

May 1, 2008
Nancy M. Morris
Secretary
Securities and Exchange Commission
100 F Street, N. E. Washington, D.C. 20549-1090

RE: File No. S7-28-07

Dear Ms. Norris:

We applaud the proposal that would permit mutual fund companies to sell their shares by means of an easy to read, plain English “summary prospectus,” and to satisfy their prospectus delivery obligations under Section 5(b)(2) of the Securities Act of 1933 (the “Securities Act”) by providing the “statutory prospectus” on an Internet website. The Proposal would also amend Form N-1A to require that the summary prospectus disclosure includes key information in a standardized order.

Making wise financial investments is one of the most important and challenging decisions faced by consumers. However, investors now are confronted by mutual fund prospectuses crammed with data regarding a fund’s return performance, management expenses, loads, and marketing fees, as well as details of the portfolio’s holdings. Given the sheer quantity of available information to investors and the thousands of funds from which to choose, picking the fund which most appropriately matches one’s personal risk-return tradeoff, is a challenging task even for the savviest of investors.

Our research clearly indicates that many consumers have difficulty processing the information contained within mutual fund disclosures and therefore tend to rely on simple heuristics. Important information such as ongoing costs tends to be ignored while a great deal of weight is placed on past returns as a guide and predictor of future performance.

It is important to provide consumers with more understandable and meaningful information about mutual funds. The provision of information in a choice situation typically can provide important consumer benefits such as improved decision-making, enhanced product quality and lower prices. However, in order for that information to have a positive impact on the consumer decision making process, it must be easily accessible and presented in a clear and understandable format. The proposed changes are a step in the right direction. We have attached a copy of our recent published work on a summary prospectus to provide further background on our findings.

Sincerely,

/s/

Elizabeth Howlett

Professor of Marketing, University of Arkansas

John Kozup

Director, Center for Marketing and Public Policy Research Villanova University

Michael Pagano

Associate Professor of Finance, Villanova University

Attachment: "The Effects of Summary Information on Consumer Perceptions of Mutual Fund Characteristics"

Bets

Elizabeth Howlett
Professor of Marketing and Logistics
Sam M. Walton College of Business
University of Arkansas

JOHN KOZUP, ELIZABETH HOWLETT, AND MICHAEL PAGANO

The Effects of Summary Information on Consumer Perceptions of Mutual Fund Characteristics

Choosing how to best invest for retirement is one of the most important decisions a consumer can make. Unfortunately, this can be an especially challenging task given the current financial information disclosure environment. The objective of this research was to explore whether a modified method of supplemental information disclosure impacts investors' fund evaluations and investment intentions. Results indicate that while investors continue to place too much emphasis on prior performance, the provision of supplemental information, particularly in a graphical format, interacts with performance and investment knowledge to influence perceptions and evaluations of mutual funds.

Making wise financial investments is one of the most important and challenging decisions faced by consumers. One way to maintain and build wealth is to purchase shares in one or more of the thousands of available mutual funds. Millions of individuals count on these funds to provide them with a comfortable retirement income (Investment Company Institute 2005). This issue becomes increasingly important with the push by both government and industry to privatize individual retirement accounts. Corporations are shifting the pension burden from a defined pension benefit program to 401(k) programs managed primarily by employees. The 401(k) plans offered by employers are now the primary form of retirement savings for over forty-two million Americans with nearly two trillion dollars in assets (Lauricella 2004). Proponents of privatization argue that individuals should, from a normative perspective, have the right to manage their own money. Proponents also argue that individuals could realize greater returns by investing a portion of their Social Security savings into the stock market. For example, a Bush administration proposal would allow

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The authors wish to thank MSI International, a full-service marketing research firm in King of Prussia, PA, for the use of their Internet panel.

individuals to choose from a range of investment options once their Social Security account reached a specified minimum amount. Opponents of privatization argue that novice investors unfamiliar with risk and diversification leave themselves vulnerable to fluctuations within the market. These fluctuations, critics argue, could result in a substantial decline in retirement earnings of those individuals who need the money the most. Employers are increasingly concerned with the difficulty of getting employees familiar with the basics of 401(k) plans. Education has become more difficult with the number of investment options increasing for eligible employees of many company retirement plans. Data support this conclusion. To illustrate, for the ten years ended in 2002, the median return on company-managed investment accounts averaged 6.81% versus 6.35% for employee-managed investment accounts. This difference could result in a difference of \$88,000 over a thirty-year period for a \$100,000 investment (Lauricella 2004).

Innovations in financial services and information technology, as well as increased financial disclosure requirements mandated by regulators, have created a choice environment replete with information. However, navigating through the plethora of information is not an easy task. Investors face mutual fund prospectuses crammed with data regarding a fund's return performance, management expenses, loads, and marketing fees, as well as details of the portfolio's holdings. Given the sheer quantity of available information to investors and the thousands of funds from which to choose, picking the fund that most appropriately matches his/her personal risk-return trade-off is a challenging task even for the savviest of investors.

The provision of information in a choice situation typically can provide important consumer benefits such as improved decision making, enhanced product quality, and lower prices (Mazis et al. 1981). However, in order for that information to have a positive impact on the consumer decision-making process, it must be easily accessible and presented in a clear and understandable format. Unfortunately, the wide variety of choices and information, coupled with an awareness of the need to make wise investment decisions, has made investing in a mutual fund a stressful and confusing decision-making process. Scholars have issued a call for more consumer research that specifically explores ways to facilitate the most important and challenging decisions made by consumers (Bazerman 2001). Investigating investors' financial knowledge and perceptions of investment products is a clear example of such research.

