

WORTHLESS WARNINGS? TESTING THE EFFECTIVENESS OF DISCLAIMERS IN MUTUAL FUND ADVERTISEMENTS

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Approximately \$10 trillion is invested in mutual funds in the United States. Mutual fund investors flock to funds with high past returns, despite there being little, if any, relationship between high past returns and high future returns. Because fund management fees are based on the amount of assets invested in their funds, however, fund companies regularly advertise the returns of their high-performing funds. The SEC requires these advertisements to contain a disclaimer warning that past returns don't guarantee future returns and that investors could lose money in the funds. This article presents the results of an experiment that finds that this SEC-mandated disclaimer is completely ineffective. The disclaimer neither reduces investors' propensity to invest in advertised funds nor diminishes their expectations regarding the funds' future returns. The experiment also finds, however, that a stronger disclaimer – one that informs investors that high fund returns generally don't persist – would be much more effective.

Flip through any personal finance magazine and you'll see mutual fund performance advertisements. They declare that a particular mutual fund has achieved high returns – much more than those of comparable funds. Mutual funds use performance advertisements because they are effective. Indeed, past returns may be the primary factor that investors consider in choosing among funds. However, investors would be better off ignoring these advertisements. A large body of studies has found little evidence that high past returns predict high future returns. In fact, advertised mutual funds even tend to underperform the market after being advertised.

The Securities and Exchange Commission (“SEC”), the primary regulator of mutual funds, has promulgated rules to prevent investors from being misled by performance advertisements. Detailed regulations specify how

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past returns in advertisements must be calculated and presented. These regulations are intended to ensure that the advertised returns fairly reflect the fund's true historical returns and that fund companies don't mislead investors by selectively advertising only particular periods' returns. In addition, this standardization facilitates investor comparison of different mutual funds.

However, performance advertisements also can be misleading in another way: they can imply that high past returns are likely to continue in the future. To prevent this, the SEC requires that performance advertisements contain a disclaimer that includes a warning that "past performance does not guarantee future results" and that investors could lose money in the fund. This article presents the results of our experiment that tests whether this disclaimer is effective in discouraging investors from relying upon past performance in choosing a mutual fund.

Participants in the experiment were shown a version of a performance advertisement for a mutual fund that had outperformed its peers in the past and then were asked about their propensity to invest in the fund and about their expectations regarding the fund's future returns. Versions of the advertisement differed in the strength and prominence of the warning that past high returns might not continue. We found that the disclaimer currently required by the SEC has no effect. Participants viewing the advertisement with that disclaimer were as likely to invest in the fund, and had the same expectations regarding the fund's future returns, as did participants viewing the advertisement with no disclaimer whatsoever.

We argue that the current disclaimer fails because it is far too weak. It only conveys that high past returns don't *guarantee* high future returns and that investors in the fund could lose money, things that almost all investors already know. It fails to convey what investors really need to understand: high past returns are a poor predictor of high future returns. Indeed, we also found that a stronger disclaimer – one that warns that high past returns usually don't persist – was much more effective. In contrast, merely making the current "guarantee" disclaimer more prominent had little to no effect.

This article addresses an important regulatory challenge. It is the first study of the effectiveness of the SEC's regulation of fund performance advertisements, and it suggests a better alternative. Section I presents background information about the size and scope of the mutual fund market, which provides a primary vehicle for Americans' retirement and other savings. Section II, drawing on studies from the finance literature, describes how investors flock to funds with strong past performance, despite high past returns not predicting high future returns. It also discusses the prevalence and effectiveness of performance advertisements and how the SEC regulates these advertisements. Section III presents the experiment we used to test the effectiveness of the advertisement disclaimer required by the SEC and the effectiveness of alternative disclaimers. Section IV discusses the

experiment's findings and their implications for the effective regulation of performance advertisements.

I. THE MUTUAL FUND MARKET

A mutual fund pools multiple investors' money into a single investment portfolio managed by a fund management company.¹ Mutual fund shareholders do not own fund assets directly, but instead own a piece of the mutual fund.² They are entitled to their share of the returns of the assets owned by the fund.³ Although the SEC is the primary regulator of the mutual fund industry, no government agency guarantees or insures shareholders' fund investments.⁴

The mutual fund market is extremely large. As of the end of 2008, U.S. mutual funds held almost \$10 trillion in assets,⁵ including 24% of all outstanding equity of U.S. public companies.⁶ Investors have a very large number of funds to choose from—8889 as of the end of 2008.⁷ Some large fund families, such as Fidelity Investments and the Vanguard Group, have over a hundred funds.⁸ Funds vary considerably, including in the types of financial assets they hold, their investment objectives and strategies, and their fees and expenses.⁹

Ownership of mutual funds is widespread. Approximately 45% of American households own mutual funds, far more than own individual securities, such as stocks and bonds.¹⁰ Most households that own mutual funds have only moderate income and wealth. The median household income of mutual fund investors is \$80,000¹¹ Also, 63% of households that own mutual funds have incomes of less than \$100,000, and 22% have incomes

¹ Securities and Exchange Commission, *Invest Wisely: An Introduction to Mutual Funds*, <http://sec.gov/investor/pubs/inwsmf.htm> (last visited July 9, 2009).

