

# Assessing the Systemic Risk of a Heterogeneous Portfolio of Banks during the Recent Financial Crisis

---

Xin Huang

Hao Zhou

Haibin Zhu

January 2010

**Abstract:** This paper extends the approach of measuring and stress-testing the systemic risk of a banking sector in Huang, Zhou, and Zhu (2009) to identifying various sources of financial instability and to allocating systemic risk to individual financial institutions. The systemic risk measure, defined as the insurance cost to protect against distressed losses in a banking system, is a summary indicator of market perceived risk that reflects expected default risk of individual banks, risk premia as well as correlated defaults. An application of our methodology to a portfolio of twenty-two major banks in Asia and the Pacific illustrates the dynamics of the spillover effects of the global financial crisis to the region. The increase in the perceived systemic risk, particularly after the failure of Lehman Brothers, was mainly driven by the heightened risk aversion and the squeezed liquidity.

Further analysis, which is based on our proposed approach to quantifying the marginal contribution of individual banks to the systemic risk, suggests that “too-big-to-fail” is a valid concern from a macroprudential perspective of bank regulation.