



CENTER FOR FINANCIAL STABILITY

Dialog • Insight • Solutions

Brief on “The Intrafirm Complexity of Systemically Important Financial Institutions”

Robin L. Lumsdaine (*)

May 14, 2015

The Financial Stability Board (FSB) describes a systemically important financial institution, or SIFI, as a financial institution “whose disorderly failure, because of their size, complexity and systemic interconnectedness, would cause significant disruption to the wider financial system and economic activity.”

Regulatory efforts traditionally have focused on the size aspect of this definition, often by delineating a specific threshold (e.g., \$250bn in total consolidated assets) that would subject a firm to increased supervisory scrutiny. Yet despite the ease of implementation, a size-based threshold is in many ways unsatisfactory, precisely because it does not take into account the level of complexity of a firm’s business activities. In addition, size is but one of the criteria mentioned in the SIFI definition.

Further, much of the academic literature has concentrated on the interconnectedness among financial participants, with the goal of identifying central “nodes” – i.e., those firms that are central to maintaining the interrelationships within the network.

In contrast, there has been comparatively little development of metrics concerning the complexity of the individual firms that comprise the system – the other key attribute highlighted in the SIFI definition. My new paper with coauthors Daniel Rockmore (Dartmouth College), Nick Foti (University of Washington), Gregory Leibon (Dartmouth College) and J. Doyne Farmer (Oxford University) takes on this challenging task by proposing complexity metrics that are designed to inform supervisory judgment regarding the SIFI designation.

In our paper, we use the structure of an individual firm’s control hierarchy (a network representation of the institution and its subsidiaries) as a proxy for institutional complexity. This mathematical representation (and various associated metrics) provides a consistent way to compare the complexity of firms with often very disparate business models.

By quantifying the level of complexity of a firm, the approach also may prove useful should firms need to reduce their level of complexity either in response to business or regulatory needs. The network encoding and associated metrics open the door for the use of simulations to assess potential changes in complexity. Such simulations could provide a helpful tool for understanding the supervisory implications of altering a firm’s control hierarchy in the process of winding down a firm (such as in the case of the dismantling of Lehman Brothers), or in arranging a rapid acquisition, (e.g., in the cases of the JP Morgan Chase acquisition of Bear Stearns, the Wells Fargo acquisition of Wachovia, or the Bank of America acquisition of Washington Mutual).

More generally, these metrics provide a means of comparing the organizational possibilities with an eye toward reducing, rather than increasing, systemic risk in the wake of a change in firm structure.



CENTER FOR FINANCIAL STABILITY

Dialog • Insight • Solutions

We apply our proposed metrics to a sample of 29 firms: 19 banks that have received the SIFI designation, five that have not, and five insurance companies. Between 2011 and 2013, firms appear to have reduced their complexity. Contrary to conventional wisdom, the results suggest that some of the SIFI-designated institutions may not pose any greater supervisory challenge than their non-SIFI counterparts, since there is little difference in the complexity of their control hierarchies. In contrast, the insurance companies in the sample are more complex according to the metrics presented in the paper, despite being smaller in size, having fewer subsidiaries, and being less geographically or industry-diverse than the banks.

“The Intrafirm Complexity of Systemically Important Financial Institutions,” by Robin L. Lumsdaine, Daniel N. Rockmore, Nick Foti, Gregory Leibon, and J. Doyme Farmer can be downloaded via SSRN (<http://ssrn.com/abstract=2604166>).

* Robin L. Lumsdaine is a CFS Senior Fellow and Professor at American University’s Kogod School of Business.

The Center for Financial Stability (CFS) is a private, nonprofit institution focusing on global finance and markets. Its research is nonpartisan. This publication reflects the judgments and recommendations of the author(s). They do not necessarily represent the views of Members of the Advisory Board or Trustees, whose involvement in no way should be interpreted as an endorsement of the report by either themselves or the organizations with which they are affiliated.