A Measure of Subjective Probability with Economic Applications: The Availability Heuristic

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Economic models often include agent expectations of the outcomes to uncertain events. Probabilities or probability distributions are required to calculate these expectations. Typically, these probabilities are assumed to be objective, i.e., taken as given or updated by Bayesian inference. Psychologists have found that people do not, in general, update these types of probabilities using Bayes Rule (Kahneman, Slovic, and Tversky 1982). Instead, they use heuristics that produce non-Bayesian outcomes, especially for low probability events (see Rabin, 1998).

We propose a mathematical model for the availability heuristic whose properties are discussed in Kahneman and Tversky (1973). We then propose financial applications of the heuristic in economic models. We find that overestimation of the subjective probabilities can cause overreaction and underreaction of expectations and, subsequently, asset prices.