

Systemic Risk Regulation

Panel Session Highlights from the 2010 FMA Annual Meeting

Moderator: S. Wayne Passmore

Panelists: Viral Acharya, Diana Hancock, Richard Herring, and Peter Lupoff

■ Viral Acharya began the session with a discussion on “Systemic Risk Measurement for Regulatory and Surveillance Purposes” based on his research with Pedersen, Philippon, and Richardson.¹ This research focuses on how each financial institution’s contribution to systemic risk can be measured and priced so that “taxes” can be used to make firms internalize their contributions to systemic risk.

Mr. Acharya defined systemic risk as widespread failures of financial institutions (or the freezing up of capital markets) that substantially reduces the supply of credit. He argued that financial regulations, such as Basel I- and Basel II-style capital regulations, are designed to limit each institution’s risk. As a result, individual risks are properly dealt with in normal times, but the financial system remains, or in some cases, is induced to be fragile and vulnerable to large macroeconomic shocks.

His proposed a framework for measuring and managing systemic risk that starts with the observation that financial institutions hold too little capital because such institutions

¹ See Acharya, V.V., L.H. Pedersen, T. Philippon, and M. Richardson, 2009, “Measuring Systemic Risk, Stern School of Business, New York University Working Paper, November and Acharya, V.V., L.H. Pedersen, T. Philippon, and M. Richardson, 2010, “A Tax on Systemic Risk,” forthcoming, NBER proceedings on *Quantifying Systemic Risk*, Joe Haubrich and Andy Lo, eds.

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that (1) do not take into account the loss they impose in default on creditors, and (2) do not consider the externality they impose on the society at large in a systemic crisis. To align incentives correctly and to have sufficient capital during a crisis, Mr. Acharya argued that the regulator must optimally impose a tax on each bank (e.g., a capital adequacy requirement or mandatory insurance purchase) related to the sum of its expected default losses and its expected contribution to a systemic crisis. This estimate of each bank’s contribution to systemic risk is dubbed its systemic expected shortfall (SES). It is measured as a weighted average of its expected loss when the market is in its “left-tail,” (i.e., the firm’s marginal expected shortfall, MES, on the worst days for market returns) and its leverage (i.e., the quasi-market value of its assets to its market value of equity, LVG).

A financial institution’s SES is larger when (1) the externality it imposes on society is more severe, (2) the systemic under-capitalization of financial institutions is more likely, (3) the financial institution takes a larger exposure in correlated assets (i.e., investing in assets that experience losses when other banks are in trouble), and (4) the financial institution has more leverage at the outset. Mr. Acharya demonstrated that firm-level SES estimates constructed using correlated asset exposures and leverage from the pre-crisis period (June 2006—June 2007) explained cross-sectional realized returns on equity and on credit default swap (CDS) during the crisis (July 2007—December 2008) quite well. He also showed that such SES estimates were broadly consistent with results from the Supervisory Capital Assessment Program (SCAP) stress tests conducted by the Federal Reserve in the spring of 2009.

Mr. Acharya next turned to what data is needed to better measure and monitor systemic risks. He argued for better leverage data at a higher frequency and for greater transparency on interconnectedness. With regard to derivatives, exposures should be classified by product type, by type of (and by credit rating of) counterparty, and by maturity of contracts. Such exposures should be reported on a gross, net, uncollateralized net (in recognition of posted collateral), and fair-value basis. Moreover, for uncollateralized net exposures, potential exposures based on stress tests that take into account replacement risks assuming severe market conditions would also be useful. Mr. Acharya also called for “concentration reports” that would provide information on interconnectedness for the largest counterparty exposures by counterparty and for “margin call reports” that would provide information on additional collateral liabilities needed if the firm experiences a one- or two-notch downgrade.

Mr. Acharya cautioned that persistent under- and overpricing of risk are related to the leveraging and de-leveraging cycle. This relationship is part of systemic risk and should not be ignored. For this and other reasons, risk measures and stress tests should be calibrated frequently. That said, he argued that using SES-based “taxes” would incent firms to reduce leverage and correlated exposures, thereby lowering systemic risk in the financial system.

Turning to crisis management, Ms. Hancock discussed financial stability-based prompt corrective actions (PCA) based on her research with Wayne Passmore.² She pointed out that the motivation behind PCA—as established by the Federal Deposit Insurance Corporation Improvement Act passed in 1991—was to ensure that various actions would be taken by bank supervisors to improve the viability of each bank and to reduce the costs of resolution, if needed. She argued that PCA did not work well for systemically-important banks during the recent systemic crisis because the triggers for such actions were based on regulatory capital ratios, which were lagging indicators (or sometimes no indicator) of the financial condition of a bank holding company, and because such firms sometimes suffered a “run” before a regulatory capital threshold was crossed.

