Multi-Criteria Decision Support for Investment Decisions: Examining the Interactive Effects of Risk Profile, Information Horizon, and Prospect Format

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Abstract

Using a psychological approach toward designing a Multi-Criteria Decision Support Systems (MCDSS), three prominent design features – risk profile, information horizon, and prospect format – are embedded in a MCDSS to help users overcome a tendency to build overly conservative investment portfolios. Consistent with myopic loss aversion theory, users exhibit a decreased willingness to take calculated risks when a MCDSS presents risk profiles with more variation and larger probabilities and magnitudes of losses. Such risk profiles prove particularly problematic when extended information horizons (e.g., 10 years) prevail. Regardless of risk profile, a MCDSS can activate heuristic-based decision processes by presenting multi-trial prospects in a manner that overwhelms cognitive capacity. Implications for theory and practice are discussed.

1. Introduction

In the U.S., individuals directly manage over $8 trillion in retirement assets [12]. Evidence indicates that most people are not well equipped to handle retirement planning matters, which can lead to suboptimal investment outcomes [31]. While there are many pitfalls to consider, this study focuses on the equity premium puzzle [32], which indicates that investors hold overly conservative portfolios that provide relatively meager returns over time.

Managing a retirement portfolio involves forecasting and prioritizing multiple attributes across investment alternatives. The complexities of such multi-criteria decision problems tend to be exacerbated by risk and uncertainty [14], which can vary considerably depending on the length of time over which an investment is held [28].

Given that the majority of retirement plans can now be managed online, one potential solution lies in designing a Web-based Multi-Criteria Decision Support System (MCDSS) that helps individuals overcome decision-making shortcomings. By providing features that enable users to compare multiple criteria and subsequently choose among alternatives, a MCDSS holds promise for guiding users toward a particular decision objective [24]. Nonetheless, implementing a MCDSS may not necessarily translate into superior decisions, as technological features can enhance or hinder decision-making [27,28,29,30].

One pressing need relates to understanding the conditions under which decision support helps individuals avoid heuristic problem-solving approaches [6,37]. Specifically, the present effort focuses on an important heuristic whereby individuals tend to sacrifice long-term profits in favor of short-term safety.

To address this question, we adopt a psychological approach toward designing a MCDSS [20] to supplement human decision-making in a retirement portfolio management context. The approach first seeks to understand the psychological mechanisms underlying the equity premium puzzle by leveraging a robust theoretical perspective, myopic loss aversion. Armed with an understanding of how conservative choices emerge, three prominent MCDSS design features – risk profile, investment horizon, and prospect format – are tested in a simulated environment. Participants utilize a specific MCDSS design configuration to manage a portfolio of investments over a simulated 30-year retirement planning period. Findings, as well as implications for theory and practice are discussed.

2. Theoretical Background

Myopic loss aversion (MLA) [8] describes two cognitive forces, mental accounting and loss aversion, which jointly function to shape an individual’s attitude toward risk. Mental accounting [35] describes the manner in which individuals frame decision problems. Broad framing occurs when decision makers treat a series of decisions as interrelated events. In contrast, narrow framing (i.e., myopia) surfaces when individuals view decisions as separate, isolated instances. Derived from the prospect theory framework [23,38], the second component, loss aversion, describes a tendency to weigh losses more heavily than
gains of similar magnitude. As a result, decision makers tend to seek safety unless the potential profits outweigh losses to a considerable degree.

According to MLA, decision makers often shun riskier assets (e.g., equities) in favor of safer alternatives (e.g., bills) when framing decision problems myopically. Because riskier assets generate losses more frequently than safer alternatives over brief periods of time, myopic investors avoid potential losses in favor of safer alternatives. However, over extended time periods, the probability that riskier assets will produce a loss diminishes considerably. As investors view the decision problem more broadly, loss aversion wanes and riskier assets become more attractive relative to safer alternatives.

In the context of retirement portfolio management, a MCDSS that facilitates broad framing or reduces the magnitude of potential losses should help investors overcome a tendency to construct relatively conservative portfolios. Based on a solid theoretical foundation, the following section predicts a set of interrelationships among the risk profile of investment alternatives and two prominent MCDSS design features – information horizon and prospect format.

