1067-91-1112 **Yuanying Guan*** (yguan@math.fsu.edu). *Agent-based Asset Pricing Dynamics with incomplete market in Lucas Framework.* Preliminary report.

Lucas asset pricing model has been a very popular model in financial economics during the past decade. In incomplete market, the general existence of equilibrium and Pareto-optimality allocations may not hold. With heterogeneous agents assumption, market dynamics towards optimal allocations are even more complicated. In this paper, we incorporate agents' prediction into price equilibrium searching process, derive market pricing dynamics and implement simulations on behavior of markets.

Under independent identical distributed returns, Duffie's discrete-time asset pricing theory could be applied to solve for single agent's optimal policy. With learning schemes, agents are able to update their forecasts about price and make following move in next period. Since agents have different risk aversions and updating rules, some interesting chaotic dynamics come up through agents' forecasting and trading. Dynamical analysis on these phenomena provides us a better understanding of the market.

(Received September 19, 2010)