² *Id.*

³ *Id.*

⁴ *Id.*

⁵ INVESTMENT COMPANY INSTITUTE, 2009 INVESTMENT COMPANY FACT BOOK 9 fig.1.1 (2009), available at http://www.icifactbook.org/pdf/2009_factbook.pdf [hereinafter 2009 FACT BOOK].

⁶ *Id.* at 11 fig.1.4.

⁷ *Id.* at 15 & fig.1.8.

⁸ All Vanguard Funds, <https://personal.vanguard.com/us/funds/vanguard/all?sort=name&sortorder=asc> (last visited July 9, 2009) (listing of current Vanguard funds); All Fidelity Funds Daily Pricing, http://personal.fidelity.com/products/funds/framesets/daily_prices_frame.shtml?refpr=zffdfp03 (last visited July 9, 2009) (listing current Fidelity funds).

⁹ Securities and Exchange Commission, *Invest Wisely: An Introduction to Mutual Funds*, <http://sec.gov/investor/pubs/inwsmf.htm> (last visited July 9, 2009).

¹⁰ INVESTMENT COMPANY INSTITUTE, ICI RESEARCH FUNDAMENTALS: OWNERSHIP OF MUTUAL FUNDS, SHAREHOLDER SENTIMENT, AND USE OF THE INTERNET, 2008, 3, fig. 1 (Dec. 2008), <http://www.ici.org/statements/res/fm-v17n6.pdf>.

¹¹ INVESTMENT COMPANY INSTITUTE, PROFILE OF MUTUAL FUND SHAREHOLDERS, 2008 6 fig.1.3 (Winter 2009), http://www.ici.org/pdf/rpt_profile09.pdf.

below \$50,000.¹² In addition, fund-owning households have median total financial assets of only \$200,000 and a median of \$100,000 invested in mutual funds.¹³

Mutual fund ownership has become so widespread largely because mutual funds are a primary way that Americans save for retirement. Defined-contribution retirement plans and Individual Retirement Accounts often hold mutual funds, and the rapid growth of these plans and accounts have increased mutual funds' total share of retirement assets from 5% at the end of 1990 to 24% in September 2008.¹⁴ Mutual funds now hold almost a quarter of America's retirement savings.

Consistent with the long-term investment horizon of many fund investors, 40% of mutual fund holdings are in equity funds, with almost all of the rest in money market funds (37%) and bond funds (18%).¹⁵ Although equities have greater risk in the short run than do bonds and money market securities, equities tend to have higher long-run returns.¹⁶

In summary, our nation relies on mutual funds. Mutual funds are widely owned and have become a significant part of our savings and a key component of our retirement system. Thus, it is important that investors make wise mutual fund choices and that they are not misled by fund advertisements.

II. RETURNS-CHASING INVESTORS AND PERFORMANCE ADVERTISEMENTS

As discussed in the last section, mutual funds have become a very important vehicle for investment and retirement savings in the United States. Because of their importance, they have attracted much attention from scholars. As a result, an extensive body of research exists examining how investors choose among the vast number of available funds.

Unfortunately, these studies paint an unflattering portrait of the typical mutual fund investor. This research finds that fund investors generally are uninformed and financial unsophisticated. For example, most investors are unaware of the investment objectives, composition, fees and expenses, and

¹² *Id.*

¹³ 2009 FACT BOOK, *supra* note 5, at 73 fig.6.2.

¹⁴ INVESTMENT COMPANY INSTITUTE, RESEARCH FUNDAMENTALS: THE U.S. RETIREMENT MARKET, THIRD QUARTER 2008, at 11-13 fig.A1-A3 (Feb. 2009), http://www.ici.org/stats/res/retmrkt_update.pdf. Retirement assets are also in annuities, government pension plans, and private defined benefit plans (i.e., traditional private pension plans). *Id.* at 2 fig.1.

¹⁵ ICI STATISTICS & RESEARCH, TRENDS IN MUTUAL FUND INVESTING (May 2009), http://www.ici.org/highlights/trends_05_09.

¹⁶ JEREMY J. SIEGEL, STOCKS FOR THE LONG RUN 12-18, 24-27 (4th ed. 2008).

risks of their funds.¹⁷ Yet although investors pay little attention to a fund’s objectives, risk, and costs, they pay great attention to a fund’s historical returns. Studies find that this may be the most important factor to the typical fund investor.

A. Investors chase high past returns

Surveys of investors uniformly identify the importance of a fund’s past returns. Capon, Fitzsimons, and Rice’s survey of households that invest in mutual funds found that a fund’s “investment performance track record” was the most important factor in investors’ choice of funds.¹⁸ Also, a survey sponsored by the Investment Company Institute – the trade association of the mutual fund industry – found that 69% of fund investors reviewed a fund’s “historical performance” before investing.¹⁹

An experiment involving investors had similar findings. Wilcox asked fund investors to choose among hypothetical equity mutual funds differing in up to six characteristics: (1) the fund’s return during previous year, (2) the fund’s average annual return during the previous ten years, (3) the fund company’s name, (4) the fund’s load, (5) the fund’s annual management fee, and (6) the fund’s beta.²⁰ He found that a fund’s returns over the past ten years and over the past year were the two most important factors to investors.²¹

Studies of investors’ actual, real-world behavior confirm that investors flock to mutual funds with the highest past returns. These studies find that an equity fund’s past return has a strong positive effect on fund flow – the aggregate amount that investors put into or withdraw from the fund during a particular period.²² In addition, this effect is strongest for funds with the highest past returns, indicating that investors especially chase the highest-performing funds.²³

¹⁷ For a survey of these studies see Alan R. Palmiter & Ahmed E. Taha, *Mutual Fund Investors: Divergent Profiles*, 2008 COLUM. BUS. L. REV. 934, 974-94 (2008).