Within the policy domain, there have been specific calls for format testing of summary disclosures of financial information (Woodward 2004a). Both the Federal Trade Commission and the Securities and Exchange

Commission (SEC) have investigated the possibility of mandating a standardized summary disclosure in order to improve consumer comprehension, facilitate fund differentiation, and increase awareness of key information (Woodward 2004a, 2004b). For example, the SEC is aware that the ordinary investor faces a complex decision when choosing a mutual fund, and thus, the SEC provides a detailed online guide that describes numerous relevant factors related to risk, return, and expenses (e.g., SEC 2006). In addition, SEC Chairman Christopher Cox has proposed using Web-based “tagging” technology to make it easier for investors to compare the performance of different mutual funds. Research by the Investment Company Institute, an organization that represents the mutual fund industry, supports the revamping of the disclosure mechanism to include interactive data (West 2006). Tagging involves the placement of electronic tags on specific data items (e.g., revenue, profit margins, or reserves), which allows investors to compare these interactive data across companies and industry groups. However, it is not clear whether the use of such technology, if implemented in its currently proposed format, will result in a standardized summary disclosure of the most-salient mutual fund data.

Critics of financial service firms argue that they keep the cost of investing low while charging customers exorbitant fees (Bazerman 2001; Zweig 2000). In a study of the S&P 500 index fund market, researchers found that while average fees rose, the market share of the most economical funds fell (Hortacsu and Syverson 2003). According to the authors, the lowest-cost S&P 500 index fund has expenses of approximately 9.5 basis points, while the highest-cost fund has fees of 268 basis points (Hortacsu and Syverson 2003; Woodward 2004b). Individuals investing in the lower-expense fund would have double the retirement income versus the more expensive fund (Woodward 2004b). Investors, critics argue, lack the knowledge to differentiate between high- and low-cost investment products (Bazerman 2001; Yohannes 1988). Thus, the purpose of this research is to explore the effects of salient summary information about a mutual fund on investor perceptions and fund evaluations. Clearly, this issue has important public policy implications. The inability of investors to make wise investment decisions may have a significant negative impact on their quality of life in retirement and increase the likelihood of their dependence on government assistance programs.

BACKGROUND AND LITERATURE REVIEW

The percentage of novice investors who own mutual funds has grown more than eightfold over the past twenty-five years (*2005 Investment*

Company Institute Fact Book). Over that period, innovations in financial services and information technology, as well as increased financial disclosure requirements mandated by regulators, have led to an explosion of information that is disseminated to the novice investor. The rapid growth in assets under management over the period of 1980–2004 and the increased exposure of U.S. household wealth to the stock and bond markets have provided the novice investor with a wider array of choices in terms of types of funds, investing styles, risk, and expense information. Mutual fund prospectuses now brim with data on a fund's return performance, management expenses, loads, and marketing fees, as well as details of the portfolio's holdings.

The increase in fund choice and fund information, coupled with the general public's greater awareness of the need to invest wisely in order to meet personal financial goals, has increased the average investor's desire to make effective decisions related to the choice of mutual funds that meet his/her return objectives while taking on an acceptable level of risk. Unfortunately, research in finance, economics, and the psychology of economic decision making suggests that the average investor has difficulty dealing with the complexity of sifting through mutual fund data in order to make investment decisions that properly balance risk, return, as well as the management expenses and operating costs of a fund. For example, Benartzi and Thaler (2001) find that mutual fund choices for the defined contribution pension plans of employees at a large university and a commercial airline company were determined largely by the number of stock and bond fund choices presented within each plan. That is, a plan that had more bond funds than stock funds led to a disproportionately high share of retirement savings being allocated to the more-conservative bond funds. Conversely, a plan that offered more stock funds than bond funds led investors to allocate a disproportionately large share of savings to stock funds. The authors conclude that their findings are consistent with a naïve "1/ n " allocation strategy where a roughly equal share of savings is allocated across the n funds offered to the investor. These decisions suggest that investors have a difficult time deciding how to allocate their savings across mutual funds and thus use a simple heuristic to resolve this problem.

Previous fund performance, search costs, company size, and the firm's level of marketing effort seem to have a strong influence on investors' mutual fund selection process (Sirri and Tufano 1998). Fund inflows are greater when the fund management company is larger and expends a higher level of marketing effort (even after controlling for the level of past fund performance). This indicates that investors, in general, do not necessarily take money out of mediocre or low-performing funds run by

large fund management companies even though there are clearly many alternative high-performing funds.

The above findings corroborate some of the early research in the behavioral finance literature. Shefrin and Statman (1984, 1985) and DeBondt and Thaler (1985) were among the first finance papers to explore the implications of Kahneman and Tversky's (1979) seminal findings related to the psychology of economic decision making. Shefrin and Statman's work examines why many individual investors prefer dividends over capital gains and why investors typically hold losing stocks too long while selling winning stocks too early. The authors explain this type of behavior via heuristic biases such as overconfidence and anchoring, as well as frame dependence (i.e., the answer to a question can change depending on how it is framed rather than due to any substantive change in the question). Thus, the extent to which behavioral/psychological biases ultimately affect the pricing of securities, investor decisions, and stock market behavior is still open to debate and warrants further empirical analysis. Limited cognitive processing on the part of investors opens up avenues for an effective information provision program that maximizes investors' constrained capabilities, ultimately impacting fund evaluations and potentially investment intentions. The use of a summary disclosure is one method available to accomplish such a goal.

