Regulatory Capital Charges for Too-Connected-to-Fail Institutions: A Practical Proposal

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HKIMR-BIS Conference on Financial Stability

5 July 2010, Hong Kong SAR

Background: ongoing international regulatory reform

- Supplement the microprudential regulation with a macroprudential overlay

- Systemic risk perspective
  - "… additional capital, liquidity or other supervisory measures to reduce the externalities created by systemically important institutions" (BCBS Proposal, December 2009)

The contribution of this paper:

- This paper proposes a practical approach to imposing capital surcharges on SIFIs
  - A measure on each bank’s incremental contribution to systemic risk: CoVaR approach
  - Which determines the level of capital surcharge on individual banks

Comment 1

- The idea of linking capital charges to systemic risk contribution was not absent in Basel II
- Theoretic underpinning of Basel II: ASRF model
  - Granularity assumption: each loan (portfolio/bank) is infinitely small in a portfolio (banking system)
  - A single common factor
- Portfolio invariant property under these two assumptions

$$k = \sum_i k_i = \sum_i F(PD_i, \rho_i, LGD_i)$$

  - Systemic risk contribution is additive and is portfolio(system)-independent
  - i.e. macroprudential and microprudential are consistent

- Macroprudential overlay is important and necessary if either of the two assumptions is violated
  - Bank level: concentration risk adjustment under Pillar 2 (BCBS WP no 15, 2006)
  - System level: capital surcharge for systemically important banks
    - Externality: too-big-to-fail, too-connected-to-fail

Comment 2

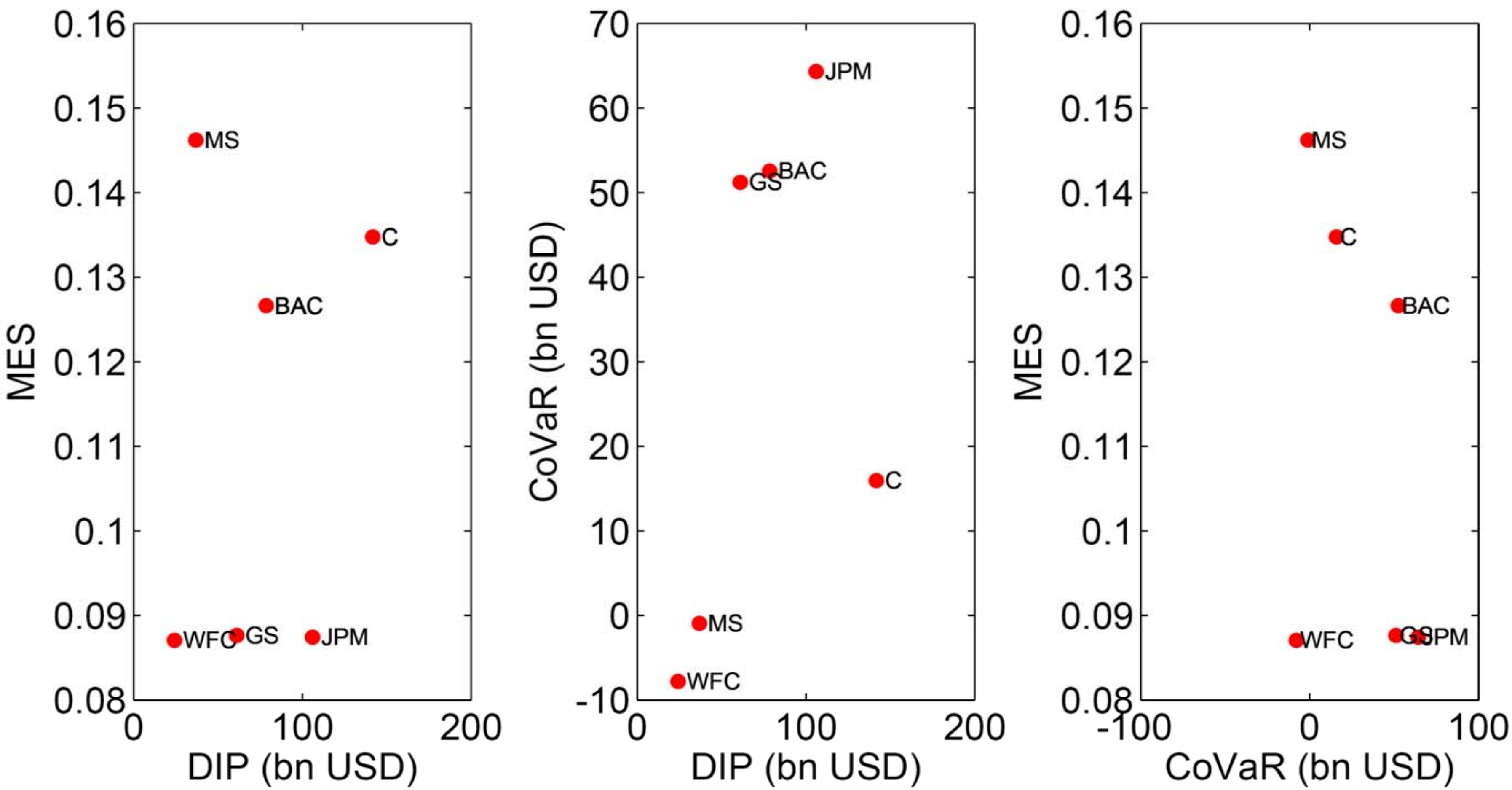
- How to measure systemic importance of each bank?
- BIS-FSB-IMF joint survey: "Guidance to assess the systemic importance of financial institutions, markets and instruments" (2009)
  - Size
  - Substitutability
  - Interconnectedness