¹⁸ Noel Capon, Gavan J. Fitzsimons, & Russ Alan Prince, *An Individual Level Analysis of the Mutual Fund Investment Decision*, 10 J. FIN. SERVICES RES. 59, 66 (1996).

¹⁹ INVESTMENT COMPANY INSTITUTE, UNDERSTANDING INVESTOR PREFERENCES FOR MUTUAL FUND INFORMATION 1 (Aug. 2006), http://ici.org/pdf/rpt_06_inv_prefs_full.pdf.

²⁰ Ronald T. Wilcox, *Bargain Hunting or Star Gazing? Investors’ Preferences for Stock Mutual Funds*, 76 J. BUS. 645 (2003). Beta is a measure of a fund’s risk.

²¹ *Id.* at 650.

²² Diane Del Guercio & Paula A. Tkac, *The Determinants of the Flow of Funds of Managed Portfolios: Mutual Funds v. Pension Funds*, 37 J. FIN. & QUANTITATIVE ANALYSIS 523, 525 (2002); Erik R. Sirri & Peter Tufano, *Costly Search and Mutual Fund Flows*, 53 J. FIN. 1589, 1599 (1998).

²³ Del Guercio & Tkac, *supra* note 22, at 525 ; Sirri & Tufano, *supra* note 22, at 1599 (1998). See also Travis Sapp & Ashish Tiwari, *Does Stock Return Momentum Explain the “Smart Money” Effect?*, 59 J. FIN. 2605, 2607 (2004) (finding that fund flows into U.S. equity mutual funds “effectively demonstrate[] that fund investors appear to be chasing recent large returns”).

B. Past returns are poor predictors of future returns

Although investors flock to funds with the highest past returns, there is little reason for them to do so. Extensive studies have found only “weak and controversial evidence that past performance has much, if any, predictive ability for future returns.”²⁴ In other words, little evidence of returns persistence exists; top performing funds generally do not continue to significantly outperform other funds.²⁵

Furthermore, even to the extent some persistence exists, it may not be meaningful to investors picking among mutual funds because of the transaction costs, such as loads and capital gains taxes, that investors would incur in chasing high performers.²⁶ Indeed, a recent survey of studies on returns persistence found some evidence of small performance persistence by the highest performing funds, but concluded that “it seems likely that such costs [e.g., loads, rebalancing costs and taxes] would outweigh” the extra returns that investors could gain by chasing this performance persistence.²⁷

Why are high past returns a poor predictor of high future returns? A primary reason is that high returns are largely just a matter of good luck, and luck generally does not continue. The role of luck in mutual fund returns should not be underestimated. Because thousands of equity mutual funds exist, a very large number of funds would outperform market indexes even if all fund managers were picking their portfolios randomly.

Two recent studies have quantified the role of luck. Barras, Scaillet, and Wermers examined 2,076 actively managed domestic equity funds’ lifetime performances and found that only 2.2% of the funds had statistically significant, long-term, abnormal positive returns after expenses.²⁸ However, when luck was accounted for – i.e. the fact that out of 2,076 funds, many would outperform solely because of luck – only 0.6% of funds actually exhibited skill in their long-term performance.²⁹ Also, this result was not even statistically significant, meaning that there is not persuasive evidence

²⁴ Wilcox, *supra* note 20, at 651.

²⁵ Jonathan B. Berk & Richard C. Green, *Mutual Fund Flows and Performance in Rational Markets*, 112 J. POL. ECON. 1269, 1270 & n.1 (2004) (“The relative performance of mutual fund managers appears to be largely unpredictable from past relative performance. . . . While some controversial evidence of persistence [of mutual fund returns] does exist. . . . it is concentrated in low-liquidity sectors or at shorter horizons.”).

²⁶ Nicolas P.B. Bollen & Jeffrey A. Busse, *Short-Term Persistence in Mutual Fund Performance*, 18 REV. FIN. STUD. 569, 587-88 (2004). Many mutual funds charge front-end or back-end (deferred) loads that investors must pay when they buy or sell fund shares, respectively. Also, to discourage short-term trading, many mutual funds impose fees on investors who sell shares soon after buying them. In addition, when an investor sells mutual fund shares for a gain, the investor must pay capital gains taxes. Investors who sell fund shares less than one year after buying them pay a higher capital gains tax rate than do investors who hold the shares for more than one year.

²⁷ Keith Cuthbertson, Dirk Nitzsche & Niall O’Sullivan, *Mutual Fund Performance* 69 (Dec. 12, 2006) (unpublished manuscript, *available at* <http://ssrn.com/abstract=955807>).