Ms. Hancock argued that PCA could be improved using a hierarchical defense structure for mitigating systemic risks. Under financial stability-based PCA, the first line of defense against insolvency would be common equity. Bank supervisors would set capital adequacy standards based on the frequency of bank solvencies arising from credit losses that they are willing to accept—just like they do now.

The second line of defense would be contingent capital. Contingent capital exists when contractual arrangements provide a pre-specified form and amount of capital conditional upon a pre-specified “trigger event” (e.g., in times when losses erode an institution’s capital base or in times of macroeconomic stress. In essence, contingent capital is a privately-provided form of “tail risk” insurance. Ms. Hancock described how contingent capital can be provided using many different structures and pointed out that the potential triggers are equally diverse.

Ms. Hancock also described how contingent capital with a firm-specific trigger could be potentially be used to raise capital just prior to a downturn when losses on defaulted loans are likely to be higher than those under normal business conditions. She provided an example for this “top-of-the-cycle” contingent capital that used a trigger based on firm-specific marginal expected shortfalls (MES) of the type described earlier by Mr. Acharya. Back-testing a specific MES trigger, which was based on time-series information for 31 large US financial institutions over 2000–2006, she demonstrated that institutions such as Lehman Brothers, Citigroup, Fannie Mae and Freddie Mac could have potentially been recapitalized using contingent capital prior to when the government-sponsored enterprises were placed into conservatorship and also prior to the Lehman bankruptcy. Indeed, many of the institutions that were required to raise capital in the wake of the Federal Reserve’s Supervisory Capital Assessment Program (SCAP) could potentially have been partly (or perhaps, even totally) recapitalized using contingent capital with such a trigger event.

Even firm-specific contingent capital may be insufficient if there is a financial disruption, if panic arises, if uncertainty is pervasive, and/or if investors withdraw from their normal financial transactions. In such circumstances, Ms. Hancock argued that a third line of defense was needed. This third line of defense would entail conversion of all hybrid capital instruments to common equity, contingent capital injections (not yet triggered) and also a write-down of subordinated debt instruments that are eligible for inclusion in Tier 2 capital when a systemic trigger event occurs. Issuance of this “long tail-risk insurance” would likely only be needed for systemically-important financial institutions and the trigger event would be designed to occur very infrequently. Indeed, Ms. Hancock emphasized the need to integrate financial stability-based PCA with a well-designed resolution mechanism.

Mr. Herring also argued that higher capital ratios would be insufficient to protect the financial system from systemic risk. In addition to contingent capital issuance, he would require highly-tailored firm-specific “Rapid Resolution Plans (RRPs) for Systemically Important Financial Institutions

²See D. Hancock and W. Passmore, 2010, “Augmenting Capital Regulation to Limit Future Financial Crises: Financial Stability-Base Prompt Corrective Actions,” mimeo, Board of Governors of the Federal Reserve System, Washington, DC.

(SIFIs).³ He argued that appropriately-designed RRP would (1) protect taxpayers from the necessity of bailing out SIFIs, (2) make clear to all parties involved that a SIFI will not be bailed out, (3) force SIFIs and their boards to anticipate and internalize some of the spillover costs that might occur, (4) make the supervisor/ resolution authority aware of what it must be prepared to do, and (5) make colleagues of supervisors/resolution authorities aware of what they must do to minimize spillovers.

In Mr. Herring's view, a useful RRP starts with the assumption of insolvency and contains seven key components. First, a RRP should map out a systemically-important firm's lines of business so that regulators would know what corporate entities would be subject to a resolution process in the event of bankruptcy.

Second, a RRP should identify key SIFI interconnections across affiliates. Such interconnections would, of course, include financial interdependences such as cross-guarantees, stand-by letters of credit, and loans. Such interconnections would also lay bare operational interdependencies such as IT systems and enterprise-wide liquidity and risk management systems that would impede separation of one entity from another.

Third, a RRP must maintain a "virtual data room" that contains all of the information an administrator (or resolution authority) needs to know to expeditiously resolve the firm. This "virtual data room" would have information such as (1) the location and methods used to maintain and record transactions, (2) how daily reporting is used to monitor and manage risk, (3) overviews of specific risk exposures by product, by sector, by counterparty, and by country, (4) account numbers with settlement banks, and (5) regulatory permissions for each business unit.

Fourth, a RRP would identify key information systems, the location of said systems, and the personnel to operate them. In the event of insolvency, plans would be implemented to make such systems available to all entities during the resolution process through a bankruptcy-remote structure.

