

CIFREM SEMINARS

Firms-Banks Relationships and the Macroeconomy: Some Computational Experiments

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In this paper we present an agent-based model with heterogeneous agents capable of showing macroeconomic emergent properties. Our benchmark computable laboratory is based on a framework assuming imperfect capital markets, and different labour market's institutional settings. In particular, a large number of perfectly competitive firms are allowed to finance their working capital by raising debt from a given number of banks as soon as their internal net worth is insufficient to cover their needs. Individual credit supply is limited, as banks are allowed to extend credit up to a threshold calculated as a multiplier on their equity. The labour market is alternatively very stiff, or very flexible. Since we are interested in analyzing the role of the credit market microstructure on aggregate dynamics, the allocation of debt is modelled as a completely decentralized process. Issues relating to the interactions between financial fragility and macroeconomic performance are then addressed by carrying out a set of computable experiments. Two different scenarios are considered. In the first one, at each time period the financing mechanism is completely random: banks sort periodic applications from firms randomly, and then start allot funds in descending order. Firms which happen to rank lower have a higher probability to be rationed. The second experimental setting takes inspiration from the *relationship-banking* literature, in that banks are assumed to order firms' applications following the length of their past relationship with each applicant. The longer the relationship a firm has with a bank, the higher is the firm's position in the *financing* ranking. Once again, credit is allocated on descending order, and the usual rationing mechanism applies. Simulations suggest that the role of credit market microstructure on aggregate dynamics is very sensible to the different institutional settings: in a stiff labour market framework, relationship banking mechanism promotes the emergence of few big firms, while small and young firms experience high birth and death rates. The presence of very large firms, in turn, implies that the risk of credit default borne by the banking sector is highly concentrated. As we take the dynamics of the banks' equity as a measurement of systemic financial fragility, it turns out that the random financing mechanism results in a less financially fragile system. On the contrary, the flexible labour market context seems to favour relationship banking as a systemic financial stabilizing tool. Some remarks on the efficiency of credit market designs are finally presented.

Referente

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