²⁸ Laurent Barras, O. Scaillet, Russ R. Wermers, *False Discoveries in Mutual Fund Performance: Measuring Luck in Estimated Alphas* 16, 35 tbl.II. (May 1, 2008) (unpublished manuscript, *available at* <http://ssrn.com/abstract=869748>).

²⁹ *Id.* at 35 tbl.II.

that *any* funds are skillful enough to outperform their benchmarks in the long-run.³⁰

In addition, Fama and French's study of domestic equity mutual funds' returns from 1984 to 2006 reached a similar, if not stronger, conclusion.³¹ They found that luck could easily explain high-returning funds' performance and concluded that "there is no evidence of fund managers with skill sufficient to cover costs."³²

Another reason that high returns often don't continue might be that funds with high returns attract investment and thus often grow significantly. Their fund managers might have difficulty continuing to produce superior returns because they have fewer investment options. For example, a fund can easily invest a small amount of money in a stock with a low market capitalization. However, investing a much larger sum in the same stock is difficult – there may not be enough shares available for purchase and a large purchase of a thinly-traded stock would have to be made at a much higher price than would a small purchase.³³ Indeed, a study by Chen, Hong, Huang, and Kubik found a significant, negative relationship between fund size and returns for funds that invest in small-capitalization stocks.³⁴

Regardless of the reasons, high performing mutual funds do not continue to outperform their peers. Despite this, investors flock to funds that have performed very well. Fund companies exploit and encourage this by advertising high-performing funds.

C. Fund companies advertise strong past performance

Because investors chase past returns, mutual fund companies have a great incentive to advertise strong past performance. Management fees are based on the amount of assets in a fund, so advertisements that present a fund's high past returns ("performance advertisements") can increase management fees by increasing the amount that is invested in the fund. This section discusses the prevalence and effectiveness of performance advertisements and how the SEC regulates them.

³⁰ *Id.* at 16.

³¹ Eugene F. Fama & Kenneth R. French, Luck versus Skill in the Cross Section of Mutual Fund Alpha Estimates, (Mar. 9, 2009) (unpublished manuscript, *available at* <http://ssrn.com/abstract=1356021>).

³² *Id.* at 22.

³³ Joseph Chen, Harrison Hong, Ming Huang, & Jeffrey D. Kubik, *Does Fund Size Erode Mutual Fund Performance? The Role of Liquidity and Organization*, 94 AMER. ECON. REV. 1276, 1277 (2004).

³⁴ *Id.* In addition, Barras, Scaillet, and Wermers found that a small, yet statistically significant, percentage (2.4%) of domestic equity funds exhibit short-run investing skill after expenses, yet only a statistically insignificant percentage (0.6%) exhibit skill in the long run. Barras et al., *supra* note 28, at 18-19, 35 tbl.II, 36 tbl.III. They note that this difference might be explained by investors flocking to funds that outperformed in the short-run, forcing their fund managers to invest much more than before, and thus being unable to continue to outperform in the long run. *Id.* at 2.

1. Prevalence and effectiveness of performance advertisements

To attract investment, mutual fund companies often advertise strong past performance. Often, more than half of mutual fund advertisements appearing in personal finance periodicals, such as *Money*, *BusinessWeek*, and *Barron's*, are performance advertisements.³⁵

Unsurprisingly, performance advertisements are more prevalent when the stock market has been rising, because better returns can be advertised.³⁶ In addition, mutual fund companies are especially likely to advertise particular funds that have performed well. For example, Jain and Wu found that equity funds advertised in *Barron's* or *Money* magazine outperformed non-advertised funds with the same investment objective by an average of approximately 6% over the twelve months prior to the advertisements.³⁷

Fund advertising is effective. Investors in Capon et al.'s survey stated that advertising was their second most important source of information about funds.³⁸ Also, Jain and Wu found that advertised funds receive approximately 20% greater flow than do similar funds that do not advertise.³⁹ In addition, funds that are advertised more often received even more flow.⁴⁰

³⁵ Sendhil Mullainathan & Andrei Shleifer, Persuasion in Finance 9-10 (Dec. 2005) (unpublished manuscript, available at <http://ssrn.com/abstract=864686>) (finding that funds' past returns were mentioned, on average, in 62% of equity mutual fund advertisements appearing in *Money*, and in 59% of equity mutual fund advertisements appearing in *BusinessWeek*, over a nine and ten-year period, respectively); Bruce A. Huhmann & Nalinaksha Bhattacharyya, *Does Mutual Fund Advertising Provide Necessary Investment Information?*, 23 INT'L. J. BANK MKTG. 296, 303 tbl.1 (2005) (finding almost 42% of mutual fund advertisements in *Barron's* and *Money* magazine over a two-year period mentioned a fund's high or increasing returns, and an additional 26% of the advertisements explicitly discussed a fund's risk-adjusted returns).

³⁶ Mullainathan & Shleifer, *supra* note 35, at 9-10 (Dec. 2005) (unpublished manuscript, available at <http://ssrn.com/abstract=864686>) (finding a correlation of over 0.7 between one-quarter-lagged S&P 500 returns and the percentage of equity fund advertisements in *Money* and *BusinessWeek* that mention past returns); DAVID F. SWENSEN, UNCONVENTIONAL SUCCESS: A FUNDAMENTAL APPROACH TO PERSONAL INVESTMENT 168 tbl.5.4 (2005) (finding that total pages of performance advertisements in the first quarter's *Wall Street Journal's Mutual Funds Quarterly Review* dropped by approximately 83% from the strong bull market in 1999 to the bear market in 2003).

