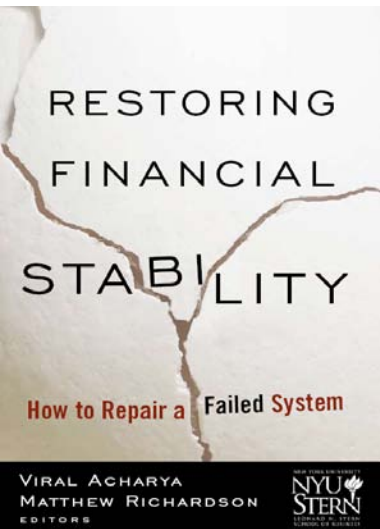


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Regulating Systemic Risk



Overview: What to Do About Systemic Risk

➤ Systemic risk: definition

- The joint failure of a significant part of the financial sector
- Leading to the freezing of parts of the capital markets
- That has the potential to disrupt the real economy

➤ Systemic risk is damaging to the developing world

- Capital inflows are the lifeblood of emerging markets
 - As an example, by some estimates, net private capital flows to emerging Europe are projected to fall from an estimated \$254 billion in 2008 to \$30 billion in 2009
- Globalization of capital markets (and cross-border banking) puts seemingly unrelated institutions at risk
 - Counterparty risk of large, complex, financial institutions (LCFIs)
 - Icelandic banks (Kaupthing, Landsbanki, Glitnir) could not expand internally so opened up branches abroad, e.g., Iceland's GDP \$20 billion, bank's foreign currency borrowings \$120 billion.

➤ Systemic Risk

- Spillover to the real economy, credit unavailability, payment system, etc. (Acharya (2001))
- Market and funding liquidity spirals (Geanakoplos (1997+), Brunnermeier and Pedersen (2009))
- Fire sales and depressed prices can lead to allocation inefficiencies (Acharya and Yorulmazer (2008))

➤ What to do about systemic risk? Commission on Growth and Development has a big interest in climate change. Greenhouse gases produce a negative externality; similar analogy here for systemic financial institutions.

- Private regulation of systemic risk not feasible
- Appoint a “systemic risk regulator”
- Measure, price, and regulate systemic risk
- Limit the amount, tax it, and require insurance against it

➤ Costs of not containing systemic risk: without regulation, there is excessive leverage, loading on aggregate risk, concentration in illiquid assets

➤ Key feature:

- For each bank: measure **its contribution to** a general crisis

➤ Standard risk management calculation:

