

1116-91-1018

**Birgit Rudloff\*** (brudloff@wu.ac.at), Vienna University of Economics and Business, Institute for Statistics and Mathematics, Vienna, Austria, and **Zachary Feinstein** and **Stefan Weber**.

*Measures of Systemic Risk.*

Systemic risk refers to the risk that the financial system is susceptible to failures due to the characteristics of the system itself. The tremendous cost of this type of risk requires the design and implementation of tools for the efficient macroprudential regulation of financial institutions. We propose a novel approach to measuring systemic risk. Key to our construction is a rigorous derivation of systemic risk measures from the structure of the underlying system and the objectives of a financial regulator. In contrast to most of the literature, feedback effects of capital charges onto the system can be considered. Systemic risk is measured by the set of allocations of additional capital that lead to acceptable outcomes. We explain the conceptual framework and the definition of systemic risk measures, provide an algorithm for their computation, and illustrate their application in numerical case studies. We apply our methodology to systemic risk aggregation extending Chen, Iyengar & Moallemi (2013) and to network models as suggested in the seminal paper of Eisenberg & Noe (2001) and their generalizations as in Cifuentes, Shin & Ferrucci (2005). (Received September 16, 2015)