HYPOTHESES

Research in other product contexts, particularly within the fields of nutrition and drug information provision, can provide insight regarding how supplemental summary information may potentially influence investors' responses. Prior research in the area of nutrition information provision supported the creation of a summary format that listed key product attributes. The Nutrition Facts panel mandated by the Nutrition Labeling and Education Act provides the summary format on food packages conveying information on food nutrients, vitamins, as well as recommended daily allowances. Consumers use the Nutrition Facts panel to verify the claims made by both advertising and product on food packages (Ford et al. 1996; Garretson and Burton 2000; Levy and Derby 1995) and, more recently, on restaurant menus (Kozup, Creyer, and Burton 2003).

Additional studies support the impact of summary information on consumer evaluations. In testing consumer performance when exposed to summary information, Barone et al. (1996) found that respondents given no summary information showed no discrimination between healthy and unhealthy brands of a food product, whereas respondents given summary information rated the healthy brand superior to the unhealthy brand on

several nutrition-related attributes. In a study of television advertisements, summary information may aid investors in making interbrand judgments within a product category by providing a “shortcut” to comparison shopping (Viswanathan and Hastak 2002). Information in the prescription drug arena also provides insight into the use of a “brief summary” format. The provision, amount, and format of drug risk information were found to increase risk-related knowledge in several studies (Morris and Millstein 1984; Morris, Ruffner, and Klimberg 1985) as well as impact consumer appeal for a particular drug (Davis 2000; Tucker and Smith 1987).

Since prior research has shown that summary product information can significantly impact consumers’ product evaluations across a variety of domains, it seems likely that the provision of supplemental information will have a considerable influence on investors’ mutual fund evaluations as well. Typically, current investment decisions are strongly influenced by the past performance of those investments (Coval and Shumway 2005; Johnson and Tellis 2005). In fact, few are immune to the predictive power of the “hot hand effect,” the term used to describe the bias that occurs when an observed trend that may be part of a random process is projected into the future (Andreassen 1988). Many mutual fund advertisements even encourage this bias by emphasizing the fund’s past performance (Johnson and Tellis 2005). Thus, positive (negative) prior fund performance is expected to have a favorable (unfavorable) influence on investors’ fund attitudes, investment intentions, and expectations regarding future performance. In addition, positive (negative) prior fund performance will decrease (increase) the level of perceived risk associated with that fund.

However, we suggest that the hot hand effect is most likely to occur when investors have clear and easily accessible performance information that facilitates comparisons between the options. That is, simply presenting the past performance of a fund may not provide enough information. An important factor in the processing of numerical information is the need for a comparative baseline (Viswanathan and Hastak 2002). Researchers argue that the key to effective processing information lies in how easily the information conveys meaning (Viswanathan and Childers 1996). Displaying information in a graphical format has been shown to be an especially effective way to convey information to consumers (Bettman, Payne, and Staelin 1986). According to research on the cost–benefit principle (Payne 1982), well-structured displays of information minimize search costs for a decision maker. Furthermore, graphical formats (vs. alphanumeric information) matter most in the initial stages of information processing, impacting the amount of attention and consequently attitudes toward certain product attributes (Jarvenpaa 1990).

Well-known models of persuasion such as the Elaboration Likelihood Model (Petty and Cacioppo 1981, 1986) and the Heuristic–Systematic Model (Chaiken 1980) also provide some guidance as to the effects of varied types of information on consumer product evaluations. In their guidance on developing effective risk communications, Rucker and Petty (2006) note the importance of identifying whether the audience will process the information in a careful or peripheral manner and designing information based on their respective elaboration level. Surveys of investors indicate that a very small percentage of investors actually read the prospectus with care. Based on the Elaboration Likelihood Model, this could result from a lack of motivation to process the information, ability to process the information, or both. Conveying the information in a graphical format therefore may serve as a remedy for novice (peripheral) processors. Similarly, within the Heuristic–Systematic Model framework, systematic processing of the prospectus, based on surveys of investors, may occur infrequently if at all. Heuristic processing, on the other hand, may occur more frequently as investors may gravitate toward one salient attribute (e.g., performance) to make a decision. A graphical representation of key information that places other attributes at an equal footing with performance may serve to attenuate faulty heuristic processing and subsequently impact attribute evaluations and behavioral intentions.

Presentation of fund performance information in a graphical (matrix) format is expected to facilitate the processing of information, which will in turn influence attitudes and intentions. More specifically, since graphical information has been shown to convey risk information more effectively than numerical information (Stone, Yates, and Parker 1997), the provision of graphical information should interact with prior fund performance to influence the dependent measures. In the absence of supplemental graphical information, prior fund performance will have little influence on investors' attitudes, investment intentions, expectations regarding future performance, and perceived risk. However, when supplemental graphical information is available, attitudes, investment intentions, and expectations regarding future performance will be more positive and perceived risk will be lower when the prior performance of that fund was above average as compared to when it was below average.

The presence of supplemental information presented in a written-text format should also serve to influence attitudes and investment intentions associated with the specific fund. Research has shown that novice consumers require salient decision criteria when evaluating choice alternatives (Bettman and Sujana 1987), and written-text information may serve that function. If this is the case, then the provision of written text supplemental

information is likely to affect investors in much the same way graphical information is expected to influence responses.

H1a: The provision of graphical supplemental information will interact with prior performance to influence investors' responses. In the absence of graphical supplemental information, prior fund performance will have no significant effect on investors' responses. However, when supplemental graphical information is provided, attitudes toward the fund, investment intentions, and expectations regarding future performance will be more positive (negative) and perceived risk will be lower (higher) when prior performance was above average (below average).

