Active and Passive Learning in Agent-based Financial Markets

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Notes

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

5. There is one important class of models where passive learning is inactive. Models with Constant Absolute Risk Aversion (CARA) utility and adaptive rule selection generally have no passive learning component. Two very different examples of this are Brock and Hommes [1998] and Arthur et al. [1997]. Price formation depends on the fraction of traders in a given strategy, and not on their wealth.

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.

forms of active learning. Some of this work in financial markets is surveyed in Hommes [2010].

13. This is where Sims's [1980] critique of deviations from rationality is in full force.

14. Important current work has moved in the direction of estimating the intensity of choice as in Goldbaum and Mizrach [2008] or Boswijk et al. [2007].

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

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