Confidence Collapse in a Multi-Household DSGE Model

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In spite of their poor performance during the Global Financial Crisis, Dynamics Stochastic General Equilibrium (DSGE) models still constitute the workhorse of monetary policy models around the world. While some missing ingredients have been added since then to mitigate the distance to reality, DSGE models continue to describe a purely exogenous economy with one single equilibrium.

$$U_i = \log(c_t^i) - \gamma_i (n_t^i)^2 \tag{1}$$

$$U_i = f\left(\sum_{j\neq i} J_{ij} c_{t-1}^j\right) \log(c_t^i) - \gamma_i (n_t^i)^2 \tag{2}$$

In this talk, we present a variation of the original DSGE model (described by the utility function U shown in (1)) in which the household's utility consumption term has a feedback proportional to the past aggregate consumption (2).

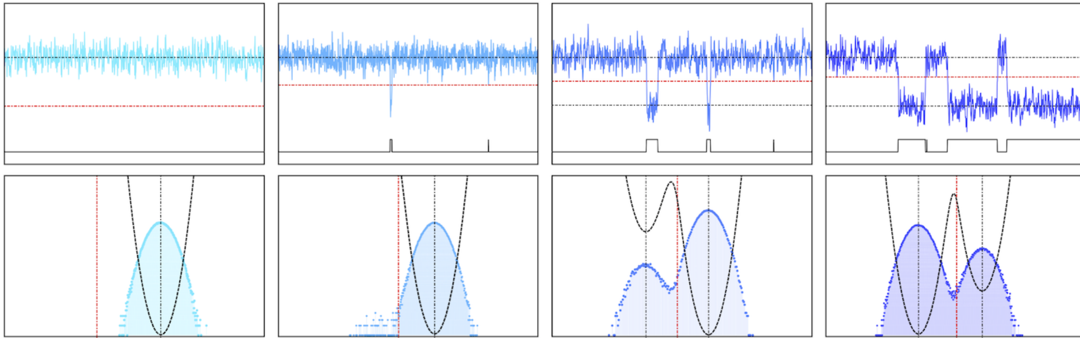

Figure 1. Dynamic of the aggregate consumption for different values of the confidence threshold.

This mechanism allows for the possibility that a relatively mild drop in economic conditions leads to a confidence collapse and a steep decline in economic activity. In other words it introduces different phases where the probability of having an economical crisis depends strongly on the people sensitivity to external shocks and their level of confidence, getting rid of both the single equilibrium paradigm and the merely exogenous nature of the economy described by DSGE models.

Références

1. J. Gali, Monetary policy, inflation, and the business cycle : an introduction to the new Keynesian framework and its applications, *Princeton University Press*, (2015).
2. R. Shiller, Narrative economics, *American Economic Review*, **107/4**, 967–1004 (2017).

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