Fifth, a RRP would identify any activities or units the SIFI regards as systemically relevant. Moreover, the SIFI would be required to demonstrate how such activities or units could continue to operate in the event that a resolution was necessary (e.g., through bankruptcy remote structures or by ensuring such activities could easily be transferred to other entities).

Sixth, A RRP would force a SIFI to consider how its actions affect exchanges, clearing houses and other systemically important elements of the financial infrastructure. In addition, the SIFI would be required to demonstrate that it could disconnect from highly automated systems such

as exchanges and clearinghouses without creating serious knock-on effects.

Lastly, a RRP would precisely identify the procedures that would be followed in a wind-down. Such procedures would be updated annually at a minimum. If, however, a substantial merger or restructuring creates additional complexity, then such procedures would be updated immediately.

Each RRP should be seen from the perspective of the Board of Directors as an integral part of strong corporate governance. An efficient wind-down plan can be viewed as a strong business continuation plan. From the perspective of the primary supervisor/resolution authority, such plans can be examined with the view to compel each SIFI to simplify its corporate structure, to improve its IT infrastructure, and to spin-off activities that cannot be unwound without intolerable spillovers.

Mr. Herring argued that RRP would benefit the market in several important ways. The plans would reduce moral hazard by making it clear to creditors and counterparties that a systemically-important financial institution can be resolved in a way that imposes losses without posing risks to the broader financial system. The plans would also likely compel systemically-important financial institutions to simplify their own corporate structures and reduce their risk exposures while ensuring that regulators in all countries are better prepared to cope with an insolvent SIFI. Moreover, the plans may help level the playing field between systemically important financial institutions and smaller, less complex financial institutions. Finally, governments would never be coerced into providing a bailout because of the fear of creating a financial crisis.

Last, but certainly not least, Mr. Lupoff (Tiburon Capital Management) provided a practitioner's take on "Systemic Risk Regulation." He defined systemic risk as a risk that impacts the entire financial sector and the real economy through cascading, contagion, and chain-reaction effects. Examples of such risks are contractions in liquidity by the central bank, the failure of a large private firm, a natural disaster, or a terrorist attack. He argued that these are risks that individual firms cannot necessarily protect themselves against. Indeed, the financial crisis of September 2008 featured many examples of systemic risk, including bank runs and illiquidity of asset classes.

Mr. Lupoff contrasted two views of the recent crisis. One view is that "the market did it." This view holds that the crisis emanated from domestic and international forces present in the market economy that the government did not control, either because it did not have the power to do so, or because it chose not to do something. Under the market view, systemic risk was a market failure that could have been dealt with had only the government done something (e.g., intervened in Lehman's failure).

The alternative view is that "the government did it." This

³See, for example, R. Herring, 2010, "Wind-Down Plans as an Alternative to Bailouts," PEW Financial Reform Project, Briefing Paper #15, March.

view holds that government actions caused, prolonged, and worsened the crisis. For example, some observers believe that there was excessive monetary easing by the Federal Reserve, which in turn led to a housing bubble that was exacerbated by Fannie Mae and Freddie Mac's support to the mortgage-backed security market. Under this view, limiting government power is essential to minimize systemic risk.

Then, Mr. Lupoff argued that both views of the crisis are probably right. As he sees it, the world was awash in investment capital back in the mid-2000s. Low interest rates and enormous demand for "high-grade" investment assets drove down yields on investment grade paper. As a result, Wall Street was challenged to create higher yielding investment grade paper. Low interest rates perpetuated the cycle of low cost mortgages that drove up home prices, while low delinquency and foreclosure rates comforted the rating agencies, underwriters and investors. This ultimately led to declining standards and documentation by all parties involved. Incentives drove each part of the securitization chain to work as aggressively as possible to book new

business to meet new demand.

He also argued that markets worry about systemic risks too. Deficits and the growing debt of the federal government can crowd out private investment. Interventions by the Federal Reserve and by the federal government can increase costs borne by taxpayers, impair market discipline, misallocate scarce capital, and potentially inflate asset bubbles. And, investor "runs" can begin at troubled institutions, but spread to healthy ones through counterparty exposures to unhealthy institutions. The limited transparency and vulnerability to counter-party risks that are associated with payment and settlement systems can add to the probability that such systems will be a source of systemic risk.

Mr. Lupoff concluded that mistakes in markets were made, but corrections occurred without a systemic shock. However, government actions, in part, converted market risks to systemic risks. In the future, he argued that systemic risk markets should be monitored carefully to avoid such catastrophes. ■