

Forecasting systemic impact in financial networks ^{*}

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Abstract

We propose a methodology for forecasting the systemic impact of financial institutions in interconnected systems. Utilizing a five-year sample including the 2008/9 financial crisis, we demonstrate how the approach can be used for timely systemic risk monitoring of large European banks and insurance companies. We predict firms' systemic relevance as the marginal impact of individual downside risks on systemic distress. The so-called systemic risk betas account for a company's position within the network of financial interdependencies in addition to its balance sheet characteristics and its exposure towards general market conditions. Relying only on publicly available daily market data, we determine time-varying systemic risk networks, and forecast systemic relevance on a quarterly basis. Our empirical findings reveal time-varying risk channels and firms' specific roles as risk transmitters and/or risk recipients.

Keywords: Forecasting systemic risk contributions, time-varying systemic risk network, model selection with regularization in quantiles

JEL classification: G01, G18, G32, G38, C21, C51, C63

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