³⁷ Prem C. Jain & Joanna Shuang Wu, *Truth in Mutual Fund Advertising: Evidence on Future Performance and Fund Flows*, 55 J. FIN. 937, 943 (2000). See also, Jonathan J. Koehler & Molly Mercer, Selection Neglect in Mutual Fund Advertisements 9 (May 29, 2008) (unpublished manuscript, on file with the authors) (study of equity fund advertisements in *BusinessWeek* and *Fortune* finding that fund companies advertise their funds that have performed the best). But see Steven Gallaher, Ron Kaniel & Laura Starks, Madison Avenue Meets Wall Street: Mutual Fund Families, Competition and Advertising 29, 44 tbl.8 (Jan. 2006) (unpublished manuscript, available at <http://ssrn.com/abstract=879775>) (finding a relationship between the past returns of fund families and the amount of advertising only for small, low-performing fund families).

³⁸ Capon et al., *supra* note 18, at 66 tbl.1.

³⁹ Jain & Wu, *supra* note 37, at 957 (2000).

⁴⁰ *Id.* See also, Gallaher et al., *supra* note 37, at 31 (finding that the effect of advertising on flows into fund families is convex: "High relative levels of advertising are significantly related to

Although advertising benefits fund companies, there is little evidence that it also benefits investors. Indeed, Jain and Wu found that, after being advertised, funds actually tend to underperform the same benchmarks that they beat prior to being advertised.⁴¹ For example, in the one-year period after being advertised, the funds had an average four-factor alpha of less than -3% and underperformed the S&P 500 by almost 8%.⁴²

In summary, by advertising high-performing funds, mutual fund companies encourage and exploit investors' tendency to chase strong past performance. Despite high returns generally not persisting, advertising of these high past returns attracts investment, thus increasing the management fees earned by fund companies.

2. Regulation of performance advertisements

A number of federal securities statutes and rules govern mutual fund performance advertisements. Many of these provisions generally forbid the use of false or misleading material to sell securities, including mutual funds. They define material as misleading if it contains an untrue statement of a material fact or omits to state a material fact necessary to make a statement made, in the light of the circumstances of its use, not misleading.⁴³

Mutual fund advertising is also regulated by the National Association of Securities Dealers (NASD). The NASD has adopted rules governing its members – including mutual fund companies – and these rules have been approved by the SEC. These rules generally prohibit false or misleading public communications, including advertising.⁴⁴ Also, they define potentially

high fund flows at the family level, while variations of relative levels of advertising within the low advertising group do not have a significant impact on flows to the family.”).

⁴¹ Jain & Wu, *supra* note 37, at 956.

⁴² *Id.* at 946. The four-factor alpha is a risk-adjusted measure of a fund's extra return. A negative alpha means that the fund has underperformed its benchmark index.

⁴³ See, e.g., Section 17(a)(2) of the Securities Act of 1933 (prohibiting, in the offer or sale of any security by communication in interstate commerce, “obtain[ing] money or property by means of any untrue statement of a material fact or any omission to state a material fact necessary in order to make the statements made, in light of the circumstances under which they were made, not misleading. . . .”) 15 U.S.C. § 77q(a)(2) (2008); Rule 10b-5 under the Securities Exchange Act of 1934 (forbidding, in connection with the purchase or sale of any security, by any means or instrument of interstate commerce or by the mail, “mak[ing] any untrue statement of a material fact or . . . omit[ting] to state a material fact necessary to make the statements made, in the light of the circumstances under which they were made, not misleading. . . .”) 17 C.F.R. § 240.10b-5(b) (2008); Section 12(a)(2) of the Securities Act of 1933 (prohibiting the sale or offer of a security by means of a “prospectus” – including an advertisement – that includes an untrue statement of a material fact or omits to state a material fact necessary to make a statement not misleading) 15 U.S.C. § 77q(a) (2008); Section 34(b) of the Investment Company Act of 1940 (prohibiting, in advertisements and certain other documents, “any untrue statement of material fact” or the omission of “any fact necessary in order to prevent the statements made therein, in the light of the circumstances under which they were made, from being materially misleading.”)

⁴⁴ NASD Rule 2210(d)(1)(B) (“No member may make any false, exaggerated, unwarranted or misleading statement or claim in any communication with the public.”).

misleading public communications to include advertisements that contain an untrue statement of material fact⁴⁵ or omit a material fact.⁴⁶

Thus, many statutes and rules generally prohibit false or misleading fund advertising and define the misstatement or omission of a material fact as being misleading. However, a number of rules provide more specific guidance regarding when a performance advertisement is misleading. These provisions can be grouped into two categories: those that govern how performance data in advertisements must be calculated and presented, and those that restrict advertisements' suggesting that past returns predict future returns.

a. Regulation of the calculation and presentation of performance data

The SEC extensively regulates how past performance in mutual fund advertisements is calculated and presented. In particular, Rule 482 under the Securities Act of 1933 contains numerous provisions standardizing the calculation and presentation of past returns. For example, equity fund performance advertisements must report the fund's average annual total returns for the last one, five, and ten years.⁴⁷ These returns also must be computed using a methodology specified by the SEC.⁴⁸

The SEC also requires that performance advertisements be up-to-date. Total return data must be current to the end of the last month or the advertisement must direct investors to a website or a toll-free or collect phone number where such current total return data is available.⁴⁹ This requirement is intended to facilitate investor comparison of the performance of different funds⁵⁰ and to serve as a check on funds misleading investors by

⁴⁵ *Id.* ("No member may publish, circulate or distribute any public communication that the member knows or has reason to know contains any untrue statement of a material fact or is otherwise false or misleading.").

