Panel 6: Breakout Sessions on Mitigating and Controlling Systemic Risk in Financial Systems
Friday, October 23, 2015 at 3:00 p.m.
Hutchins Hall 100

Moderator:
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Understanding, Measuring, and Mitigating Systemic Risk in Financial Systems

For the Breakout Sessions, please consider the following matrix as a framework for organizing your ideas. The examples in the matrix are illustrative.

What do we need to measure systemic risk?	Ex-ante Measures of Systemic Risk	Monitoring Systemic Risk During a Crisis	Post-crisis Forensics and Policy Improvements
Risk Data	*Household, corporate, and investor leverage*	*VaR, Stressed VaR from Banks*	*What data best describes root causes of the crisis?*
Risk Analytics	*Models for measuring stress in financial networks*	*Monitoring tools to separate and isolate signal from noise*	*Analytic tools that link useful data to policy improvements*
Risk Management Tools	*Monitoring systems with quantitative thresholds for systemic risk indicators*	*Quantitative thresholds beyond which government intervention should be considered*	*Implementation of policy improvements in ex-ante and contemporaneous Risk Analytics and Risk Management Tools*

In order to frame the discussion, we first outline the important areas of vulnerability in the financial system that must be addressed by policies aimed at promoting financial stability. We then review the policy framework that exists today, raise the importance of understanding how these policies overlap and interact, and highlight the implications for measuring and mitigating systemic risk. Next, we explore other types of financial entities that may suffer from systemic vulnerabilities and thus become a potential source of systemic risk, and emphasize the need for new systemic risk measurement tools for these entities. Finally, we close by discussing the importance of ensuring that policies and tools are effective through the cycle.

1. **IMF / BIS Definition of Systemic Risk: Risk of disruptions to financial services caused by an impairment of all or parts of the financial system that have serious negative consequences for the real economy.** In order to monitor systemic risk, we need to identify, track, and set quantitative thresholds for variables that measure systemic risk. The experience of the financial crisis suggested several areas of systemic vulnerability, and policy makers have implemented tools that measure system risk in the banking sector in these areas:
   a. **Liquidity**, broadly defined as access to funding. Overreliance on short-term wholesale funding certainly led to the downfall of several subprime lenders early on in the crisis, and was a major contributing factor to the downfall of Bear Stearns and Lehman Brothers. In response, policy makers have developed tools to measure and track liquidity for the banking sector such as the Liquidity Coverage Ratio and the Net Stable Funding Ratio.
   b. **Financial Leverage,** or the use of borrowing to enhance investment returns. Leverage undoubtedly increased the occurrence and impact of asset fire sales during the crisis. Policy makers are measuring bank leverage through the Leverage Ratio, and measuring solvency via the Basel III capital requirements and stress tests.
   c. **Scale / Interconnectedness.** The complex chains that link large financial institutions provided the transmission mechanisms that spread financial distress, often created by the asset fire sales mentioned above or in the extreme example, the failure of Lehman Brothers. In response, policy makers have implemented central clearing for derivatives. In addition, the G-SIB capital surcharge for the largest banks measures each G-SIB's systemic footprint and imposes a capital add-on to reduce the expected impact of a G-SIB failure. Furthermore, regulators have proposed standards for and amounts of total loss absorbing capacity (TLAC) that would be "bailed-in" in the event that a G-SIB is put in to resolution, where the amount of TLAC required is based on a measurement of Risk Weighted Assets.
   d. **Risk Appetite / Governance Models.** In many cases, the terms and conditions of financial transactions contributed to the financial crisis. Prior to the crisis, the reach for returns led managers and investors to ignore the increasingly risky terms and conditions associated with various types of loans. As the crisis set in, these previously benign features developed into severely impaired markets. The leveraged loan market is a prominent example. Policy makers have taken action, issuing the Interagency Guidance on Leveraged Lending that includes guidance on underwriting standards and acceptable levels of leverage. Furthermore, Dodd-Frank addressed some governance issues, for

example executive compensation disclosures and implementation of compensation claw-back policies

2. **To mitigate the systemic risks that span the categories described above, the existing regulatory framework has in place three policy segments:**
   a. **Monetary Policy**, which has price stability as a goal (and in some cases, a second goal of maximum employment), consists of
      i. Conventional measures (short term interest rate)
      ii. Unconventional measures (e.g. quantitative easing, forward guidance)
   b. **Microprudential policy** aims to maintain the safety and soundness of individual institutions by reducing idiosyncratic risk and protecting depositors
   c. **Macroprudential policy** aims to use prudential tools to limit system-wide risk, with a specific focus on
      i. Leverage and asset / liability maturity mismatches
      ii. Asset price bubbles / market imbalances that lead to fire sales
      iii. Network risks / transmission mechanisms that act as a source of contagion for financial distress

