

Measuring systemic risk contagion effect of the banking industry in China: A directed network approach

Zisheng Ouyang

Hunan University Of Technology and Business

E-mail: ouyang_zs@163.com

Abstract: To capture the impact of investor sentiment on the risk contagion of financial institutions and the potential tail risks caused by the financial network structure, this paper uses the directed network approach to measure systemic risk contagion effect of the Chinese banking industry. Considering the nonlinear mechanism of financial risk mutation and contagion, we use the linear quantile lasso regression and local polynomial method to estimate the TENET model which is a new method of systemic risk measurement, and construct a weighted directed network. Moreover, we study the directed network from different perspectives, analyze the financial risk contagion effect and the influence of investor sentiment on the financial risk contagion, and identify systemically important financial institutions. Using 16 listed banks in China as samples, we find that: (1) With the spread of crisis, the entire financial system becomes more closely related, and the total network connectivity continues to rise until it reaches a maximum value. (2) The total network connectivity and the average value (systemic risk) have the same upward or downward trend, but the average value lags behind the total network connectivity. (3) The current bank has characteristics of “too big to fail” and “too contact to fail”.

Keywords: Systemic risk; Contagion effect; Investor sentiment; Directed network approach; CoVaR model