Recently proposed market-based measures

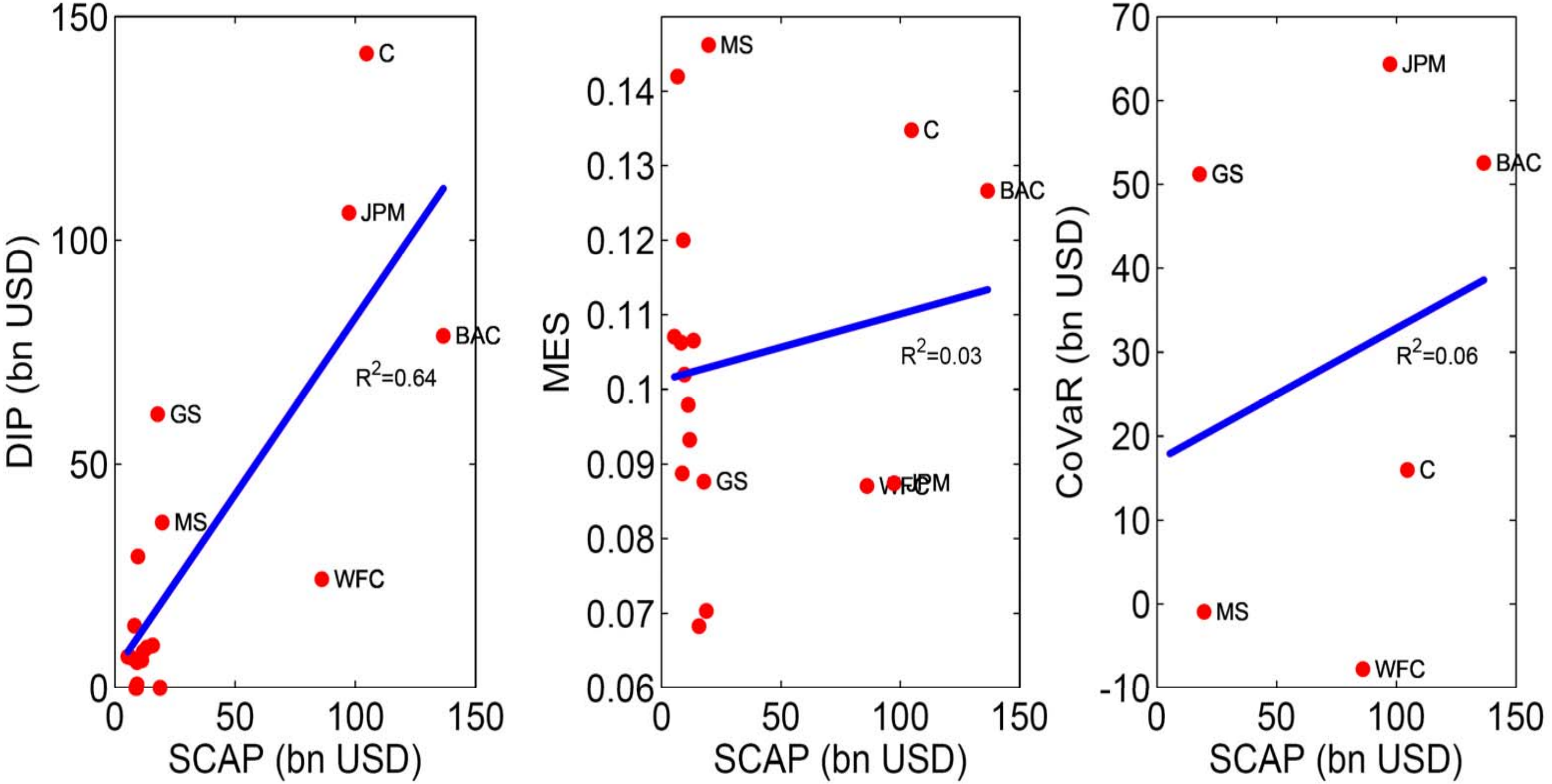
- Spillover effect: failure of one bank → impact on the system
  - CoVaR (Adrian and Brunnermeier)
- Risk allocation: system in distress → losses from each bank
  - Marginal expected shortfall (MES) (Acharya)
  - Sharply value approach (Tarashev, Borio and Tsatsaronis)
  - Distress Insurance Premium (DIP) (Huang, Zhou and Zhu)

- These measures can have very different results!

End-2008 results for major US banks



Compared with SCAP results



- It is dangerous to impose capital surcharges based on one particular measure

- Take CoVaR for example
  - Focus too much on interconnectedness
  - Mediobanca faces the highest capital surcharge (as a % of assets) – how comfortable is the result?
  - Not additive

Minor comment

- Definition
  - Incremental contribution = VaR (when J defaults) – VAR (unconditional rather than when J survives)
  - The two-bank example
    - VaR(B) = VaR(A) = 5 million
    - VaR(B|A defaults) = 6million
    - VaR(B|A survives) $\neq$ 5 million

Overall

- A very nice, well-written paper: topical issue, practical proposal and thought-provoking

- Recommend to read!