

Structural Vulnerability of Banking Network - Systemic Risk Approach

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Abstract : This paper contributes to the existent literature by developing a framework that explains how to monitor potential threats to banking sector stability. The study explores structural vulnerabilities at the country level, but also look at bilateral exposures within a network context. The study contributes in analysing of the European banking systemic risk at aggregated level, which integrates the characteristics of bank size, and interconnectedness relative to the size of the economy which ultimate risk belong to, taking to account the concentration ratio of the banking industry within the whole economy. The nature of the systemic risk depends on the interplay of the network topology with the nature of financial transactions over the network, assets and buffer stemming from bank size, correlations, and the nature of the shocks to the financial system. The study's results illustrate the contribution of banks' size, size of economy and concentration of counterparty exposures to a given country's banks in explaining its systemic importance, how much the banking network depends on a few traditional hubs activities and the changes of this dependencies over the last 9 years. The role of few of traditional hubs such as Swiss banks and British Banks and also Irish banks- where the financial sector is fairly new and grew strongly between 1990s till 2008- take the fourth position on 2014 reducing the relative size since 2006 where they had the first position. In-degree concentration index analysis in the study shows concentration index of banking network was not changed since financial crisis 2007-8. In-degree concentration index on first quarter of 2014 indicates that US, UK and Germany together, getting over 70% of the network exposures. The result of comparing the in-degree concentration index with 2007-4Q, shows the same group having over 70% of the network exposure, however the UK getting more important role in the hub and the market share of US and Germany are slightly diminished.

Keywords : systemic risk, counterparty risk, financial stability, interconnectedness, banking concentration, european banks risk, network effect on systemic risk, concentration risk

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