

Testing Theories of Investor Behavior: A Neural Approach

Cary Frydman
Nicholas Barberis
Colin Camerer
Peter Bossaerts
Antonio Rangel

April 2011

ABSTRACT

We show that neural data – data on brain activity obtained through functional magnetic resonance imaging (fMRI) – can be helpful for testing theories of investor behavior. We recruit 28 subjects to trade stocks in an experimental market and record their brain activity with fMRI while they trade. We find that, even though it is suboptimal, our subjects exhibit a strong disposition effect, on average. We then use the neural data to test a specific theory of the disposition effect, the “realization utility” hypothesis, which argues that the effect arises because people derive utility directly from realizing gains and losses. We find that the neural data provides support for this hypothesis. Most striking of all, we find that an area of the brain that is known to encode feelings of subjective pleasure exhibits a sharp upward spike in activity at precisely the moment at which a subject issues a command to sell a stock at a gain.

There is no paper available for this seminar. Hardcopies of the presentation slides are available in BRI-308 or via mail. Contact Terry Lichvar, 213.740.6515 or tlichvar@usc.edu