3. Hypotheses

As an initial step toward understanding the influence of risk profiles, we consider the two risky investments most commonly used in the MLA literature. Derived as a slightly loss averse variant of Samuelson’s wager [34], the most commonly operationalized alternative is a prospect possessing a one-third chance of gaining 250% and a two-thirds chance of losing 100% (+250%, 0.3333; -100%, 0.6667) per trial [7,16,18,19]. The second utilizes historical market data [9,28,36]. For instance, the Standard & Poors 500 Index (S&P 500) possesses a qualitatively different risk profile. From 1926-2010, the S&P 500 has exhibited a 71.76% chance of gaining 21.66% and a 28.24% chance of losing 13.46% (+21.66%, 0.7176; -13.46%, 0.2824) per year.

Based on the loss aversion aspect of MLA, studies clearly demonstrate that the distributional properties of a prospect influence an investor’s willingness to take calculated risks [25]. Decision makers abhor variance [22], as the wider range of possible outcomes signifies greater risk. In addition, according to the broader prospect theory, susceptibility to loss aversion increases proportionally as the probability and magnitude of a loss rise [23]. Examining the distributional properties of the investments above, the S&P 500 possesses lesser outcome variation, as well as a smaller probability and magnitude of a loss. Consequently, more aggressive choices should emerge when investors consider the investment based on the S&P 500.

H1: MCDSS users will construct riskier portfolios when a MCDSS presents a risk profile with lesser variation and a smaller probability and magnitude of a loss.

Not only may investors consider the prospect of a single play, but also a series of repeated trials. Known to influence risk preferences, information horizon refers to the span of time over which prospective probabilities and payoffs are presented [28]. Whereas short-term information horizons present prospects as a single trial, long-term information horizons display the combined probabilities and payoffs over a series of repeated trials. Evidence demonstrates the superiority of long-term information horizons in facilitating broader decision frames [9,19,28,39]. Because riskier assets are less likely to produce an overall loss over extended time periods, broad framing alleviates loss aversion. As a result, riskier assets become more appealing.

Nevertheless, an important boundary condition may exist when considering various risk profiles across multiple trials. Extending the information horizon from one to three years substantively reduces the probability of an overall loss for Samuelson’s wager (66.67% to 29.63%), as well as the S&P 500 (28.24% to 19.42%). However, when the information horizon extends 10 years, only the S&P 500 investment carries a substantive decrease in loss probability (19.42% to 7.4%). In fact, Samuelson’s wager yields a slightly higher probability (29.63% from 29.91%). Therefore, an interaction between risk profile and information horizon can be expected to emerge. Specifically, risk taking should increase when the information horizon extends from one to three years, regardless of risk profile. However, as the information horizon extends from three to 10 years, risk should increase when investors consider the realistic investment, but not Samuelson’s wager.

H2: MCDSS users will construct the riskiest portfolios when a MCDSS presents a risk profile with lesser variation and a smaller probability and magnitude of a loss over a 10-year information horizon.

Nonetheless, these relationships are likely qualified by prospect format, which we refer to as the manner in which a MCDSS presents prospective probabilities and payoffs. Specifically, we focus on whether the MCDSS displays prospects in a segregated or aggregated format. In the segregated version, the MCDSS displays all possible probability and payoff combinations
pertaining to a prospect. As the information horizon extends beyond a single period, the number of unique outcomes increases exponentially. Specifically, \(2^3\) (8) and \(2^{10}\) (1,024) possible combinations exist in three- and 10-year information horizons, respectively. Via combinatorial mathematics, combinations can be condensed into four (three-year) and 11 (10-year) unique outcomes. The aggregated format, in contrast, condenses prospective probabilities and payoffs into a mixed profile with one gain and one loss component.

Theory suggests that a MCDSS displaying 10-year information horizon and a segregated prospect format will activate myopic loss aversion. Given that decision makers can only cope with 5 ± 2 attributes simultaneously [33], displaying 11 unique probability and payoff combinations will likely overwhelm cognitive capacity, inducing a heuristic problem-solving approach [6,38]. When considering three-year information horizons, the number of attributes in segregated displays (i.e., four) falls within cognitive capabilities. Therefore, such a MCDSS environment is unlikely to activate myopic loss aversion. In a similar vein, aggregation portrays two attributes regardless of information horizon. Consequently, users should not resort to heuristic-based problem solving.

**H3:** MCDSS users will construct the riskiest portfolios when a MCDSS presents a risk profile with lesser variation and a smaller probability and magnitude of a loss using a aggregated prospect format.

