Policy Experiments in a Macro ABM with Capital and Credit.

We build on the macroeconomic agent-based model with capital and credit developed by ADG to explore the effect of monetary and fiscal policies. In the paper "Emergent Dynamics of a Macroeconomic Agent Based Model with Capital and Credit" ADG focus on the interaction between upstream firms producing (durable and sticky) capital to be sold to downstream firms selling consumption goods to the households. Firms have limited access to credit to satisfy their financial needs. Banks assess the firms' creditworthiness on the basis of a measure of their financial stability.

The credit and capital channels play a crucial role in the emergence of a "crisis" (sudden and dramatic fall in activity followed by a slow recovery).

Our aim is first and foremost to investigate the emerging properties of the model following the introduction of a public sector. We introduce a fiscal authority that collects income taxes and provides unemployment subsidies. In the event of insufficient revenues from income taxation, the public deficit is financed issuing government bonds, purchased by the banking sector (that is reduced to one bank for the sake of simplicity). The issue of public bonds leads to a crowding-out phenomenon. The bank's purchase of bonds causes a contraction of the credit supply to the private sector. As a consequence, firms will face more stringent credit constraints.

Simulations show the emergence of a balanced government budget, even without imposing any constraint on government balance. The model settles around an equilibrium in which total tax revenues are equal to total subsidy payments. The equilibrium unemployment rate is determined by a function of the tax rate and the subsidy rate. The strong implication is that the fiscal authority is able to determine the unemployment rate, with a long-run budget balance.