

Comments on “Housing Market Bubbles and Business Cycles in an Agent-Based Credit Economy”

In this paper the authors propose an agent based model of a credit network economy. In particular, they “calibrate” the model with respect to the characteristics of the Iceland economy. The main goal of the paper is to show that a trade-off between growth and stability arises: loose regulation initially boosts growth but at the cost of growing instability that eventually lead to a crisis; a stricter regulation slightly reduces the economic growth but also improve the stability of the system; however, a too severe regulation can slow down economic growth. Accordingly, the paper suggests that a “right” regulation can prevent economic crises.

I am very sympathetic with the methodological approach and I found the topic of the paper very interesting. Nevertheless, I have some comments that could help the authors to improve the current version of the paper and maybe future developments of their modelling framework.

Although the recent crisis has highlighted some relevant limitations of the mainstream approach, mainly based on DSGE models, for instance regarding the role of financial factors, it is also true that some authors proposed a DSGE setting with the housing market and “impatient” households. So, even in the mainstream approach some papers have been proposed to analyse the transmission channel between households’ wealth and their consumption (which is one reason why the authors introduced the housing market in to the Iceace model). This should be taken into account by citing the related (mainstream) literature.

In my view the operation of the Equity Fund in the financial structure of the Iceace model is not so clear. Why are the shares of the equity fund equally distributed among households (maybe shares could be distributed according to households’ wealth)? Moreover, the equity fund finances agents only if they have been rationed by banks. Why? Is there a rationale for such an assumption based on the financial literature? If so, please provide one or more references and some additional comments on the topic.

According to footnote 5, the nominal loan rate is invariant between firms. I think the model could be enriched by introducing a spread which depends on firms’ (and households’) financial conditions, so that the bank charges a higher interest rate on riskier clients.

In the labour market section, the authors maintain that “employees are queued in descending order according to their skills”. Can the author add some explanation on workers’ skill heterogeneity?

In the credit market section the authors explain that “producers apply for credit first to their preferred bank randomly set ...”. Could the author explain better why an agent prefers a bank with respect to another?

The Equity Fund finances only producers with a minimum equity ratio of 5%. Why 5%? Is it an empirically based justification or a theoretical explanation for such an assumption?

The authors initialise agents’ balance sheets based on empirical evidence from the Iceland economy in section 3.1. Then, simulation results are presented in next sections. In particular, Monte Carlo simulations are presented in some tables and commented in the paper. Given that the authors propose an initialisation of the model based on real data, could they also check for the consistency between simulation results and macroeconomic series of Iceland economy? I would like to see if the

model is able to generate a macroeconomic evolution which is in line with real data (from the Iceland economy) starting from the empirically grounded initial setting proposed by the authors. If this is not the case, then the motivation for restricting the degrees of freedom of the model as proposed in section 3.1 is weaker.

The authors could add some other variables into tables as price inflation, wage inflation, households' total wealth, an debt-to-asset ratios for households and banks (in addition to firm leverage).

Starting from initial conditions explained in section 3.1, the authors study the dynamics of the model by means of computer simulations. In particular, the authors split the whole simulation period of 15 years into two blocks: from 1 to 6, and from 7 to 15. This is an interesting computational exercise that allows the authors to comment the evolution of the economy and the possible realisation of crises. However, in this way the authors do not consider a typical problem arising in the context of computer simulations, that is the dependence of simulation results on initial conditions. Now, in a sense the authors want that results depend on “empirically grounded” initial conditions. As said before, however, the author should demonstrate that the model is able to generate simulated series that match real data (that is the statistical properties of macroeconomic series of the Iceland economy). Finally, the authors could investigate the behaviour of their model after a reasonable number of simulation periods, that is when simulation results are no longer dependent on initial conditions. In other words, it would be interesting to study the characteristics of model simulations after having removed the effect of initial conditions.