### 4. Methodology

The hypotheses were tested using a 2 (risk profile; between-subjects) × 2 (information horizon; between-subjects) × 2 (prospect format; between-subjects) × 30 (risk; within-subjects) mixed experimental design.

Participants considered two investment choices – a safe and a risky alternative. The safe alternative was presented as a 100% chance of gaining 0% per year. The risk profile manipulation was implemented by varying the risky alternative as either Samuelson’s wager or the S&P 500. The former possessed a one-third chance of gaining 250% and a two-thirds chance of losing 100% (+250%, 0.3333; -100%, 0.6667) per year, whereas the latter possessed a 71.76% chance of gaining 21.66% and a 28.24% chance of losing 13.46% (+21.66%, 0.7176; -13.46%, 0.2824) per year.

Information horizon was manipulated at two levels – three-years, and 10-years. Because segregated and aggregated prospect formats (described below) are identical in one-year information horizons, this level was not considered. Participants in the three- and 10-year conditions were provided with risk profiles spanning a three- or 10-year period, respectively. To avoid the potentially confounding effect of cumulative returns across multiple time periods (i.e., total returns), all prospective probabilities and payoffs were displayed in annualized terms.

Prospect format was operationalized at two levels – segregated and aggregated. In the segregated prospect format treatment, the MCDSS displayed prospective probabilities and payoffs for each unique outcome. In the aggregated treatment, the MCDSS combined prospective probabilities and payoffs across time, yielding a prospect with single gain and loss components.

The dependent variable, risk, was operationalized as a within-subjects variable, where 30 repeated measures captured the percentage participants allocated to the risky alternative.

#### 4.1. Procedure

Following a recent MLA study [28], data were collected using a field experiment methodology. Retirement plan participants and students enrolled in business courses at a large university in the western U.S. were invited to participate. In total, 311 individuals volunteered, consisting of 59% males. The mean age was 31.70 years (SD = 14.43). On average, participants reported 4.56 years (SD = 8.27) investing experience.

Consistent with previous MLA studies [19,36], incentives yoked monetary payments to performance. Participants earned a base compensation of two U.S. dollars (USD), as well as a bonus ranging between zero and 10 USD. Total payments represented a proportion of their total wealth accumulated during the simulation. On average, participants completed the simulation in 30 minutes, earning approximately seven USD. The average final payoff typified the cost of one meal at a local fast food restaurant.

Participants received an electronic mail correspondence, which explained the purpose of the study, specified a URL to an experimental website, and supplied an account identifier and password to access their retirement account. After logging on to the website, the application randomly assigned participants to one of the between-subjects conditions. Participants completed a series of questionnaires capturing demographic information before starting the task. After finishing the task, the website thanked participants for their time and provided instructions for receiving compensation.
4.2. Task

Participants were introduced to the experimental task via written instructions, delivered through an Instructions screen on the experimental website. Participants could refer to the screen as often as needed while completing the task. The instructions asked participants to use the website to make a series of investment decisions, with the goal of maximizing their wealth over a simulated 30-year retirement planning period. Each participant was provided with an account containing an initial endowment of $3,000. Participants received the same, fixed endowment to invest each year. Wealth accumulated using an additive mechanism, where the outcome of each investment decision was added to the participant’s cumulative total. Each decision was independent, meaning that participants could not reinvest gains (or losses) accumulated over preceding years.

As they interacted with the MCDSS, users could click on a tab to access the Investments screen. At the top of the screen, the website displayed the risk profiles for investment alternatives. Depending on the information horizon condition, risk profiles were presented over three- or 10-year periods using the appropriate prospect format. To preclude ordering effects, each investment was randomly assigned as Investment A or Investment B one-half of the time.

The middle of the screen displayed retrospective returns for the preceding year. At the bottom of the screen, participants allocated a percentage of their endowment to each investment. The application ensured entries totaled 100%. Each year, the website required participants to enter new allocations, meaning that the allocation amounts did not automatically default to those entered in the previous year.

At the conclusion of each year, the application calculated returns. Specifically, a random number ranging from 1 to 10,000 was generated to determine whether allocations to the risky asset produced a gain or loss. For instance, a value of 7,176 or less signified a gain for the realistic investment, whereas higher values produced a loss. Numbers were randomly generated for each participant independently, meaning that participants experienced different patterns of gains and losses throughout the simulation. After calculating returns, the application proceeded to the next year and displayed an updated version of the Investments screen.

