

Discussion of Acharya, Pedersen, Philippon and Richardson's Measuring Systemic Risk

Mark Carey
Federal Reserve Board
April 16, 2010

Lofty goals and words

More prosaic deed, but useful

- “Systemic risk” as an externality
 - Distress in the financial sector imposes welfare losses
 - Financial firms do not consider all losses when choosing their risk posture
- Solution: Internalize the externality
 - Tax them according to the value of the externality

Main contribution

- Suggest an empirical measure, MES for a given firm, is correlated with the value of the externality imposed by that firm
 - Marginal Expected Shortfall
 - Loss in measured firm value when losses in measured firm value are large for all firms
 - Ad hoc measurement strategy, rather like bad-tail-beta for selected tail definitions
- Evidence: MES measured not long before the crisis is correlated with capital injections, equity value losses, and CDS spread increases during the crisis

The Model

- A vehicle for a Pigouvian tax, and to provide a rationale for MES
- Assumes the externality (parameter e)
- Assumes the size of the externality is driven by insolvency risk (aggregate capital shortfalls relative to an implicitly market-desired threshold)
 - Illiquidity? Runs? Panics?
 - Motivated by U.S. “stress test.” That might also be viewed as a commitment device to forestall speculative attacks
- Useful in illuminating authors’ thinking

Literature

- Related to risk-based deposit insurance pricing literature of 1980s-1990s
 - “Optimal” taxes were the solution to limited liability, not systemic externalities
 - Simpler problem, but no one has solved it, and doing so is a precursor to implementing Pigouvian tax
- Closely related to empirical literature measuring tail dependencies across banks
 - De Bandt and Hartmann (2000) survey
 - Hartmann, Straetmans and de Vries (2006) EVT paper

Literature

Other Bank-Specific Measures

- CoVaR (Adrian & Brunnermeier 2008)
 - VaR of system if bank i is distressed minus unconditional system VaR
- Shapley value approach (Tarashev, Borio and Tsatsaronis 2009)
- M-DIP (marginal distress insurance premium; Huang Zhou Zhu 2010)
- Details of differences among them are complicated – no nesting model yet

Instrument-Target View

- If we wish to hit an optimal level of systemic risk by using Pigouvian taxes as an instrument, we need a conditioning variable to determine the tax schedule
- MES is not sufficient
 - Surely the equity and CDS market movements that are predicted by MES do not capture all welfare costs
 - As noted, the model does not lay systemic risk bare
- Lucas critique applies

Choose Who is Systemic?

- Perhaps useful as one of many indicators
- But surely size matters too
 - A high MES for a tiny bank does not make it systemic
- Surely activities matter
 - A low MES for a processing bank does mean it is not systemic

Main Application:

Influence Intensity of Supervision

- Supervision (and some regulation) attempts to directly influence risk postures (asset choice, activity choice, liquidity choice, leverage)
- Seems to make sense that such attempts should be stronger for the more systemic
- Supervisors will calibrate by looking at many indicators
 - This one is an intriguing candidate

Take The Measure Into My Heart?

- Someone needs to do (and show) a lot more robustness checks
 - Perhaps not the authors
- Longer-horizon predictions
 - Supervisors need to know who has high MES in 2004, not 2007
- Variations on the tail dependence measurement strategy
- Horse-race with other measures, does it add value?

Summary

- The authors have suggested an empirical measure of financial institution systemic importance...
- ...and provided some evidence it may be correlated with things of interest.
- It merits more development by regulators
 - Empirical extensions
 - Hard thinking about WHY it is correlated