H1b: The provision of written-text supplemental information will interact with prior performance to influence investors' responses. In the absence of written-text supplemental information, prior fund performance will have no significant effect on investors' responses. However, when supplemental information is provided, attitudes toward the fund, investment intentions, and expectations regarding future performance will be more positive (negative) and perceived risk will be lower (higher) when prior performance was above average (below average).

Prior knowledge about the mutual fund investment process is also expected to influence investors' responses. More specifically, investors with higher levels of knowledge should be able to better use the financial information that is available. This assumption is based on prior research that has shown that greater product knowledge allows consumers to use product-related information more appropriately in judgments and decisions (Alba and Hutchinson 1987; Levy, Fein, and Stephenson 1993). In addition, more knowledgeable consumers seem to have more favorable attitudes, in general, toward both the product and information about the product (Suter and Burton 1996). Research in the areas of novice and expert decision making also support this premise (Bettman and Sujana 1987; Maheswaran and Sternthal 1990; Sujana 1985). Since prior knowledge is presumed to influence investors' use of financial information, an interaction between the provision of information and prior knowledge also seems likely. More knowledgeable consumers are less likely to "need" supplemental information to make an informed decision. Note that we are presuming that, given the fact that mutual funds are communicated to investors through government (the SEC), the business community, and third-party sources (financial planners and educators) as a wise way to invest, investors with prior investment knowledge will have a positive opinion of mutual funds.

H2: Investors with prior investment knowledge will report more positive (negative) attitudes toward a specific superior (inferior) fund, higher (lower) investment intentions and future performance expectations, and lower (higher) levels of perceived risk than less knowledgeable consumers.

H3: Investors' prior investment knowledge level will interact with the provision of graphical financial information to influence (1) expectations regarding future performance and (2) perceived risk levels. When knowledge is high, the provision of graphical information will have no effect on either expected performance or perceived risk. However, for low-knowledge respondents, the provision of graphical information will have a stronger (positive) effect on expected performance and a lower (negative) effect on perceived risk levels.

Extensive prior research suggests that product risk information can influence consumers' product evaluations by making potential gains and losses more salient (Goetzl 2000, 2001; Morris, Mazis, and Brinberg 1989). We suggest that a fund's level of perceived risk will mediate the effects that a consumer's general attitude toward mutual fund investments has on attitudes and intentions associated with a specific mutual fund. That is, we suggest that perceived risk serves as a mediator that accounts for the relationship between the consumer's attitude toward mutual funds as a product class and the outcome variables (i.e., attitudes and investment intentions associated with a specific mutual fund).

H4: Perceived risk will mediate the influence of a consumer's general attitude toward the product class (mutual funds) on attitudes and intentions associated with a specific mutual fund.

It is expected that the inclusion of supplemental information, regardless of format, will result in stronger (more-positive) perceptions of the amount of information supplied to investors. Prior research demonstrates that both graphical and alphanumeric information display formats impact the attention given to product attributes (Jarvenpaa 1990). Therefore, it is assumed that investors' estimates of the amount of information conveyed will be higher when supplemental information is presented. Prior research has shown that perceived quantity of information factors into investors' ratings of decision quality, consumer purchase satisfaction, and decision process satisfaction (Zhang and Fitzsimons 1999). Additionally, investors exhibiting a positive pre-existing attitude toward the product class (mutual funds) may be more likely to attend to and process information associated with the fund, also resulting in higher estimates on information quantity.

H5: The provision of summary information, regardless of the format in which it is presented, will positively affect the perceived quantity of information provided about a mutual fund.

H6: Investors' attitudes toward the product class (mutual funds) will influence perceived information quantity. More positive attitudes will be associated with greater perceived information quantity.

METHOD

Design, Procedures, and Study Participants

A 2 (provision of graphical information: provided vs. not provided) \times 2 (provision of supplemental written-text information: provided vs. not provided) \times 2 (fund performance: below average vs. above average) \times 2 (investor knowledge: high vs. low) between-subjects experimental design was employed. Whereas the former three variables were manipulated, investor knowledge was a measured independent variable. A self-report measure was used to assess investors' investment knowledge.

For each of the conditions, a mock-up prospectus was developed. All subjects were given data on annual total returns for one, three, and five years as well as the total returns of the S&P 500 over the same period. All subjects were also given annual performance data for the fund for the previous three years (2001–2003). Finally, data were given for annual fund operating expenses to all study participants. The total return information and annual fund operating performance data were varied to reflect good- versus poor-performing funds. Similarly, the annual fund operating expense information was varied to reflect above-average versus below-average fund expenses.

In addition to the total return, annual performance, and annual expense data, subjects in the graphical condition were exposed to two 3×3 matrices representing investment style and three-year within-category performance data, respectively. The first matrix identified the fund category (large cap vs. medium cap vs. small cap on the vertical axis) and investment orientation of the fund (value vs. mixed vs. growth on the horizontal axis). For the purposes of this study, fund category and investment orientation remained invariant across conditions (large capitalization with mixed orientation). This allowed for flexibility with regard to the manipulations of performance and risk while maintaining believability. The three-year within-category performance matrix graphically conveyed information on the relative return, risk, and expense data of the fund compared to the average within the fund category.

A matrix format has been frequently used in information processing experiments (e.g., Bettman and Kakkar 1977; Capon and Burke 1980). The horizontal axis represented the expenses, return, and risk dimensions. The vertical axis represented the fund's relative rating on those attributes as above average, average, or below average. A check mark was used to indicate the fund's performance in each of the three attributes. Prior fund performance was manipulated consistently across the three attributes (return,

risk, and expenses). For example, an above-average fund had positive one-, three-, and five-year total return data (29.9%, 3.1%, and 7.6%, respectively). Correspondingly, the graphical condition represented these data with a check mark in the above-average box for returns (see Appendices 1–3 for an overview of the data for the prior fund performance conditions).