4.3. Control Variables

Covariates help reduce error variance, allowing the effects of the independent variables to be isolated more precisely [15]. Thus, five control variables were implemented. Males prefer riskier investment alternatives than do females [11]. Therefore, gender was included as a dichotomous variable (0 = female, 1 = male). Age, coded as a continuous variable, is suggested to be inversely related to risk taking [21]. In addition, experienced investors exhibit more extreme risk preferences than less experienced investors [18]. Therefore, investing experience was captured as a continuous variable in terms of years. In addition, willingness to take risks is heavily influenced by risk tolerance [19,28], conceptualized as the degree of market volatility an individual is willing to bear [3]. Finally, according to prospect theory, individuals experience outcomes relative to a reference point [23], which adapts over time in the direction of gains and losses [2,5]. Therefore, the model included prior period performance, calculated as the percentage gained (or lost) during the preceding year. The inclusion of prior period performance also controls for learning effects, as well as isolates the influence of the treatments over time. In addition, time and time squared were included as fixed effects covariates to examine whether risk taking varied within-subjects by time of measurement.

5. Analysis and Results

The data were analyzed via Linear Mixed Modeling (LMM). Risk was entered as the dependent variable, while the categorical variables risk profile, information horizon, prospect format, and the interaction terms were entered as fixed effects factors. The control variables gender, age, investing experience, and risk tolerance were entered into the model as fixed factor between-subjects covariates. The time-varying variables, prior period performance, time, and time squared were entered as a fixed factor within-subjects covariates.

As outlined in Hardin and Looney [19], the analyses progressed using the step-by-step model development process. Table 1 below depicts the mean risk observations and the statistical estimations across experimental treatments. For brevity, only the main effects and statistically relevant effects are shown.

Gender \((t(288.968) = 2.804, p = .005, r = .16)\), risk tolerance \((t(288.967) = 2.486, p = .013, r = .14)\), and prior period performance \((t(8014.046) = 2.652, p = .008, r = .15)\) proved to be significant covariates. Risk rose for participants who were male, who expressed a higher tolerance for risk, and whose portfolios performed better in the preceding period. Time \((t(2450.546) = -3.737, p < .001, r = .21)\) and time squared \((t(2056.053) = 3.734, p < .001, r = .21)\) were also significant, revealing that risk decreases over time at a rate that decelerates over time.
Supporting hypothesis H₁, risk profile produced a significant difference in risk ($F(1, 288.968) = 39.916, p < .001, d = .72$), with the S&P 500 investment ($M = 72.74$) inducing greater risk compared to Samuelson’s wager ($M = 56.96$). Although the main effects of information horizon ($F(1, 288.966) = .296, ns$) and prospect format ($F(1, 288.969) = 1.815, ns$) failed to approach significance, the risk profile × prospect format interaction proved to be a marginally significant predictor of risk at the $p < .10$ level ($F(1, 288.967) = 3.140, p = .077, d = .21$). None of the other two-way or three-way interactions influenced risk to a significant degree.

Table 1: Type III Fixed Effects Results for Risk

<table>
<thead>
<tr>
<th>Independent Variable</th>
<th>Risk</th>
<th>Type III Fixed Effects Results</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>n</td>
<td>$M$</td>
</tr>
<tr>
<td>Risk Profile (RP)</td>
<td></td>
<td>288.968</td>
</tr>
<tr>
<td>Samuelson’s Wage (SW)</td>
<td>155</td>
<td>56.96</td>
</tr>
<tr>
<td>S&amp;P 500 (SP)</td>
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<td>72.74</td>
</tr>
<tr>
<td>Information Horizon (IH)</td>
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<td>288.966</td>
</tr>
<tr>
<td>Three years</td>
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<td>65.32</td>
</tr>
<tr>
<td>10 years</td>
<td>154</td>
<td>64.18</td>
</tr>
<tr>
<td>Prospect Format (PF)</td>
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<tr>
<td>Segregated</td>
<td>154</td>
<td>63.19</td>
</tr>
<tr>
<td>Aggregated</td>
<td>157</td>
<td>66.51</td>
</tr>
<tr>
<td>RP × PF</td>
<td></td>
<td>288.907</td>
</tr>
<tr>
<td>SW Segregated</td>
<td>78</td>
<td>57.48</td>
</tr>
<tr>
<td>SW Aggregated</td>
<td>77</td>
<td>56.44</td>
</tr>
<tr>
<td>SP Segregated</td>
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<td>68.89</td>
</tr>
<tr>
<td>SP Aggregated</td>
<td>80</td>
<td>76.59</td>
</tr>
</tbody>
</table>

Note: The $d_f$ approximation was used to estimate $d$: Cohen’s $d$; $r$ = Pearson’s correlation coefficient.

