***The views expressed herein are those of the discussant and should not be attributed to the IMF or IMF policy.**

"Financial stability and banks" *Discussion*

Camelia Minoiu*
Research Department
International Monetary Fund

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General remarks

- 3 thought-provoking and innovative papers proposing ways to measure the build-up of systemic vulnerabilities in the financial system
- Two papers present new measures of bank-specific and system-wide vulnerability
  - LMI and "direct/indirect vulnerability"
- One paper applies a refined econometric method to compute conditional default probabilities and measure systemic risk

1- "MEASURING LIQUIDITY MISMATCH IN THE BANKING SECTOR"

Overview

- Proposes novel asset-liability measure of Liquidity Mismatch (LMI) that satisfies desirable properties:
  - Can be aggregated across banks
    - Should inform how much aggregate liquidity needs to be brought to the market during crises (policymaker)
  - Can predict some measures of bank performance
- Key innovation:
  - Dynamic choice of time horizon that makes the liquidity sensitivity weights more responsive to market conditions

Questions

- How does this conceptually relate to the Basel III structural liquidity measures, esp. NSFR?

$$LMI_t^i = \sum_k \lambda_{t,A_k} x_{t,A_k}^i + \sum_{k'} \lambda_{t,L_{k'}} x_{t,L_{k'}}^i ,$$

- One main difference:
  - Weights are time-varying
  - This delivers a measure that is very much like the NSFR but allows for different time horizons for liquidity recovery: long during crises, short during normal times.

Comparison with NSFR?

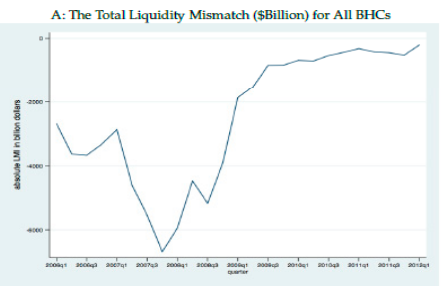


Figure 7, Panel A: Regular aggregate LMI

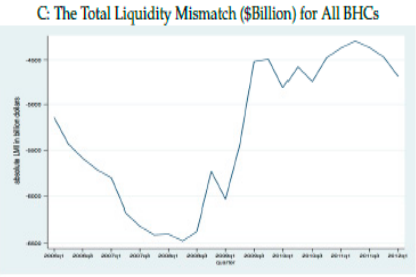
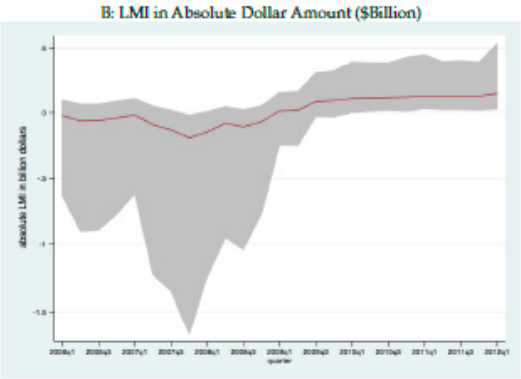


Figure 10, Panel C: Aggregate LMI with Fixed weights

- Different scales but similar patterns – so if we care about this as an early warning indicator, then why not stick with the NSFR?

