An Investigation of Factors that Influence Portfolio Choice Decisions

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We investigate how people allocate a limited set of resources between multiple risky prospects to construct a portfolio. In a set of experiments, we investigate how choice architecture, purchase cost framing, and correlation between prospects affects behavior. We find evidence that people are only very slightly susceptible to cost framing effects, including when framing is designed to nudge them towards safer or riskier options, and that people tend to ignore correlation between prospects. We find that personality traits such as locus of control can strongly influence risk tolerance levels. Interestingly, we also find that traditional measures of risk aversion are in fact linked to the level of diversification bias that people have, but that there is no evidence for naive diversification. When measured against mean-variance optimization, performance is highly dependent on aspects of choice architecture, but not on personality traits. We propose that choice bracketing, whether people evaluate prospects in a segregated manner or as an aggregated portfolio, can significantly affect behavior. To formalize this, we develop a set of behavioral models of portfolio choice that combine descriptive and normative economic models (e.g. cumulative prospect theory, modern portfolio theory) with cognitive process accounts (e.g. mental accounting, diversification bias, safety versus aspirational bias). Specifically, we postulate models of segregated and aggregated choice bracketing, and implement this within a Bayesian hierarchical inference framework. Analyzing behavior through the lens of these behavioral models, we show that people have a high preference for segregated choice bracketing. This preference is however modulated by features of choice architecture, as well as whether people demonstrate an external or internal locus of control. This work serves to improve our understanding of cognitive processes that affect portfolio choice and resource allocation decisions, and how these interact with aspects of choice architecture.

Keywords: portfolio allocation, modern portfolio theory, optimal allocation, choice bracketing, risky decision making, Bayesian, cognitive models, prospect theory, security-potential-aspiration theory, cost framing, correlation neglect, nudging