Analyzing Systemic Risk of the European Banking Sector

Viral V. Acharya and Sascha Steffen

Handbook on Systemic Risk, edt. J.-P- Fouque and J. Langsam. Cambridge University Press.

Abstract

Since the summer of 2007, the financial system has faced two major systemic crises. European banks have been at the center of both crises, particularly of the European sovereign debt crisis. This article analyzes systemic risk of European banks across both crises exploiting the specific institutional nature of the European banking system. We employ the "Systemic Expected Shortfall" concept developed in Acharya et al. (2010) which creates a systemic risk index among financial institutions based on their individual contribution to the capital shortfall of the financial system. We analyze what banks are most systemic in Europe using cross-sectional tests. We then construct a ranking of European banks and European countries as of June 2007 and calculate an estimate of the expected capital shortfall at that time. European governments have supported the banking sector with EUR 4.1 trillion using various support schemes and virtually all banks have raised capital, many of them, however, at steep discounts. We find that markets demand more capital from banks with high exposures to particularly peripheral countries in Europe, that is, banks' sovereign debt holdings are a major contributor to systemic risk. Using hand-collected data of sovereign debt holdings and impairments, we provide estimates how much capital is needed to restore confidence in the banking sector.