⁴⁶ NASD Rule 2210(d)(1)(A) ("No member may omit any material fact or qualification if the omission, in the light of the context of the material presented, would cause the communication[] [with the public] to be misleading.").

⁴⁷ 17 C.F.R. § 230.482(d)(3) (2008). If the fund's registration statement has been in effect for less than one, five or ten years, then the average annual total return since the registration period has been in effect must be reported instead. 17 C.F.R. § 230.482(d)(3) (2008).

⁴⁸ 17 C.F.R. § 230.482(d)(3)(i) (2008). Advertisements may also include – as supplementary information – any other performance measure that "reflects all elements of return" (such as aggregate, average, year-by-year or other types of total return calculations) for any time periods. 17 C.F.R. § 230.482(d)(5)(i) (2008).

⁴⁹ Amendments to Investment Company Advertising Rules, 68 F.R. 57,760, 57,763 (Oct. 6, 2003), codified at 17 C.F.R. § 230.482(g) (2008).

⁵⁰ *Id.* at 57,765 (Oct. 6, 2003).

“cherry picking” the date through which performance is calculated so as to advertise their most favorable performance.⁵¹

b. Regulation of implying that past returns predict future returns

Other rules limit performance advertisements’ ability to suggest that strong past performance predicts strong future performance. The SEC promulgated Rule 156 under the Securities Act of 1933 to provide guidance regarding what types of investment company sales literature could be materially misleading.⁵² Rule 156 emphasizes that the determination of whether particular sales literature is materially misleading has to be made on a case-by case basis.⁵³ However, it provides guidance by listing some types of statements that could be misleading,⁵⁴ including two relating to past performance. First, sales literature containing “[r]epresentations implying that future gain or income may be inferred from or predicted based on past investment performance,”⁵⁵ and second, sales literature containing “[p]ortrayals of past performance, made in a manner which would imply that gains or income realized in the past would be repeated in the future.”⁵⁶ Similarly, NASD Rule 2210(d)(1)(D) provides that “[c]ommunications with the public may not predict or project performance, imply that past performance will recur or make any exaggerated or unwarranted claim, opinion or forecast.”⁵⁷

The most specific provision, however, is again Rule 482 promulgated under the Securities Act of 1933. In 1988, the SEC amended Rule 482 to require performance advertisements to include a legend “disclosing that the performance data quoted represents past performance and that the investment return and principal value of an investment will fluctuate so that an investor’s shares, when redeemed, may be worth more or less than their original cost.”⁵⁸ The SEC intended this disclosure to resolve multiple problems with mutual fund performance advertisements. First, the SEC was concerned that some prospective investors did not understand that the performance data was historical information only.⁵⁹ The SEC complained

⁵¹*Id.* For example, if the fund had an unusually strong first two weeks of the current month, it might prefer to advertise its performance as of the end of the first two weeks of the current month, rather than as of the end of the last month, as the SEC requires.

⁵² 17 C.F.R. § 230.156 (2008).

⁵³ 17 C.F.R. § 230.156(b) (2008).

⁵⁴ *Id.*

⁵⁵ 17 C.F.R. § 230.156(b)(2)(ii)(B) (2008).

⁵⁶ 17 C.F.R. § 230.156(b)(2)(ii)(C) (2008).

⁵⁷ NASD Rule 2210(d)(1)(D).

⁵⁸ Advertising by Investment Companies, 53 F.R. 3868, 3879, (Feb. 10, 1988). Amendment to 17 CFR § 230.482(a)(6).

⁵⁹ Advertising by Investment Companies; Proposed Rules and Amendments to Rules, Forms, and Guidelines, 51 F.R. 34,384, 34390 (Sept. 26, 1986).

that disclosures that performance data are “historic and not necessarily indicative of future performance are often relegated to footnotes and very small print or presented in an incomplete or confusing manner,” if such disclosures were included at all.⁶⁰ In addition, the disclosure was intended to address the SEC’s concern that advertisements were insufficiently explaining the risks of investing in mutual funds, including the risk that investors could lose some of their principal.⁶¹

By 2003, the SEC had concluded that this disclaimer needed to be strengthened. The SEC believed that some funds had taken advantage of the unusually high stock market returns during 1999 and early 2000 to create performance advertisements using “techniques that create unrealistic investor expectations or may mislead potential investors.”⁶² As a result, the SEC amended the required disclaimer “to help investors understand the limitations of past performance data.”⁶³ Specifically, the disclaimer now must warn investors that

