Which Are the SIFIs?

A Component Expected Shortfall (CES) Approach to Systemic Risk *

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Abstract

In this paper we propose a component approach to systemic risk which makes it possible to decompose the risk of the aggregate financial system (measured by Expected Shortfall, ES) while accounting for the level of firm’s characteristics. Developed by analogy with the Component Value-at-Risk concept (Jorion, 2007), our new, simple and parsimonious method to identify systemically important institutions, labeled Component ES (CES), presents several advantages. First, it relies on higher frequency (daily) publicly available data, which incorporates useful information for forecasting systemic risks, and it encompasses the popular Marginal ES measure. It hence does not consider the liabilities (not available in daily) to assess the systemically riskiness of a firm as the SRISK (Engle and Brownlees, 2011) does. Second, it allows us to select the riskiest financial firms on the market by directly ranking them according to their riskiness. The larger the contribution, the more systemically important the institution. Most importantly, our measure can be used not only to assess the contribution of a firm to systemic risk at a precise date (in-sample), but also to forecast its contribution in a certain period (out-of-sample). An empirical application on a set of financial institutions similar to that employed by Brownlees and Engle (2011) ascertains the ability of CES to identify the most systemically risky firms during the 2007-2009 financial crisis.

- **Keywords**: Systemic Risk, Component Expected Shortfall, Marginal Expected Shortfall, Forecasting

- **J.E.L Classification**: C22, C53, G01, G32

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