

Financial fragility in a self-organizing economy

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The paper discusses an economy with a large number of firms and some banks, where there are imperfections in the credit and in the good markets. Firms can borrow by banks to face possible liquidity crisis. However, each firm is subject to the risk of bankruptcy, and the latter depends both on its current profits and on its financial structure. In the same manner, bank can go bankrupt if a large number of firms cannot pay back their debts, so that it cannot respect some minimum capital requirements. We model this economy as a network where the relationships between firms and banks are represented by links. We study the dynamical properties of this network when interest rate, rate of inflation and minimum capital requirements change. In particular, we show how shocks to single firms are propagated by the network, and in what circumstances these shocks can cumulate among them bringing to a breakdown of a large part of network, i.e. a bankruptcy regarding both firms and banks.