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Unraveling Overreaction in Expectations: Leveraging Cognitive Sampling Algorithms in Price Prediction Tasks

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Abstract

When making financial forecasts, individuals often overreact to recent information, as consistently observed in both laboratory studies with naïve participants and professional consensus real-world forecasting. Current models attribute this overreaction to either an overestimation of recent information or memory constraints favoring more accessible information. An alternative explanation suggests individuals accurately integrate all available information into their mental posterior probability distribution for forecasting, but are unable to directly access this distribution, leading to dependence on approximation methods such as sampling. Local sampling algorithms have received recent support in other forecasting contexts and may introduce overreaction as a consequence of a starting point bias. By reanalyzing existing data from a price prediction task with a random walk price series, we observe increasing variability in predicted values and forecast errors as the horizon expands. Employing this heightened variability and overreaction, we differentiate between competing explanations for the observed forecasting behavior.