Active and Passive Learning in Agent-based Financial Markets

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Aims and scope →

1. This is not a survey of learning, or heterogeneous agent models finance. This is well beyond the scope of this short paper. On heterogeneous agent models many excellent surveys exist including, Chiarella et al. [2009], Hommes [2006], LeBaron [2006], and Lux [2009]. On learning models finance in general a recent survey of this large literature can be found in Pastor and Veronesi [2009].

2. Another early theoretical derivation is in Breiman [1961]. A nice summary of this is in Markowitz [1976]. Blume and Easley [1990] and Blume and Easley [2006] state the problem in the context of a utility maximizing portfolio decision. The latter paper proves that in a complete market world the convergence to true beliefs will occur regardless of preference parameters. However, the authors point out that in an incomplete market world this

6. The best-known case would be log utility.

7. See Pastor and Stambaugh [2009] for a more complete treatment of systems of this form in finance.

8. See LeBaron [2007] or Campbell and Viceira [2002] for derivations and connections to intertemporal preferences. The variance term in the numerator can be thought of as an adjustment for the fact that these are log returns.

9. The consumption fraction, λ, is irrelevant for wealth races of this form where it is considered to be the same across all agents. Each period all agents consume the same fraction of wealth, so the relative performance is not affected by λ.

[2007].

15. It reminds one of Fisher Black's discussions in Black [1986].

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