

Referee report on “Learning to forecast, risk aversion, and microstructural aspects of financial stability” by A. E. Biondo.

I have read the paper and it contains a model of trader-level interactions in the financial market through order-books. The agents try to learn about the state of the economy and become *asker* or *bidder* (or remain neutral) depending on perceived profitability of executing trade. The model generates dynamical properties of the asset prices which replicates fat tailed distribution, long autocorrelation function of absolute return (zero ACF for return), volatility clustering etc.

The results are interesting. I recommend a revise and resubmit. I have a few comments that the authors should consider.

1. The author assumes that the readers are very familiar with the literature and skips some of the descriptive parts for the model set up and solution concept. It would be useful to explain the derivations in some details. See below for some specific examples.
2. It would be useful to explain how you are getting Eqn. 4. Also, you have not defined yet what is RV_t . How is it related to iRV_t ? Also, mention explicitly that RV denotes reference value.
3. There many missing citations in the text, that are represented as [?] (p. 4, after Eqn. 2), [?,?] (Conclusion) etc.
4. What is *informative endowment* (p. 3, Sec. 2)? Do you mean information set or learning rule?
5. There are 8 parameters (under Sec. 2.2, p. 7) in the table. First, please assign a table number. Second, add a discussion on how you have chosen these specific values. Third, discuss the robustness of the results with respect to the values of these parameters.
6. Some intuition about why the autocorrelation function shows long tail would be useful.
7. Remove the word ‘notorious’ from the first paragraph in the Conclusion (‘A peculiar advantage of this model, compared to **NOTORIOUS** existing models, is ...’; emphasis mine).

8. Author name of Ref. [74] is missing.
9. Last line of the Abstract: Explicitly write the effects of risk aversion rather than just saying there would be ‘perverse consequences’.

At a more general level, I have two criticisms that you may want to think about. However, I am not expecting you to explicitly incorporate them in the current paper, although some discussion would be useful.

1. There are too many free parameters (deterministic and stochastic) which makes it very difficult to understand exactly which variable is causing what. One of the big criticisms against large-scale macroeconomic models was the problem of over-fitting with too many free parameters and shocks. It would be important to reduce the number of parameters and proceed to econometric identification. For example, what would be the economic meaning of the terms $z_{1,2}$ in Eqn 8 or $^i\mu_\alpha$ in the equation right before it? There are many other instances of such parameters in the paper.
2. Expectation set up over a random walk process of fundamental values (Eqn. 1) seems like a problematic assumption. In this case, each shock is orthogonal and has a permanent effect. On an empirical ground, this is not a very tenable assumption. Secondly, the *fundamentalists* somehow learn about the dynamics of the true state FV_t but never quite get it right. Why cannot they just use the present value FV_t as the best prediction of FV_{t+1} ? That rule of thumb is probably the easiest to implement and the prediction matches with the martingale structure of the evolution of FV .