Table 1: Type III Fixed Effects Results for Risk

Rejecting hypothesis H₂, the risk profile × information horizon interaction was non-significant. In contrast, risk profile × prospect format interaction yielded a significant relationship at the $p < .10$ level. Therefore, the data were broken down using spotlight analysis. When decision makers considered Samuelson’s wager, displaying prospects in segregated ($M = 57.48$) or aggregated ($M = 56.44$) format produced similar risk preferences. The S&P 500 investment, however, yielded a different insight. Compared to segregation ($M = 68.89$), aggregation ($M = 76.59$) promotes risk taking. Given that users constructed the riskiest portfolios when the MCDSS presented the S&P 500 alternative using an aggregated prospect format, hypothesis H₁ is supported.

6. Discussion

Benartzi and Thaler [8] put forth MLA as a theoretical explanation for the equity premium puzzle, one of the most elusive behavioral phenomena facing decision scientists. Despite several noteworthy discoveries in the literature, this research filled gaps by assessing the extent to MCDSS design features interact in an environment involving risky decisions. The results reveal key insights, broadening our ability to not only configure a MCDSS to optimize decision-making, but also to more thoroughly understand the phenomenon for which MLA theory was originally designed to explain and predict.

Consistent with expectations, the risk profile of the S&P 500 investment yielded a greater willingness to take calculated risks. When a MCDSS presents a risk profile with lesser variation and a smaller probability and magnitude of a loss, MCDSS users construct riskier portfolios. In terms of the predicted interactions, a risk profile × information horizon interaction failed to emerge. Extending the information horizon does not appear to broaden decision framing further, as risk preferences remain similar for each risk profile. Considering the preponderance of evidence documenting information horizon effects [9,19,28,39], a non-significant main effect may, at first, seem peculiar. As a reminder, the experimental design did not include one-year information horizons, as aggregated and segregated prospect formats could not be empirically compared. Both would have been identical, consisting of the same number of attributes (i.e., two). Had the design facilitated such a comparison, significant main and interactive effects would likely have emerged. Although future research needs to confirm this suspicion, previous MLA studies document lower mean risk when individuals consider Samuelson’s wager using a one-year information horizon [16,18].

Regarding the marginally significant interaction between risk profile and prospect format, the latter matters not when three-year information horizons prevail, regardless of risk profile. Because processing two (aggregated) and four (segregated) attributes lies within cognitive capacity, users respond to the risk profile of the investment rather than to prospect format. Prospect format matters when the MCDSS displays 10-year information horizons, but only when users confront the S&P 500 investment. As expected, risk increases as the information horizon extends to 10 years, but only if the MCDSS deploys an aggregated
prospect format. Because the combination of a 10-year information horizon and segregated prospect format provides more information than a user can cognitively handle, they resort to a heuristic problem-solving approach. As a result, loss aversion surfaces. When the MCDSS presents the risk profile of Samuelson’s wager, at 10-year information horizons, investors react similarly to segregated and aggregated prospect formats. Under these conditions, extending the information horizon from three- to 10-year provides no additional benefit, as expected.

In terms of the equity premium puzzle, the results highlight the importance of configuring decision environments to more closely mimic situations that real economic players confront. As predicted, the qualitatively disparate risk profiles influence portfolio construction in unique ways. Since the risk profile of Samuelson’s wager is atypical of alternatives offered in the majority of retirement plans, the generalizability of Samuelson’s wager can be called into question. In relation to the more realistic S&P 500 investment alternative, users build more conservative portfolios. Not only does Samuelson’s wager engender more timid choices, but users react differently when the MCDSS lengthens the information horizon from three to 10 years. Regardless of prospect format, users are unwilling to take additional risks. In contrast, users who consider the more realistic investment using an aggregated prospect format construct more aggressive portfolios. Looking across three- and 10-year information horizons, the probability of a loss remains relatively constant for the S&P 500 investment. As a result, investors who consider the former remain susceptible to loss aversion to a similar degree.

