

Financial Network and Asset Bubble

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Abstract

Hayakawa (2009) has introduced a graph theory-based framework for financial network analyses. We apply the framework to asset bubble phenomena. We formulate financial networks such that they are characterized with its core element; graph, and non-core element; (trade) sequence. For given economy, the initiation of the latent stage of bubble is triggered only if the change of the non-core element has sufficiently large impact. In other words, the bubble resistance is less if the potential maximum impact is more. The level of the potential maximum impact is determined by the difference of the minimum (monetary) flow and the maximum flow, which are properties of its core elements; the graph. We contribute to the derivation of the potential maximum impact. We know the derivation of the level of the potential maximum impact is difficult in general case, so we characterize a class of graph for which the derivations are easier. Further, we introduce relations among graphs, which help reduce difficulty of the derivation in general case.

JEL classification: G01, E40, C02

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