The written-text supplemental information condition consisted of an additional section (titled supplemental information) listed below the expense information on the one-page prospectus. This information included a relative return ranking, relative risk ranking, and a three-year average expense ratio. The relative return and risk rankings were based on the fund's annual average return and the standard deviation of these annual returns over the most-recent three-year period. For the expense ratio data, an arithmetic average of the fund's expense ratio over the most-recent three-year period was employed. This information was manipulated across fund performance conditions to represent above-average or below-average performance across the three attributes. To be considered above average, the relevant metric (return, risk, or expense ratio) must be more than one standard deviation above the mean value for this metric within its peer group of mutual funds. Likewise, to be considered below average, the relevant metric must be more than one standard deviation below the mean value of this metric for its peer group of funds. The formats for both the basic and the supplemental disclosures were modeled after the typical representations of these data in publications such as those produced by Morningstar's mutual fund rating service, American Association of Individual Investors' mutual fund guides, and actual mutual fund prospectuses. As in the graphical condition, attribute value valences were consistent across conditions (e.g., a below-average fund had poor returns, high risk, and high expenses). A pilot test confirmed no significant difference between the graphical and the written-text representations of expenses ($F < 1, p > .10$).

Participants were members of the Planet Panel, a nationwide Internet research panel. Members of the research panel were entered into a drawing for cash prizes in exchange for their participation and randomly assigned to the experimental conditions. The mutual fund stimuli were presented to subjects in a static file that mirrored a traditional print disclosure. Investors are increasingly turning to the Internet to evaluate mutual fund information. Also, as previously stated, the SEC (2006) has proposed a new Internet-based disclosure regimen. Three hundred thirty-eight panel members participated, and ages ranged from nineteen to eighty with a mean age of forty-one (twenty-one subjects per cell). Approximately 44 percent have invested in mutual funds. Fifty-two percent of respondents were female.

Subjects were instructed that they had \$2,000 to invest and are evaluating a mutual fund for an investment opportunity. Subjects were then exposed to the stimuli and then answered the survey questions.

Dependent Measures

Most of the dependent measures in the study were assessed with 7-point scales; all multi-item measures were divided by the number of scale items, and these mean scores were used in analyses. Attitude toward the specific mutual fund shown was measured with three items (favorable/unfavorable, good/bad, and positive/negative); higher values indicate less-favorable attitudes. Cronbach's coefficient alpha reliability estimate for this scale was .97. The investment intention scale used the following three items: "Assuming you were going to invest in a mutual fund, would you be more or less likely to invest in this fund, given the information shown?"; "Given the information shown about the fund, how probable is it that you would consider investing in this fund, if you were going to invest?"; and "How likely would you be to invest in this fund, given the information shown?" (end points 1 = more likely/7 = less likely). Coefficient alpha was .97 for this measure. The expected future performance of the fund was assessed by the following four 7-point items (coefficient $\alpha = .93$): "Do you consider the potential financial returns associated with investing in this mutual fund to be (endpoints 1 = negative/7 = positive, favorable/unfavorable (reverse-coded), poor/good, and very low/very high)?" The perceived risk of the mutual fund was evaluated by a single 7-point item (1 = very risky/7 = not at all risky). Self-reported mutual fund knowledge was assessed by the following single-item measure (1 = not at all knowledgeable/7 = very knowledgeable): How would you rate your level of knowledge concerning mutual funds? A median split was performed on this measure to create high-prior knowledge and low-prior knowledge groups.

The perceived quantity of information was assessed by the following two 7-point items ($R = .78, p < .001$): "In general, the amount of information provided for the mutual fund was (1 = a little/7 = a lot)" and "In general, the information provided about the mutual fund seems (1 = not at all complete/7 = very complete)." A general measure of attitude toward the product class (mutual funds) (the mediator) contained seven items (sample item: "If I were to invest in a mutual fund, I am concerned that the mutual fund will not provide the level of performance that I would be expecting."). Coefficient alpha for scale was .92 (Appendix 4). Investment knowledge was assessed by the following item "How would you rate your level of

knowledge concerning mutual funds? (1 = not at all knowledgeable, 7 = very knowledgeable).”

RESULTS

Hypotheses Tests

Results for the effects of the presentation of graphical supplemental information, written-text supplemental information, and performance manipulations on investors’ responses are presented in Table 1. Cell means are presented in Table 2. As expected, multivariate effects of prior fund performance are significant (Wilks’ $\lambda = .82$, $F = 10.12$, $p < .0001$). The two-way interactions between performance and graphical supplemental information (Wilks’ $\lambda = .92$, $F = 7.25$, $p < .0001$) and between performance and written-text supplemental information (Wilks’ $\lambda = .96$, $F = 2.76$, $p < .05$) are significant.

