Preventing Collapse Of Financial Networks Through Systemic Risk Taxes - Answers From Agent Based Models

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Financial markets are exposed to systemic risk (SR), the risk that the system ceases to function and collapses. Since recently, it is possible to quantify SR in terms of underlying financial (multiplex) networks where nodes represent financial institutions, and links capture financial contracts such as loans, credits, or derivatives. We show that it is possible to quantify in real data the SR of individual transactions in a financial network. We propose a tax on individual transactions that is proportional to their contribution to the overall SR. If a transaction does not increase SR, it is tax free.

We demonstrate with an agent based model (CRISIS macro-financial model) that the proposed Systemic Risk Tax (SRT) leads to a self-organized re-structuring of financial networks that are practically free of SR.

ABM predictions agree remarkably well with the empirical data and can be used to understand the relation of credit risk and SR.

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