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# Myopic loss aversion and market experience

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ABSTRACT

We probe the boundaries of myopic loss aversion (MLA) theory through market treatments designed to reduce the MLA effect. Our market settings separate investment commitment from information frequency, display a running average asset value and explore the influence of participant experience. The market-based results suggest MLA persists with inexperienced participants despite efforts to mitigate MLA. Prices in markets with returning participants do not display an MLA effect. However, the same experienced participants individually succumb to MLA in an allocation setting immediately following the market. Overall, our results suggest that, while market experience mitigates the MLA effect, participants do not transfer these results to other settings.



## 1. Introduction

This paper examines the ability of markets to overcome myopic loss aversion (MLA). This ability of markets to overcome the MLA effect has received little attention in prior MLA research. The notable exception is Gneezy et al. (2003), which provides initial evidence that markets do not dispel individual MLA bias. The inability of Gneezy et al. (2003) markets to overcome MLA is curious given evidence that markets can overcome individual biases (Forsythe et al., 1992), and that market structure can drive biased traders to equilibrium (Jamal and Sunder, 1996). We employ a series of modifications to Gneezy et al. (2003) market design to further explore when market conditions influence the MLA effect.

We make four key modifications to Gneezy et al. (2003). First, we hold trading commitment constant across information frequency treatments by allowing trading every period, while comparing trading results with information frequency every period verses every fourth period. This design better reflects a typical market setting and allows us to focus on whether information frequency alone can drive MLA in a market setting. Second, we expand the number of trading periods to offer the market mechanism more time to overcome the MLA bias and move toward equilibrium. Third, we incorporate a treatment prominently displaying the average asset value, along with the periodically reported asset value. The average value aggregates and summarizes previous information and frames the information in a manner that should reduce the participants' heterogeneous beliefs about asset value and decrease the participants' cognitive costs to estimate the assets expected value. Finally, we explore the role of experience on MLA's effect by inviting a set of participants to return for a second set of experiments. These experienced subjects enable us to test whether market experience reduces bias in a manner that parallels research showing that trading experience can reduce behavioral biases (List, 2003).

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We find inexperienced participants succumb to MLA in our markets. Average trade values are lower when we provide information every period rather than summed and provided every four periods. This basic finding parallels Gneezy et al. (2003). The fact that participants still succumb to MLA with trading commitment and information frequency separated suggests that information frequency is sufficient to create the MLA effect. Furthermore, the treatment displaying average asset value does not mitigate the MLA effect. In contrast, we find that markets with experienced participants who return for a second market session do not display an MLA effect – mean prices are not significantly different across information frequencies. However, these same experienced participants do not overcome MLA in an allocation session immediately following the market session. The convergence in prices appears to be due to the power of the double auction to converge prices to equilibrium and not necessarily due to participants learning to overcome MLA bias. Our results suggest market experience alone does not transfer to other settings. Further research is needed to explore the conditions under which market experience reduces the MLA's impact.

This paper proceeds as follows. First, we provide background on MLA and theory to explore both the general and our specific market conditions that potentially mitigate individual MLA biases. Section 2 describes our market setting and the subsequent allocation treatments. Section 3 describes our results, and in Section 4 we conclude. Our conclusion includes potential limitations and opportunities for further research.

## 2. Background

### 2.1. Myopic loss aversion

Benartzi and Thaler (1995) present myopic loss aversion (MLA) as a way to explain the equity premium puzzle identified by Mehra and Prescott (1985). They argue MLA results from myopic portfolio evaluation and prospect theory. The result is a tendency to over invest in low-variance securities such as bonds, creating a much higher risk-return premium demanded for equities than otherwise predicted.[1]

On an individual basis, MLA combines investors' propensity to utilize mental accounting in evaluating investment outcomes on an interim, rather than longer-term basis, with the prospect theory value function that weights losses more heavily than gains (Thaler et al., 1997). When information is provided more frequently, individuals evaluate it more frequently. Investors evaluate these more frequent chunks of data as if they are concerned about short-term changes in wealth. However, the actual investor wealth does not differ over the periods of more frequent reporting unless they make different buy and sell decisions as a result of the more frequent information.[2] More frequent information results in investors reacting with more loss aversion than they would based upon long-term returns and produces an underinvestment in high-variance, high-return assets relative to less frequent reporting.

Thaler et al. (1997) provide a simple MLA example based on the following utility function:

$$U(x) = x \quad x \geq 0$$

$$2.5x \quad x < 0,$$

where $x$ is a change in wealth relative to the status quo. This loss aversion function weighs losses more heavily than gains consistent with prospect theory. Thaler et al. (1997) describe an investor who chooses between investing in an asset with mean return of 7 percent and a safe asset that pays a sure 1 percent per period. Further, they assume the risky asset pays 27 percent half of the time and −13 percent the other half.[3] The decision maker's choice will depend heavily on the frequency with which s/he evaluates the performance of the asset and experiences his/her loss aversion to holding the asset. In fact, the likelihood of seeing losses with more frequent observations works with prospect theory to increase the likelihood of disappointing returns (Gneezy et al., 2003). For example, based on the above loss aversion function, an investor who evaluates the return every period has an expected utility of −2.75 for the 7 percent asset compared to 1.0 for the safe asset in each individual period. When evaluated every period, the investor prefers the safe asset. However, if that same investor evaluates the 7 percent asset every two periods, his/her expected utility increases to 4.25 and s/he prefers the 7 percent asset over the sure 1 percent return. The expected change in wealth is 14 percent over two periods regardless of whether it is evaluated every period or not. This example emphasizes the role of myopia in this phenomenon. It is not just loss aversion that drives the result, but also the investor's myopic evaluation of the returns.

[1] See, for example, Benartzi and Thaler (1995), Thaler et al. (1997), Gneezy and Potters (1997), Gneezy et al. (2003), and Barberis et al. (2001) for additional discussion.

[2] This point is sometimes overlooked in the literature. If an investor holds an investment from time $t$ to time $t+4$, that investor's wealth does not differ at time $t+4$ across settings where in one case she only gets new information at time $t+4$ and the other case receives updated information at times $t+1$, $t+2$ and $t+3$. From a wealth utility standpoint, she should not value an asset differently between $t$ and $t+4$ from one setting to the other.

[3] Haigh and List (2005) appear to make a similar assumption in their Footnote 3.