

Discussion: “Measuring Systemic Risk”

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Summary of paper

Distress in the financial sector \Rightarrow welfare losses

- insured creditors, bailout expectations \Rightarrow *excess risk-taking*
- financial firms do **not** take into account their risk to the system (externalities) when choosing risk profile
- how to make firms internalize their externalities?

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What they do

- set up a model for systemic risk
- derive optimal policy for managing systemic risk
 - ▶ **solution** \Rightarrow tax relative to contribution to systemic risk
 - ▶ incentive to “pollute” less (lower leverage, less risky assets etc.)

Summary of paper (cont.)

Theoretically motivated (ex-ante) measure of systemic risk

- Systemic Expected Shortfall (SES) \Rightarrow expected default losses and systemic risk contribution
- empirical proxy \Rightarrow Marginal Expected Shortfall (MES)
 - ▶ expected drop in bank's (market) value when all firms loses value (5% lowest market return days)

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Empirical evidence

- pre-crisis MES predicts ex-post realized systemic risk proxied by
 - ▶ capital shortfalls in stress tests Spring 2009 (SCAP)
 - ▶ drop in equity values during crisis
 - ▶ CDS based MES \Rightarrow CDS/equity returns during crisis

Contribution

- valuable to have a model framework for systemic regulation
- theoretically motivated measure, strong empirical support
- MES an efficient way of measuring systemic contribution in real-time
 - ▶ stress tests (à la SCAP) much more “labor-intensive”
 - ▶ MES rankings (combined with other indicators) for selecting institutions for more careful scrutiny
 - ▶ e.g. NYU/Stern Systemic Risk Rankings

Model and implementation of tax

Moral hazard

- banks choose leverage/asset composition \Rightarrow tax
- what keeps banks from altering their behavior/risk profile after?
 - ▶ “hidden actions” reflected in MES with a significant lag
 - ▶ impose a penalty? may not be very effective as problem first realized in crisis

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Usage of tax proceeds

- support solvent institutions (not for bailing out failed ones)
- ...but, if govt. able to credibly commit, reduce the need for a systemic tax in the first place?

Marginal Expected Shortfall

Precision and reliability of MES

- a systemic risk measure should reflect *all* welfare costs to society
- MES predicts realized equity/CDS movements, but representative for all costs?
- market participants failed to accurately price the risk of mortgage-related financial products

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More robustness would be useful

- comparison with other measures (e.g. ΔCOVAR , M-DIP,..)
- longer term predictions and time series statistics
 - ▶ E.g. growth in sub-prime market up to crisis. Reflected in MES for institutions that increased exposure during 2000-2007?
- how does MES “work” for other events/crises/countries?

Extensions

Alternative conditioning

- version in paper: $r^i | r^{system}$
- reverse conditioning: $r^{system} | r^i$
 - ▶ if institution i in trouble, how is the financial sector affected?
 - ▶ informative about who “moves” the system (e.g. Barings vs. Bear Sterns/Lehman)
- “network” version, mapping out all $r^i | r^k$ combinations
 - ▶ expected contagion/cascading path if institution k defaults
 - ▶ early warning about who expected to be hit next