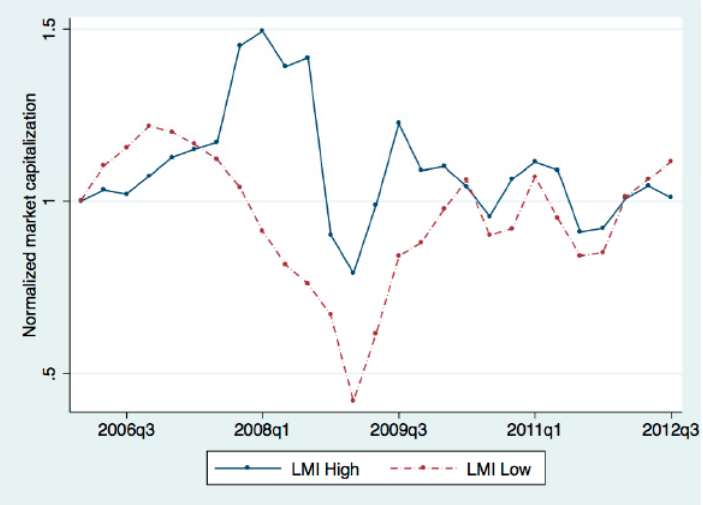
Questions

- LMI<0 indicates liquidity shortfall, >0 liquidity surplus
- Starting in 2009Q1 banks have positive LMI so they are "consuming rather than creating liquidity"



How do we interpret this? Have banks have stopped their function of liquidity creation? What does this mean?

Question



The paper argues that during the pre-crisis period high-LMI banks' stock market performance was worse than that of low-LMI ones -- But do the data really support this claim?

Small Questions

- The scale used for assigning haircuts assets held for different purposes is ad-hoc
  - Accounting designation may not stop the bank from selling an asset during a liquidity shortfall
- Conclusions state that LCR and NSFR cannot be aggregated, but they can be…
  - NSFR is a ratio but can re-write it as a difference and add up the amounts: dollar NSFR shortage
  - BCBS (2011) published estimates of "global" shortfall in LSC and NSFR

2- "MEASURING CREDIT RISK IN A LARGE BANKING SYSTEM: ECONOMETRIC MODELING AND EMPIRICS"

Overview

- Applies a refined econometric method for measuring systemic risk, and in particular, to compute conditional default probabilities
  - Banking Stability Measure (BSM)
    - Probability that at least *X* out of *N* banks jointly default
  - Systemic Risk Measure (SRM)
    - Probability that at least *X* out of *N* banks default given that bank *i* defaults

Contributions

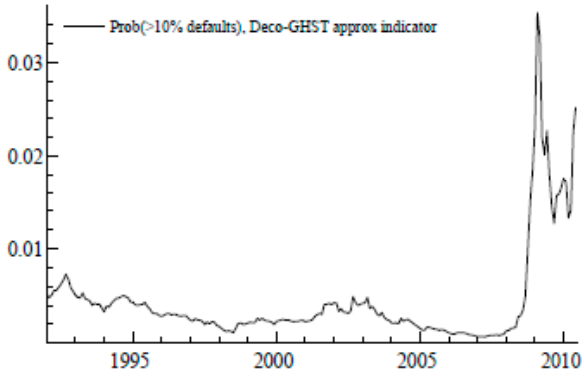
- Joint probabilities of failure are time-varying (higher correlation during stress)
  - Allows to explore economic factors driving the default dependence structure (Euribor-EONIA spread, VSTOXX index, etc.)
- Distribution of equity returns, which determines marginal probabilities of default, is skewed and heavy-tailed. The paper models it flexibly with a GHST density.

Main Question

- The paper estimates two measures of systemic risk
  - They are essentially joint probabilities (of default)
  - Novelty?
- Need more motivation on
  - The measures (these are not new ways of thinking about systemic risk)
  - Why go the extra mile on methods? How do the results compare to, say, running the Merton model with a matrix of simple asset return correlations? (And one can make it time varying – What is the additional benefit?)

