

Multiple Channels of Financial Contagion: A Network-Based Econometric Approach

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Abstract

Decisions and outcomes of financial firms are often influenced by different types of network associations. Prior research to assess the roots of financial contagion has focused on supply-chain networks, as a single propagation channel. Firm-level interactions, however, heavily depend on other channels (such as competition linkages and business partnerships), which generate additional sources of micro-induced financial propagation. Drawing on the view of multidimensional linkages between economically-related companies, this study proposes a network-based econometric approach to characterize the stock price dynamics of listed enterprises connected by supply-chain, competition and partnership linkages. We derive a number of theoretical properties of the proposed modeling framework which reveals insights on endogenous feedback mechanisms as well as shock amplification patterns consistent with the stylized facts. Using comprehensive firm-level network data on 7256 U.S. listed enterprises, we document that stock prices are significantly exposed to network propagation operating through competition and partnership channels apart from the supply-chain linkages. The empirical evidence reveals that the impact of network factors on prices is sizeable, time-varying and asymmetric over the business cycle during normal versus crisis periods.

Keywords: Financial econometrics, Diffusion through networks, Multidimensional linkages, Stock prices, Idiosyncratic shocks, Structural vector autoregression

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