“past performance does not guarantee future results; that the investment return and principal value of an investment will fluctuate so that an investor’s shares, when redeemed, may be worth more or less than their original cost; and that current performance may be lower or higher than the performance data quoted.”⁶⁴

However, the SEC does not require that performance advertisements use this exact language; any wording that “clearly communicates” this information is sufficient.⁶⁵

In addition, to encourage investors to read it, the disclaimer is required to be displayed somewhat prominently in the advertisement. In particular, the disclaimer generally must be in a font size at least as large as, and in a font style different from (but at least as prominent as), the font used in the major portion of the advertisement.⁶⁶ In addition, the disclaimer must be in “close proximity” to the performance data and, in print advertisements, must be in the body of the advertisement rather than in a footnote.⁶⁷

⁶⁰ *Id.*

⁶¹ *Id.* at 34390-91 (Sept. 26, 1986).

⁶² Proposed Amendment to Investment Company Advertising Rules; Proposed Rules, 67 F.R. 36,712, 36,719 (May 24, 2002). The SEC did not specify or provide examples of the techniques that raised these concerns.

⁶³ Proposed Amendment to Investment Company Advertising Rules; Proposed Rules, 67 F.R. 36,712, 36,719 (May 24, 2002).

⁶⁴ 17 C.F.R. § 230.482(b)(3)(i) (2008).

⁶⁵ Amendments to Investment Company Advertising Rules, 68 F.R. 57,760, 57,765 (Oct. 6, 2003).

⁶⁶ 17 C.F.R. § 230.482(b)(5) (2008). Prominence requirements also exist for this disclaimer in electronically delivered advertisements and television and radio advertisements. 17 C.F.R. § 230.482(b)(5) (2008).

⁶⁷ Amendments to Investment Company Advertising Rules, 68 F.R. 57,760, 57,778 (Oct. 6, 2003); 17 C.F.R. § 230.482(b)(5). The disclaimer prominence and proximity requirements also

Finally, Rule 482 also implicitly encourages investors not to focus exclusively on a fund's past returns. All Rule 482 sales literature, whether or not it contains performance data, must contain a statement "advising an investor to consider the investment objectives, risks, and charges and expenses of the investment company carefully before investing" and directing potential investors to the fund prospectus to obtain this and other information about the fund.⁶⁸

In summary, mutual fund performance advertisements are governed by a number of statutes and SEC and NASD rules. Some of these provisions extensively regulate how past returns in advertisements are calculated and presented. These requirements are intended to facilitate investor comparison of funds, to ensure that advertised returns are current and accurately reflect a fund's performance, and to limit fund companies' ability to cherry-pick particular time periods' performances to advertise. In addition, the SEC also requires performance advertisements to contain a disclaimer warning investors that past performance doesn't guarantee future results and discouraging investors from relying too heavily on past returns when selecting mutual funds. The remainder of this article presents an experiment that tests the effect this disclaimer has on investors.

III. THE EXPERIMENT

This section describes our experiment that tests the effectiveness of the performance advertisement disclaimer required by Rule 482 of the 1933 Securities Act. Rule 482 requires that the disclaimer clearly communicate that "past performance does not guarantee future results; that the investment return and principal value of an investment will fluctuate so that an investor's shares, when redeemed, may be worth more or less than their original cost; and that current performance may be lower or higher than the performance data quoted." We hypothesize that such a disclaimer is ineffective in leading investors to appropriately discount the importance of advertised performance data. We conduct a randomized controlled experiment to examine if this is true. We also test whether a more strongly-worded and/or more prominent disclaimer would be more effective.

were adopted for supplemental sales literature. 68 F.R. 57,760, 57,7780 (Oct. 6, 2003); 17 C.F.R. 270.34b-1.

⁶⁸ 17 C.F.R. § 230.482(b)(1)(i) (2008). If the sales literature is used with a fund Profile, it must direct the investors to the profile instead of the prospectus. 17 C.F.R. § 230.482(b)(1)(i) (2008). A "Profile" is an abbreviated, summary prospectus that may include or accompany an application that investors can use to buy fund shares. 17 C.F.R. § 230.498(a)(2) (2008).

A. Predictions

There is reason to believe that the mutual fund disclaimer required by Rule 482 is ineffective. The disclaimer very likely does not provide new information to investors. It merely informs investors that strong past performance does not “guarantee” strong future performance and that they might lose money on their investment. However, any investor with even a perfunctory understanding of the financial markets knows that fund returns vary over time. This is especially true at present; during the recent financial crisis, the popular media reported daily on the stock market’s volatility.

Although the existing disclaimer does not provide new information to investors, it still may be useful if it reminds them that future fund returns might be lower than advertised past fund returns. Indeed, disclaimers in other domains (e.g., “Consumption of alcoholic beverages impairs your ability to drive a car or operate machinery” and “Smoking causes lung cancer, heart disease, emphysema, and may complicate pregnancy”) are intended less to inform consumers than to remind them of the potential negative consequences they already know.

However, reminders about the variability of fund returns are unlikely to curb investors’ tendency to chase past performance. The current disclaimer emphasizes the potential for returns higher than past returns as much as the potential for lower returns. Specifically, the disclaimer informs investors that “an investor’s shares, when redeemed, may be worth *more or less* than their original cost; and that current performance may be *lower or higher* than the performance data quoted” (emphasis added). Any heightened focus on lower-than-expected performance resulting from these disclosures may be offset by the corresponding heightened focus on higher-than-expected performance.