Univariate analyses indicate that as expected, the past performance of a mutual fund has a favorable influence on investors’ attitudes toward the specific fund ($F = 30.60$, $p < .0001$), investment intentions ($F = 27.60$, $p < .0001$), expectations of future performance ($F = 31.12$, $p < .0001$), and perceived risk ($F = 42.91$, $p < .0001$). Consumer attitudes were

TABLE 1
Effects of the Graphical Information, Supplemental Written Information, and Fund Performance Investors’ Attitudes, Intentions, and Perceptions

| Independent Variables | Dependent Variable Univariate <i>F</i> Values | | | |
|---|---|-----------------------|----------------------|----------------|
| | Attitude | Investment Intentions | Expected Performance | Perceived Risk |
| Main effects | | | | |
| Graphical supplemental information (GI) | <1 | <1 | <1 | <1 |
| Written-text supplemental information (SI) | <1 | <1 | <1 | 1.56 |
| Past fund performance (PP) | 30.60* | 27.60* | 31.12* | 42.91* |
| Prior knowledge (PK) | 16.54* | 18.01* | 15.79* | 25.81* |
| Interaction effects (only two-way interactions are included) | | | | |
| PP × GI | 15.10* | 13.70* | 42.05* | 46.39* |
| PP × SI | 7.18* | 3.05** | <1 | <1 |
| GI × SI | <1 | 1.12 | 5.63*** | 1.24 |
| GI × PK | <1 | <1 | 5.52** | 7.47** |
| SI × PK | 2.34 | 4.31*** | 2.25 | 5.01*** |
| PP × PK | <1 | <1 | <1 | <1 |

* $p < .01$, ** $p < .05$, *** $p < .10$.

TABLE 2
Cell Means across Independent Measures

| Independent Variables | Attitude | | Purchase Intention | | Expectations for Future Performance | | Perceived Risk | |
|--|--------------------|------|--------------------|------|-------------------------------------|------|--------------------|------|
| | Investor Knowledge | | Investor Knowledge | | Investor Knowledge | | Investor Knowledge | |
| | High | Low | High | Low | High | Low | High | Low |
| Graphical information provided | | | | | | | | |
| <i>Written-text information provided</i> | | | | | | | | |
| Below-average firm performance | 4.97 | 5.08 | 5.13 | 5.12 | 3.23 | 2.40 | 3.49 | 2.96 |
| Above-average firm performance | 2.75 | 3.68 | 3.08 | 4.07 | 4.96 | 4.09 | 4.86 | 4.13 |
| <i>Written-text information not provided</i> | | | | | | | | |
| Below-average firm performance | 4.50 | 4.44 | 4.58 | 4.79 | 3.20 | 3.43 | 3.50 | 3.54 |
| Above-average firm performance | 2.93 | 3.75 | 3.17 | 3.86 | 5.39 | 4.27 | 4.75 | 4.21 |
| Graphical information not provided | | | | | | | | |
| <i>Written-text information provided</i> | | | | | | | | |
| Below-average firm performance | 4.17 | 5.11 | 4.21 | 5.24 | 4.19 | 3.55 | 4.20 | 3.62 |
| Above-average firm performance | 3.06 | 3.78 | 3.35 | 4.15 | 4.42 | 4.03 | 4.40 | 3.86 |
| <i>Written-text information not provided</i> | | | | | | | | |
| Below-average firm performance | 3.77 | 3.93 | 4.35 | 4.10 | 3.90 | 3.78 | 3.92 | 3.76 |
| Above-average firm performance | 3.61 | 4.54 | 4.76 | 4.58 | 3.96 | 3.55 | 3.93 | 3.77 |

more positive, investment intentions and expectations of future performance were higher, and perceived risk was lower when past performance was stronger (more positive). These findings provide support for the premise that past performance influences consumers' attitudes and perceptions.

As expected, prior fund performance and the provision of graphical supplemental information interacted to influence consumer attitudes toward the specific fund ($F = 15.10, p < .0001$), investment intentions ($F = 13.70, p < .0001$), expectations regarding future performance ($F = 42.05, p < .0001$), and perceived risk ($F = 46.39, p < .0001$). In the absence of graphical information, fund performance had little effect on investors' responses. However, when graphical supplemental information was presented, consumer attitudes (mean = 3.15 vs. mean = 4.74) were more favorable, investment intentions (mean = 3.41 vs. mean = 4.87) and expectations of future performance (mean = 4.92 vs. mean = 3.05) were higher, and perceived risk (mean = 4.73 vs. mean = 3.33) was lower when prior

performance was above average as compared to when it was below average. H1a is therefore confirmed.

Prior fund performance and the provision of written-text supplemental information interacted to influence consumer attitudes ($F = 7.18, p < .01$) and investment intentions ($F = 3.05, p < .05$, one tailed) as predicted in H1b. When written-text supplemental information was presented, consumer attitudes toward the fund (mean = 3.27 vs. mean = 4.64) were more favorable and investment intentions (mean = 3.60 vs. mean = 4.71) were higher. Contrary to expectations, neither expected performance ($F < 1$) nor perceived risk ($F < 1$) was influenced by this interaction. H1b is therefore only partially supported.

As predicted in H2, prior investment knowledge had a positive effect on investors' attitudes toward the fund ($F = 16.54, p < .0001$), investment intentions ($F = 18.01, p < .0001$), and expectations regarding future performance ($F = 15.79, p < .0001$). Investors with higher levels of knowledge had more positive (negative) attitudes, more positive (negative) investment intentions, and more positive (negative) expectations of future performance toward the superior (inferior) fund. Knowledge also significantly influenced perceived risk levels ($F = 25.81, p < .0001$). Investors with a higher level of knowledge perceived the superior (inferior) fund to be less (more) risky than less-knowledgeable investors. As expected in H3, investors' prior investment knowledge interacted with the provision of graphical supplemental information to influence investors' expectations regarding future performance ($F = 5.52, p < .05$) and perceived risk ($F = 7.47, p < .05$). When knowledge was high, the provision of graphical information had no effect on either expected performance or perceived risk. However, for low-knowledge respondents, the provision of graphical information had a positive effect on expected performance and decreased perceived risk levels.