Despite these important discoveries, it should be noted that these data do not refute previous findings associated with Samuelson’s wager, which have been implemented in combination with one-year [7,16,17,18,19,25,26] and three-year [19] information horizons. Given that no studies to date have deployed Samuelson’s wager in conjunction with 10-year information horizons, this important boundary condition had yet to be encountered. Given that Samuelson’s wager encourages more cautious choices, these prior configurations merely provide a conservative test of MLA theory. Examining 10-year information horizons revealed another important insight related to prospect format. Whereas the segregated prospect format exposes investors to 11 possible outcomes, the aggregated prospect format presents two. The cognitive complexity associated with segregation appears to overwhelm investors, activating myopic loss aversion. In contrast, investors successfully cope with aggregated prospect formats. As expected, risk increases in a positive, linear fashion when the information horizon extends from three to 10 years. However, an important caveat exists. This effect applies to the S&P 500 investment only. Rather than succumbing to loss aversion, investors respond to the relatively miniscule possibility of a loss. In contrast, investors exhibit similar risk preferences when exposed to the Samuelson’s wager, regardless of prospect format. Even though aggregation reduces the criteria to a cognitively manageable level (i.e., two attributes), loss aversion continues to operate because the probability and magnitude of a loss remains relatively stable across information horizons.

Looking forward, there are opportunities to extend these findings. Designing a MCDSS to promote risk may not be prudent in all situations. Conventional wisdom recommends shifting retirement assets toward safer alternatives as retirement nears [10]. The goal involves minimizing the probability of incurring a precipitous short-term loss, which the investor may not be able to recoup over a longer time period. By included time and time squared parameters in the analysis, the results show a declining trend in risk over time, which may be attributable to decision makers employing such a strategy. This perspective implies that another concept, planning horizon [8], referred to as the span of time over which an investor plans to hold a portfolio, may influence investment choices over time. Given that planning horizon shortens as retirement approaches, individuals may be dynamically framing the decision problem more narrowly as time passes. Loss aversion proves more persuasive as perspective become more myopic, resulting in a gradual reallocation toward safer assets. Moreover, planning horizon may dominate other MCDSS design features. For instance, the effects of a one-year planning horizon would likely supersede a three-year information horizon, as prospective outcomes over a one-year period are more relevant. The potentially important influences of planning horizon clearly warrant further investigation.

In terms of individual differences, promoting risk may induce undesirable psychological effects in risk-averse investors. Although more aggressive portfolios will likely result in larger retirement nest eggs, such an approach may prove unpalatable to investors uncomfortable with risk and uncertainty. While more aggressive portfolios may generate better payoffs over time, more conservative approaches may provide other psychological benefits. For instance, research shows that money does not necessarily produce happiness [4]. Therefore, future research should consider tailoring investing strategies to the psychological needs of specific investor segments.
As alluded to above, future research may need to complement MLA with other theoretical perspectives to broaden our understanding of the equity premium puzzle. For instance, mechanisms beyond myopia and mental accounting (e.g., cognitive complexity) may help explain the results. Consistent with these notions, MLA “represents only the first step toward developing a behavioral theory of intertemporal framing in economic decision making” [19, p. 232]. Prospect theory, which subsumes the loss aversion aspect of MLA, holds promise for furthering knowledge. Prospect theory “is one of the – if not the – most prominent descriptive theories of decision making under uncertainty” [2, p. 99]. Considering broader elements of prospect theory, such as diminishing sensitivity (see [13]) and reference point adaptation [2,5] may offer novel insights. Consequently, research may need to evolve beyond an exclusive MLA perspective to better understand the equity premium puzzle.

7. Conclusion

This study highlights the importance of configuring a MCDSS to minimize use of heuristic problem-solving approaches and, thereby, maximizing user effectiveness. Given that MLA was conceived as a theoretical explanation for the equity premium puzzle, our findings carry implications for individual investors and application providers, who deploy systems that enable individuals to plan and execute investment decisions. MCDSS configurations that promote the construction of overly conservative portfolios, such as displaying segregated prospect formats over extended information horizons, may be contributing to the problem of accurately estimating a loss aversion parameter consistent with the historical equity premium (see [1]). While the implications of these findings are encouraging for MCDSS and MLA research alike, many interesting questions and opportunities remain.

8. References