3. **How do monetary policy, microprudential policy, and macroprudential policy interact and overlap? What are the implications for measuring and mitigating systemic risk?**
   a. **Easy monetary policy can impact financial stability and increase systemic risk.** For example, the combination of easy policy and forward guidance depresses interest rates and asset price volatility and can increase risk-taking by investors and households. Can these risks be addressed by macro- and microprudential policies in such a way that they do not counteract the monetary policy stimulus?
   b. **Financial stability is not an explicit goal of monetary policy.** How does price stability compare to other potential monetary policy targets? Should alternative quantitative targets be considered?
   c. **Microprudential policies can have economic impacts that alter the effectiveness of monetary policy.** Could the leverage ratio, liquidity coverage ratio, and more stringent bank capital requirements diminish the availability of credit and have a negative effect on economic growth during a downturn? Can we measure this impact?
   d. **Microprudential and Macroprudential policies interact in complex ways.** Idiosyncratic risks can become systemic. How can we connect microprudential and macroprudential tools to predict and prevent idiosyncratic risks from propagating through the system and threatening financial stability? Are there certain cases where capital requirements can be reduced to serve macroprudential goals while not endangering the microprudential goal of preserving individual institutions?
   e. **Macroprudential tools may need to have built in adjustment mechanisms that take into account the stance of monetary policy.** For instance, could countercyclical capital rules supplement monetary policy?
   f. **Policies focus on promoting financial stability may require global coordination.** Systemic risk is by definition a cross-border phenomenon. Are national policies alone sufficient, or is global coordination in fact needed to build a robust macroprudential framework?

4. **Next, policies should look beyond the banking sector and consider non-bank financial institutions for additional sources of systemic risk.** Much of the post financial crisis prudential regulations have focused on strengthening the banking sector. In many cases these policies have reshaped the incentive structures for non-bank financial institutions (NBFIs) and led to changes in roles across the financial system. This necessitates a fresh look at NBFIs and other potential sources of systemic risk, across the same areas of systemic vulnerability noted above:

    a. **Liquidity is a vital consideration.** Are there NBFIs that still rely on short-term wholesale funding for their operations? Are there NBFIs who have a systematic mismatch between the liquidity of their assets and their liabilities? In each case, a period of distress and loss of funding / withdrawals that leads to asset sales at depressed prices could spread to other markets and other institutions. Can we develop and monitor appropriate liquidity metrics for NBFIs? Concerns about market liquidity, particularly in the market for US Treasuries and Corporate Bonds have come to the forefront recently. How can we measure and monitor market liquidity, as market microstructures at electronic trading platforms and exchanges evolve?

    b. **Leverage and solvency of NBFIs is also noteworthy.** Are reforms to capital requirements for insurance companies warranted? Is capital an adequate measure to protect against over-leverage? Is there a better alternative for NBFIs? Can contingent capital be an effective mitigating factor against systemic risk created by NBFIs?

    c. **Size and interconnectedness is important.** Have CCPs reached too-big-too-fail status? Can the procyclicality of collateral haircuts and initial margin calculations increase systemic risk? Is size itself a systemic risk? How can we measure scale of operations in a manner such that we can employ quantitative targets or limits?

    d. **Robust risk appetite and governance models are essential for NBFIs.** Even without leverage, can trading positions become so concentrated that liquidation drives asset prices down enough to adversely impact investor sentiment and lead to panic selling? Can we use transaction and position data held in trade repositories to measure and monitor these risks? Separately, how can we ensure model risk management and default management protocols at CCPs are robust and effective? Is there an efficient and effective way to measure a loosening of terms and conditions in financial transactions that could lead to significant losses in a distressed market?

    e. **Other**—what sources of systemic risk could NBFIs generate that have not been considered? Can we apply lessons learned in other industries or non-financial systems?

5. **Finally, these policies should employ tools that identify and mitigate systemic risks throughout the stages of the business cycle.** Effective macroprudential policy will require a combination of early-warning signals, contemporaneous data monitoring tools, and a set of ex-post forensic data analysis mechanisms.

    a. **What measures can we develop that provide an early-warning signal that imbalances are building in the financial system?** Could a significant rise in measures of household, corporate, or investor leverage indicate an asset price bubble is building? What networks and transmission mechanisms should regulators monitor for signs of spreading stress? Can we develop effective measures of position concentration and investor sentiment?

b. **What tools can we build to help policymakers interpret incoming data during a crisis?** How do we evaluate data utility in an efficient manner? What data should be prioritized? How do we separate signal from noise? Are there measures of liquidity or solvency that warrant particular attention during financial stress?

c. **Ex-post, what can we learn from the crisis that we can use to modify policies to strengthen the financial system?** How can we use data to understand what happened during the crisis? What analytical tools can we build to evaluate data such that the output can be used to improve the effectiveness of policy measures?

d. **Finally, policies need to be constructed such that they are effective through the business cycle.** For example, are there pro- or counter-cyclical features in policy tools and measures of systemic risk? For any given policy tool, do the benefits during financial stress outweigh the costs during periods of expansion?

6. **Lastly, there are a few critical factors that must inform any policy aimed at promoting financial stability:**

a. **Policy must evolve over time.** In response to the crisis, the financial system has changed significantly over the last seven years. Some financial activity has migrated outside the banking sector and therefore beyond bank regulations. Financial innovation continues, particularly outside of banking. It will be important to build monitoring and data collection capabilities for these types of activities.

b. **Model assumptions matter.** As we develop models to gauge systemic risk, it will be of vital importance to understand how model assumptions might lead to shortcomings in measurement, analysis or policy responses

The economy is global. It will be difficult to overestimate the importance of cross-border coordination and consistency in developing policies to mitigate systemic risk