

## **Referee report on *A note on Aoki-Yoshikawa model* by Enrico Scalas and Ubaldo Garibaldi**

In this paper the equilibrium distribution is studied of a dynamical version of the Aoki-Yoshikawa model for a demand-driven economy. Depending on the form of the transition probabilities, the model displays different equilibrium distributions. Various types of well-known equilibrium distributions from statistical mechanics can be obtained by considering special cases. Aoki and Yoshikawa's solution is recovered if the choice parameter  $c$  is set equal to zero.

This paper is an excellent example of cross-fertilisation between different disciplines, and deserves to be included in the special issue on "Reconstructing Macroeconomics". In fact there seems to be only one minor negative aspect to the paper, which is that it is likely to be less accessible to readers lacking a basic familiarity with statistical physics. To maximise the potential readership, it might be helpful to enlighten these readers on a few issues. For instance, why, in physics, are the values  $c = 0, \pm 1$  the only values appearing in physical systems (p. 9, l. 11)? What is it that makes economic systems so different from systems usually studied in statistical physics? Is it the fact that Liouville's theorem does not hold, for instance?

Besides the fact that the paper nicely illustrates how a wide variety of equilibrium distributions can be obtained with a relatively simple generalisation of an existing agent-based model, this paper could be very instructive to physicists and economists who would like to apply similar techniques to other interacting agent models in economics (or possibly even in other fields).

### **Some minor issues**

1. In the top line on page 8, replace 'is said reversible' by 'is called reversible'.
2. Page 9, line 9: 'Polya' should be 'Pólya'