H4 posits that perceived risk mediates the influence that consumers' attitudes toward the product class (mutual funds) have on both their attitude toward a specific fund and their investment intentions. In order to test for mediation, we followed the guidelines proposed by Baron and Kenny (1986). The results of a multiple regression confirm this finding for both attitude toward the specific fund ($B = .54, t = 3.6, p < .0001$) and investment intention ($B = .47, t = 3.35, p < .001$). Next, the independent variable (attitude toward the product class) must influence the potential mediator, perceived risk. As shown above, and confirmed by a regression analysis ($B = -.37, t = -4.02, p < .0001$), this was also the case. The final step in the process involves comparing the influence of the independent variable on the dependent measure when the mediator is included in the model

versus when it is not. Mediation occurs if the effects of the independent variable are substantially attenuated when the mediator is included in the model; total mediation occurs if the effect of the independent variable is eliminated. Multiple regression analyses tested the effect of attitude toward the product class on attitude toward the specific fund and investment intentions. As predicted in H4, when perceived risk was included in the model, the effects of attitude toward the product class on both attitude toward the specific fund ($B = .17, t = 1.45, p > .05$) and investment intention ($B = .12, t = 1.11, p < .05$) are no longer significant.

The provision of written-text supplemental information and graphical supplemental information, as well as investment attitude, was expected to have a positive effect on the perceived quantity of information provided about the mutual fund. As expected, written-text supplemental information had a positive effect on the perceived quantity of information ($F = 17.4, p < .001$). Contrary to expectations, the graphical presentation of performance data did not influence perceived information quantity ($F = 1.04, p > .05$); thus, H5 was partially confirmed. In addition, there was not a positive relationship between attitude toward the product class and the perceived quantity of information ($F = 1.74, p > .05$). H6 was therefore not confirmed.

DISCUSSION

The flow of information into markets can be the result of competitive strategies or consumer activism (Moorman 1998) and has been shown to increase the competitive efficiency of a given market (Salop 1977). With more Americans depending on mutual fund investments to cover their retirement needs, improved conveyance of information regarding fund attributes is paramount. Evidence suggests that a “do-it-yourself” approach to 401(k) plans currently is not the most-effective option for investors saving for retirement. For example, Alicia Munnell, an economist at Boston College that has studied this issue, stated that the do-it-yourself attributes of such plans “are not working” and that these 401(k) plans “are simply too complicated for people to handle. It’s not that people are dumb. It’s just that ... becoming a financial expert is low on their priority list” (Lauricella 2004). Thaler and Sunstein (2001), in their discussion of “libertarian paternalism,” cite the inconsistencies among investors regarding retirement behavior. Other research shows greater savings success when a default “opt-in” option is used by the employers versus notifying and even educating employees about the benefits or early retirement investing (Choi et al. 2001).

Applying mutual fund information to a cost–benefit framework is an appropriate method to examine the effectiveness of information presentation formats. There are two strategies for increasing information use associated with a cost–benefit view (Russo et al. 1986). The first is to increase the perceived benefits of using information and is consistent with educational and social marketing endeavors. The second strategy is to reduce the costs associated with increased information processing efforts. This research provides limited support for presenting summary information to investors in order to impact product-related attitudes and behaviors. The provision of summary information in both a graphical and a written-text format interacted with fund performance to impact several of the dependent measures. The further testing of alternative information formats is an appropriate next step since a specific type of graphical format emphasizing comparative information was used in the present study. Similar types of pictorial presentations have been used to convey information to investors. For example, *Consumer Reports* magazine uses comparative information to grade product performance. Investors should be familiar with and responsive to comparative graphical information.

This research also supports prior work investigating the effects of prior knowledge on product evaluations. Subjects with higher knowledge about the product class had stronger attitudes toward the specific mutual fund information shown, investment intentions, expectations of future performance, and levels of perceived risk associated with investing in their particular fund. This finding has important implications for fund companies, regulators, and educational agencies. For example, segmenting investors on the basis of prior knowledge will enable both these parties to present the types of information that specific investors will find most useful.

Other results of note include the impact of prior fund performance on subsequent fund perceptions and evaluations. Prior fund performance significantly affected all the dependent measures except for the quantity of perceived information. The implications of this result may be of interest to policy makers. The SEC currently mandates a fair disclosure policy in promotional materials (e.g., “Past performance is no guarantee of future returns”). Subjects in this study seem to gravitate toward prior fund performance in a significant way. Additional research is warranted to explore this effect and whether subjects are exhibiting a pre-existing bias (Johnson and Tellis 2005).

Scholars have debated the goals of information provision programs. A hierarchy-of-effects model has been proposed as a solution to this dilemma (Preston 1982; Russo et al. 1986). Investors should first be made

aware of new information. Next, that information then becomes salient and results in shifts in product perceptions and behavioral intentions. Our research illustrates that an effort reduction strategy can work in the mutual fund arena, resulting in an impact on attitudinal measures as well as performance and risk components. As Sirri and Tufano (1998) have observed, mutual fund companies that market more aggressively tend to garner more net inflows to their funds. Thus, profit-maximizing mutual fund companies that offer funds with relatively low expense ratios and/or higher returns could use a modified summary disclosure as part of a competitive strategy that differentiates them from other firms. Our results show that investors will respond positively to summary data presented on a single page. Prior research has shown that improved information presentation formats reduce search costs, potentially increasing the likelihood of optimal choice (thereby reducing the likelihood of regret or postpurchase dissatisfaction) and reducing the burdens of information load on investors (Payne 1985). This research shows that the presentation of summary information impacts investors' fund evaluations and risk perceptions.

