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Prospect Theory for Online Financial Trading YANG-YU LIU, Brigham and Women's Hospital and Harvard Medical School, JOSE C. NACHER, Toho University, TOMOSHIRO OCHIAI, Otsuma Women's University, MAURO MARTINO, Watson Research Center, IBM, YANIV ALTSHULER, MIT Media Lab — Prospect theory is widely viewed as the best available descriptive model of how people evaluate risk in experimental settings. According to prospect theory, people make decisions based on the potential value of losses and gains rather than the final outcome. People are risk-averse with respect to gains and risk-seeking with respect to losses, a phenomenon called "loss aversion". Despite of the fact that prospect theory has been well studied in behavioral economics at the theoretical level, there exist very few empirical research and most of them has been undertaken with micro-panel data. Here we analyze the trading activities of over 1.5 million members of an online financial trading community over 28 months, aiming to explore the large-scale empirical aspect of prospect theory. By analyzing and comparing the behaviour of "winners" and "losers", i.e., traders with positive or negative final net profit, we find clear evidence of the loss aversion phenomenon, an essence in prospect theory. This work demonstrates an unprecedented large-scale empirical evidence of prospect theory. It has immediate implication in financial trading, e.g., developing new trading strategies by minimizing the effect of loss aversion. It also provides opportunity to augment online social trading, where users are allowed to watch and follow the trading activity of others, by predicting potential winners based on their historical trading behaviour.

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