Morgan Stanley

Systemic Risk: Relevance, Risk Management Challenges and Open Questions

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Systemic Risk

- Definition: financial system instability, potentially catastrophic, caused or exacerbated by idiosyncratic events or conditions in financial intermediaries.
  - It is the risk that the financial system fails.
  - It is not the risk that a financial institution fails provided that failure does not result in systemic instability.
- These episodes are characterized by extreme volatility in financial markets, often accompanied by a loss in liquidity that may create solvency risk for certain financial intermediaries.
  - The market moves experienced in these instances are larger than would be anticipated under reasonable multivariate distributions and are characterized by sharp increases in correlations across markets.
    - Regime shifts with “phase locking” behavior.

Examples of Instances of Financial Market Instability

- Typical:
  - Equity market sell-off of 1987
  - 1998 LTCM Crisis
  - 9/11
- Other examples of financial system stress:
  - Great Depression
  - Japan equity and real estate market collapse

Why is systemic risk important?

- Rationale for supervision

Rationale for Supervision

- Three rationales are offered for the need to provide extensive and intrusive supervision of financial institutions:
  - investor protection;
  - to compensate for the moral hazard created by deposit insurance;
  - in response to the unique role that financial institutions play in the economy and their potential to create losses in social welfare if financial-market instability were to result from their actions (i.e., the societal consequences of systemic risk).
- Research has shown how moral hazard and coordination problems arising from uncertainty or informational asymmetries can lead to banks runs and sub-optimal resource allocations. See Diamond and Dybvig (1983), Caballer and Krishnamurthy (2006),
- Does this body of work justify supervision in the absence of insured deposits? If so, in what instances, in what form, and to what extent is regulation justified?
  - Is there empirical evidence or a theoretical basis for believing that distress in a single financial institution (i.e., an idiosyncratic event) has the capability of generating a systemic shock today?

Why is systemic risk important?

- Rationale for supervision
- Risk Management of Financial Institutions

Risk Management of Financial Institutions

- The disorderly and volatile market conditions associated with "systemic" risk poses serious challenges for the management of financial institutions.
  - Impact on the market value of the positions.
    - Risk factors: discontinuous market moves, illiquidity, and high correlations.
  - Impact on the credit-worthiness of counterparties and obligors.
    - Risk factors: potential impact on default probabilities, and impact of portfolio liquidations.
  - Impact on core business flows.
    - Risk factors: impact on risk premia and valuation uncertainty.

Digression: How do financial institutions think about and manage their exposure to “systemic” events?

- It is especially difficult to gauge the appropriate risk appetite for these low probability, high impact events. To have salience with senior management and to affect risk taking, the risk must be plausible and material.
- Primary tool for examining the risks posed by “systemic” events: scenario analyses.
  - Definition
  - Types
  - Focus
    - Systematic Risk
    - Counterparty exposure
  - Goal
    - Examine consequence of plausible market-disrupting events.
    - Span likely modes of market fluctuations across scenarios.
    - Ensure that losses under the scenario are acceptable and do not jeopardize the institution’s ability to prosecute business or damage its franchise.

Key Questions

- How do market conditions and structure affect the probability and severity of "systemic" events?
  - Recent changes in the structure of financial markets:
    - Increased importance of hedge funds.
    - Continued development of the credit derivatives market.
    - Move to flexible exchange rates and sustainable external balances in emerging markets.
    - Rise in private equity funds and LBO activity.
- What is the role of leverage in propagating disturbances?
  - What are the implications of increases in embedded leverage achieved through continued advances in financial engineering?
- What is the net affect of risk management and regulatory regimes on "systemic" risk?
- To what extent are improved institutional frameworks (e.g., improved settlement systems, etc.) an alternative to increased regulation to mitigate these risks?