

Report on the paper by M. Aoki and H. Yoshikawa

The nature of Equilibrium in Macroeconomics – A critique of Equilibrium Search Theory

The purpose of the paper is to argue that “equilibrium search theory cannot explain an important stylized fact in the macroeconomy, namely the pattern of productivity dispersion observed in the real economy” (see p.3). The argument of the paper is based on the possibility that the property of non-self-averaging might prevail for the underlying family of micro-variables (e.g. local or sectoral demand shocks), and the so resulting internal inconsistencies within the concept of Equilibrium Search Theory. This possibility of the property of non-self-averaging to appear in the specific context considered is motivated by a theoretical model in which this property prevails, and the empirical finding of another paper (Aoyama et al. 2008) suggesting that the distribution of marginal productivity is a power law.

On a general level, I agree completely with the authors in their view that Equilibrium Search Theory is not a descriptively meaningful model of the real-world phenomena it aims to explain. I also find both the concept of non-self-averaging and the involved empirical finding about the distribution of productivity/marginal productivity very important and intriguing. I do, however, have some critical remarks on the synthesis of their argument put forth in the paper.

1. If it is the authors' aim to point out that Equilibrium Search Theory (EST), as represented by Lucas and Prescott (1974), does not provide realistic models of wage/marginal productivity dispersion found in empirical data, the argument can be safely made already on the basis of the numerous assumptions on individual rationality and the prevalence of optimality conditions EST makes. For example, I am not aware of any empirical/experimental evidence suggesting that real-world individuals can solve optimization problems in a literary sense (unless in near-trivial problems), in particular in the domain of search problems. Or, consider the assumption in EST that all the relevant distributions in the environment are known to the decision maker. Or stationarity. So why do the authors develop their argument as if EST were a meaningful and proper concept to start with in dealing with the issues under consideration, and it is only (or mainly) the possibility of non-self-averaging which makes EST fail as a positive theory?

Moreover, promoting the notion of non-self-averaging within EST appears, in my opinion, to make the case for its prevalence less robust, because placing it within EST implies excluding origins of non-self-averaging other than an infinite second moment of the (independent) individual variables. What if the individual variable distribution is, in fact, a truncated power law?

Would it not under these conditions, be more appropriate to build up a case against EST based on multiple arguments – as it would be more robust? And would it not be more natural to make the case for the concept of non-self-averaging without any relation to EST?

2. If the authors aim to take an EST perspective, with the specific assumption that the distribution of marginal productivity is a power law, they should in greater detail explain, e.g. what implications it has for the existence of search equilibrium on the individual level.

In conclusion, while I believe that the case both against the descriptive value of EST and for the relevance of non-self-averaging in economic modelling should be made, I am not sure that the synthesis of the argument in the paper is most appropriately chosen to serve these causes.