As noted above, the need for improved financial education programs targeting American investors has been the focus of scholars and regulators alike (Fox, Bartholomae, and Lee 2005). For example, investor activists have called for the inclusion of education programs that focus and frame the summary disclosure solely around fees and expense information (Woodward 2004b). Our results show that while expense information should be a key component of the summary disclosure, concise information on other salient fund characteristics should also be included as they impact several key dependent measures in our study. As noted in the introduction, both the SEC and the Investment Company Institute are championing both summary disclosure in plain English and the use of Web-based technology enhancements to the disclosure of mutual fund information, which can enable investors to compare all types of information between different mutual funds (e.g., risks, returns, expenses, and tax implications). This is a step in the right direction although it is not clear what type of format will result in a more-concise summary disclosure that highlights the most-salient fund characteristics for the investor. Most importantly, from a consumer welfare perspective, our results suggest that investors leverage past performance disproportionately in their fund evaluations. This suggests that the SEC-mandated disclosure: "Past performance is no guarantee of future returns," should be wrapped into a broader, full-information effort that can adequately factor into investors' fund evaluations.

APPENDIX 1

Overview of Positively Performing Fund Condition

| Annual Total Returns | One Year | Three Years | Five Years |
|--|----------|-------------|------------|
| Fund performance | 29.9 | 3.1 | 7.6 |
| S&P 500 performance | 28.6 | -4.7 | -0.5 |
| Annual Performance Data | 2003 | 2002 | 2001 |
| Total return (%) | 29.9 | -9.4 | -6.9 |
| Net dividend income distribution (\$) | 0.35 | 0.28 | 0.30 |
| Capital gain distributions (\$) | 0.00 | 0.00 | 0.00 |
| Net asset value (\$) | 39.54 | 30.70 | 34.20 |
| Expense ratio (%) | 0.46 | 0.45 | 0.40 |
| Net dividend yield (%) | 0.90 | 0.91 | 0.88 |
| Portfolio turnover (%) | 88 | 70 | 41 |
| Total assets (billions of \$) | 5.5 | 4.5 | 6.9 |
| Annual Fund Operating Expenses | | | |
| Management fee (%) | | | 0.25 |
| Distribution and/or service (12b-1) fees | | | None |
| Other expenses (%) | | | 0.21 |
| Total annual fund operating expenses (%) | | | 0.46 |

APPENDIX 2

Overview of Average-Performing Fund Condition

| Annual Total Returns | One Year | Three Years | Five Years |
|--|----------|-------------|------------|
| Fund performance | 28.6 | -1.5 | 1.3 |
| S&P 500 performance | 28.6 | -4.7 | -0.5 |
| Annual Performance Data | 2003 | 2002 | 2001 |
| Total return (%) | 28.6 | -15.2 | -12.3 |
| Net dividend income distribution (\$) | 0.31 | 0.24 | 0.28 |
| Capital gain distributions (\$) | 0.00 | 0.00 | 0.00 |
| Net asset value (\$) | 34.22 | 26.85 | 31.95 |
| Expense ratio (%) | 0.61 | 0.58 | 0.57 |
| Net dividend yield (%) | 0.90 | 0.91 | 0.88 |
| Portfolio turnover (%) | 88 | 70 | 41 |
| Total assets (billions of \$) | 5.5 | 4.5 | 6.9 |
| Annual Fund Operating Expenses | | | |
| Management fee (%) | | | 0.40 |
| Distribution and/or service (12b-1) fees | | | None |
| Other expenses (%) | | | 0.21 |
| Total annual fund operating expenses (%) | | | 0.61 |

APPENDIX 3

Overview of Poor-Performing Fund Condition

| Annual Total Returns | One Year | Three Years | Five Years |
|--|----------|-------------|------------|
| Fund performance | 19.6 | -6.6 | -1.4 |
| S&P 500 performance | 28.6 | -4.7 | -0.5 |
| Annual Performance Data | 2003 | 2002 | 2001 |
| Total return (%) | 19.6 | -15.3 | -19.7 |
| Net dividend income distribution (\$) | 0.84 | 0.72 | 0.83 |
| Capital gain distributions (\$) | 0.00 | 0.00 | 0.00 |
| Net asset value (\$) | 93.74 | 79.09 | 94.22 |
| Expense ratio (%) | 0.76 | 0.88 | 0.88 |
| Net dividend yield (%) | 0.90 | 0.91 | 0.88 |
| Portfolio turnover (%) | 88 | 70 | 41 |
| Total assets (billions of \$) | 5.5 | 4.5 | 6.9 |
| Annual Fund Operating Expenses | | | |
| Management fee (%) | | | 0.55 |
| Distribution and/or service (12b-1) fees | | | None |
| Other expenses (%) | | | 0.21 |
| Total annual fund operating expenses (%) | | | 0.76 |

APPENDIX 4

Attitude toward the Product Class (Mutual Funds)

1. Overall, the thought of investing in a fund causes me to be concerned with experiencing some kind of loss.
2. All things considered, I think I would be making a mistake if I invested in a mutual fund.
3. When all is said and done, I really feel that investing in a mutual fund poses problems for me that I just don't need.
4. My investing in a mutual fund would be a bad way to invest my money.
5. If I invested in a mutual fund, I would be concerned that the financial investment I would make would *not* be wise.
6. As I consider investing in a mutual fund, I worry about whether the product will really perform as well as it is supposed to.
7. If I were to invest in a mutual fund, I am concerned that the mutual fund will not provide the level of performance that I would be expecting.

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