Comment-1

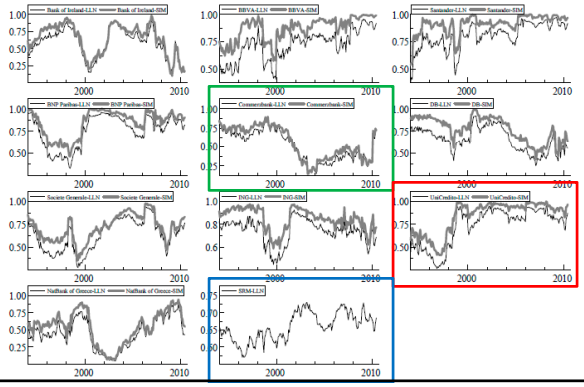
- Probability of default increases markedly from 2009 onwards – the result is expected (and there is no evidence of early warning potential of the BSM)



Banking Stability Measure in the full sample (Figure 3)

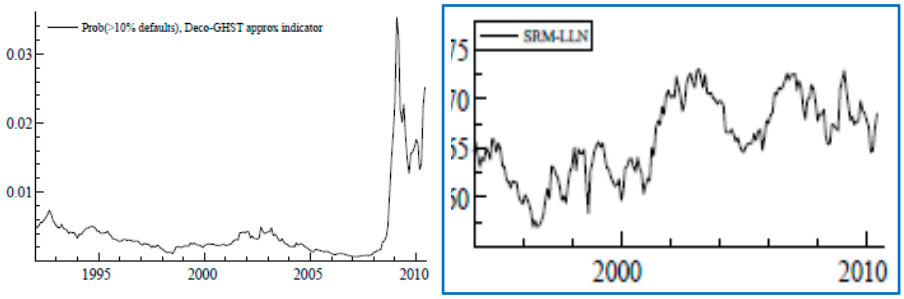
Comment-2

- Systemic Risk Measure—appears more informative because it allows identifying the banks that are likely to cause trouble for the whole system → lots of within and across-bank variation



Comment-3

- But overall the motivation is that the interconnectedness of financial institutions may be stronger during times of turmoil



It is difficult to reconcile these charts with the idea that interconnectedness increases during crises

3- “VULNERABLE BANKS”

Overview

- Develop model of bank deleveraging to show how fire sales by banks with common risk exposures give rise to contagion and systemic risk
- Propose two measures:
  - Bank-level contribution to system-wide vulnerability (“systemicness”)
  - Bank-level indirect vulnerability to deleveraging by other banks

Assumptions

- Main assumptions of the model:
  1. Asset trading in response to bank return shocks
  2. Target exposures remain fixed in percentage terms
  3. Fire sales generate price impact (downward sloping demand function)

Comment on the main assumption

- Key ingredients: asset return shock and fire sales
- In the model, fire sales are generated through asset returns shocks and leverage-targeting
- However:
  - There is not much evidence that banks target a fixed leverage ratio (they target ROE)
  - But even if leverage is fixed then banks may not be achieving it through fire sales

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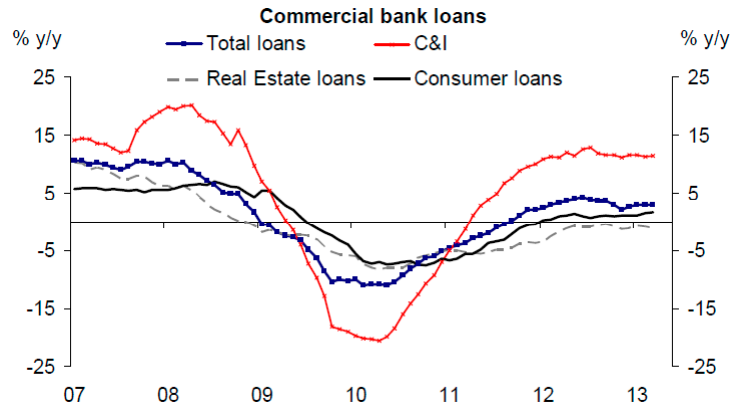
- Instead, they may achieve it through reduced lending:



Source: Deutsche Bank Research, June 2013.

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- Another way to generate the fire sales is to include liquidity shocks along with asset return shocks (as they are likely to happen together during times of stress)
  - Takes us back to the idea of the LCR: when faced with a shortage of liquidity the bank meets cash needs by selling assets (most liquid first not to depress prices), i.e., the fire sale happens because of a surprise liquidity shock
  - Can this be modeled?