reserve System.
“Europe simulates financial meltdown”

(Headline in FT, April 10, 2006, p.2)
Two channels for systemic risk

- DeBandt and Hartmann (2002)
  - Narrow contagion
  - Broad simultaneous shock

- **Narrow**: may result in downstream defaults ("domino effect")

- **Broad**: big shock resulting in widespread direct defaults

- Which one matters more?
  - Frequency
  - Severity

- Can it be prevented, and at what cost?
All 3 papers address “joint risk” issue

- Especially at the systemic level, hard to separate market and credit risk

- Requires joint treatment
  - Common factors (bottom-up)
  - Aggregation with inter-risk correlation (top-down)
  - “Joint risk instrument” (direct)

- Elsinger, Lehar & Summer plus Barnhill & Souto examples of bottom-up

- Avesani, Pascual & Li example of common (credit default swaps)
Risk management + network analysis

- Elsinger, Lehar & Summer combine modern risk management tools with network analysis
  - Joint treatment of market & credit risk
  - Address question at the system level (for them, Austria)
  - Bank are connected to each other (network)
  - Network is “open”

- Take advantage of detailed “systemic balance sheet” information

- This is a new approach with great promise
  - Explicit “system level” analysis
  - Combines both channels of systemic risk
  - Technical innovation: allow for uncertainty in Eisenberg & Noe (2001) model
What matters?

- Broad is more important than narrow
  - But, contagion, while rare, can “wipe out major parts of the banking system”

- Bankruptcy costs / failed bank resolution drive contagion effect
  - Effect nonlinear: past some point, contagion spreads rapidly

- It’s cheap to avoid major contagion
  - For 99.9% confidence level, just 0.12% of banking system assets
Some surprises & questions

- Authors treat market & credit risk, not ops risk
  - Ops risk said to have very little impact on results

- Market risk seems very important
  - 0.5% tail of market risk-only distribution is 1.62% of total bank assets
  - 0.5% tail of credit risk-only distribution is 0.77% of total bank assets
  - But what is the 0.5% tail of the joint distribution?

- Kuritzkes, Schuermann & Weiner (2005) report 0.1% tail of loss distribution for US banking system is 0.7% - 2% of total (US) bank assets
Some surprises & questions (cont’d)

- Split between market & credit is different from industry benchmarks
  - Kuritzkes, Schuermann and Weiner (2003) report 20% market (includes ALM), 55% credit and 25% operational (includes “business risk”)
  - Rosenberg & Schuermann (2006) find 8.5% market (w/out ALM), 53% credit and 38.5% operational (w/out “business”)

- Suggest that operational risk may be quite important
  - Basel 2 is “targeting” about 12% of total
Guide for policy makers

- First-order worry: broad channel, direct effects
  - Promote good risk measurement & management at the bank level
  - Allows for more “decentralized” supervision

- Worry less about the harder-to-spot contagion
  - Detailed knowledge about inter-bank exposures not so important
  - Liquidity injection & efficient failed bank resolution as systemic crisis medicine

- Don’t worry about ops risk??
Some comments on Barnhill & Souto

- Explicit joint treatment of market & credit risk

- Treasuries (domestic) significant part of bank balance sheets in Brazil
  - Typically more than half, sometimes 80%!
  - In US, US Treasuries made up 0.5% of total bank assets in 2005Q4

- Point out importance of accounting for bank-level risk heterogeneity
  - Bad idea to “lump”
  - If you must, do it by creditworthiness
  - Consistent with theoretical & empirical results of Hanson, Pesaran & Schuermann (2006)
  - Supports idea of “decentralized” supervision
Some questions for Barnhill & Souto

- Treatment of GOB awkward
  - 1-factor model tied to Bovespa
  - Should we think of the Bovespa as the appropriate filtering of GOB-default relevant information?
  - Cart leading the horse?
  - Why not a yield spread to “risk-free”?

- How is operational risk treated?
  - Is it captured by “idiosyncratic” component?
    • By bank
    • For GOB
Some comments on Avesani, Pascual & Li

- Clever use of modern credit derivative instruments to link market & credit risk
- Innovative way to think about financial sector monitoring ("centralized" supervision)
- Recognize importance of bank heterogeneity
Some questions for Avesani, Pascual & Li

- Why latent (unobserved) instead of observable risk factors?
  - Hard to do specific policy what-ifs on latent
  - Factor dynamics? Forecasting?

- How close to conditional independence is the model?
  - Without constraint of working with observable factors, should be very close

- Is the model identified?
  - How is it possible to independently vary bank return correlation $\rho$ and bank PD $\pi$?
  - Is there a distinction between conditional & unconditional PDs?
Thank You!

http://nyfedeconomists.org/schuermann/