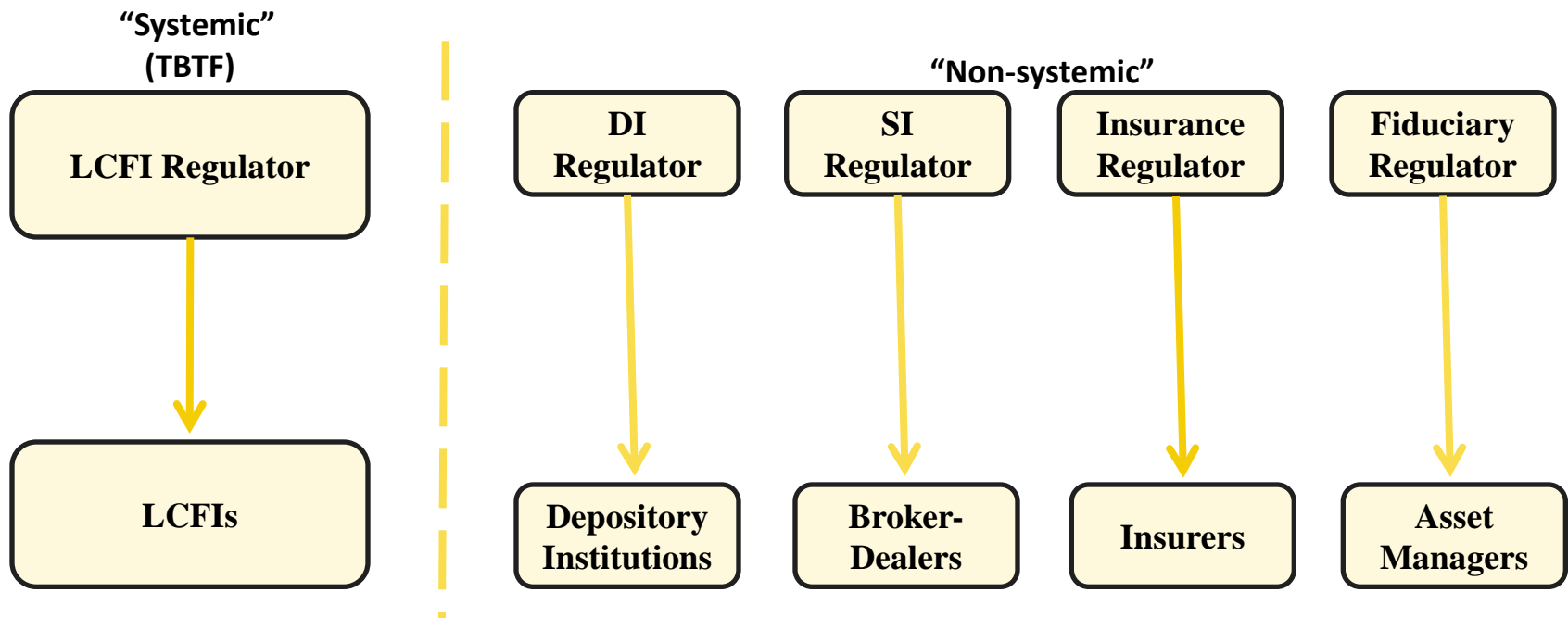
- Marginal Expected Shortfall (MES)
- Take 5% worst-case periods for the *system* (output, stocks, credit, financial sector,...)
- Ask: in those periods, how much did firm j contribute?
- Similarity to Adrian and Brunnermeier (2008)

➤ Analogy

- Allocation of economic risk capital within a firm
 - Each desk is charged for its (implicit) use of the firm's economic capital
- Allocation of capital requirements within an economy
 - Government capital is a public good

Our Proposal #1 – LCFI regulator

- Current system in U.S. is organized via regulation by function, as opposed to regulation by institution (or Charter), or Treasury’s 2008 proposals of reorganizing existing regulatory structure by key areas.
- Creation of a LCFI (i.e., systemic risk) regulator
 - Minimum capital adequacy, leverage, risk management capability, operational management capability, scope and growth of organization, safety and soundness, and the system must be global (adopted by a Basel-like accord).



Our Proposal #2 – Incentives (i.e., “taxes”) to reduce systemic risk

1. **Systemic Capital Requirement** (Basel III)

- Capital requirement proportional to estimated systemic risk

2. **Systemic Fees** (FDIC-style)

- Fees proportional to estimated systemic risk
- Create systemic fund.
- Price risk using AAA tranches, out-of-money puts, etc.

3. **Systemic Insurance** provided by the private/public

- Compulsory insurance of each bank’s own losses during general crisis
- Payment goes to systemic fund, not the bank itself
- Market price of insurance, but most of the insurance bought from the government
 - Analogy to terrorism insurance

➤ **Advantages of our proposal**

- Incentives to “organically” limit systemic risk (to lower capital requirement, fee, insurance)
- Estimates of systemic risk (by regulator and by the insurance market)
- Reduce risk and cost of bailout (systemic fund)

Regulating systemic risk

| | Capital requirements | Taxes | Private Insurance | Public/Private Insurance |
|---------------|--|---|---|---|
| Advantages | Consistent with existing regulations; Transparent and easy to implement | Easy to adjust; Create a systemic fund | No need for extra capital on BS; Extract market prices | Market price; Public power |
| Disadvantages | Cost of keeping large capital on balance sheet | Hard to figure out the price | Market not large enough for real systemic risk; LOLR still there | Governance; Coordination; Find correct public price |