Ironically, the wording of the current disclaimer actually might lead investors to rely more heavily on past performance. The statement that “past performance does not guarantee future results” arguably implies that there is a positive relationship between past and future returns, just not a guaranteed one. Thus, the disclaimer might bolster investors’ false belief that high performing mutual funds are likely to continue to perform well.

The above arguments suggest that the existing disclaimer required by Rule 482 will be ineffective at best. How might the disclaimer be made more effective? Some have argued that increasing a warning’s prominence will increase its effectiveness. For example, health policy experts believe that the warning labels on tobacco products would be a more effective deterrent if they were larger and more graphic.⁶⁹ Several studies in other domains suggest

⁶⁹ David T. Hammond, Geoffrey T. Fong, Ron Borland, K. Michael Cummings, Ann McNeill & Pete Driezen. *Text and Graphic Warnings on Cigarette Packages: Findings from the International Tobacco Control Four Country Study*, 32 AM. J. PREVENTIVE MED. 202 (2007).

that a warning's prominence impacts its effectiveness.⁷⁰ However, other studies find that increasing the prominence of product warnings does not change consumer behavior.⁷¹

In addition to testing the effectiveness of the current disclaimer, our experiment tests the effect of increasing a disclaimer's prominence. The mixed results regarding the effects of warning prominence in other domains make it difficult to predict whether increasing the prominence of mutual fund advertisement disclaimers will decrease investors' reliance on performance data in the advertisements. The SEC appears to believe that the prominence of disclaimers in advertisements matters. Rule 482 states that the disclaimer's font must be at least as large as, and in a font style different from but at least as prominent as, the font used in the major portion of the advertisement.⁷² However, we believe that increasing a disclaimer's prominence is unlikely to affect investors unless the disclaimer provides new information to them. Because the current disclaimer provides only information that virtually all investors already know, we predict that increasing its prominence will not affect investors' judgments or behavior.

If the disclaimer were strengthened to provide new information to investors, then the disclaimer's prominence could be consequential. How can the disclaimer's information content be increased? The current disclaimer reminds investors that past returns do not "guarantee" future returns. However, such a warning does little to address the widespread misconception that funds that outperformed in the past are likely to continue to outperform in the future. As discussed above, studies find little, if any, evidence that high returns persist.⁷³ Funds that have outperformed other funds generally do not continue to do so in subsequent years. Advertised performance data influences investors because they mistakenly believe that high fund returns persist over time. Consequently, we predict that a more strongly-worded disclaimer – one that disabuses investors of this belief – will lead investors to discount advertised performance data. Our experiment tests this prediction also.

⁷⁰ Stephen L. Young & Michael S. Wogalter, *Comprehension and Memory of Instruction Manual Warnings: Conspicuous Print and Pictorial Icons*, 32 HUMAN FACTORS 637 (1990) (finding that larger warnings in owners' manuals are remembered better); Todd Barlow & Michael S. Wogalter, *Alcoholic Beverage Warnings in Magazine and Television Advertisements*, 20 J. CONSUMER RES. 147 (1993) (finding that consumers are more likely to remember larger warnings in alcoholic beverage advertisements).

⁷¹ Edward T. Popper & Keith B. Murray, *Format Effects on and In-Ad Disclosure*. 16 ADVANCES CONSUMER RES. 221 (1989) (finding chewing tobacco warnings ineffective even when their font size increases); Jennifer J. Argo & Kelley J. Main, *Meta-Analyses of the Effectiveness of Warnings Labels*, 23 J. PUB. POL'Y & MARKETING 193 (2004) (finding that, although consumers pay more attention to a more prominent warning, they do not better remember the warning's message).

⁷² 17 C.F.R. § 230.482(b)(5) (2008).

⁷³ See *supra* pp. 5-7.

B. Experimental Participants

A total of 553 students at two universities participated in the experiment. All participants completed the experiment during class and received a chocolate gift for their participation. Before participating, they were told that their participation was voluntary and that their individual responses would remain anonymous. One of the authors was present at each experimental session. Participants did not confer with each other during the experiment.

Three different student populations participated in the experiment: law students (n=235), Master's of Business Administration (MBA) students (n=185), and undergraduate business students (n=133). We chose these three groups because we expected them to vary in their investing experience and financial literacy. Examining people with differing levels of experience and expertise allows us to test the generalizability of our results.

Table 1 presents comparative demographic information for each group. Ninety-four percent of the participants across all three groups expected to invest in mutual funds in the future, and 83% had seen a mutual fund advertisement before. However, as expected, the groups differed significantly in their investing experience. As a group, the MBA students had much more experience than did either the law students or the undergraduates. For example, 73% of the MBA students had invested in mutual funds, but only 39% of the law students and 25% of the undergraduates had done so.

The MBA students were also more financially literate than were the other groups. The MBA students reported spending a median of three hours per week reading business-related periodicals or watching business-related television shows, compared to one hour for the law students and 1.5 hours for the undergraduates. Furthermore, the MBA students had completed a median of four finance or economics class, while the law students and the undergraduates had completed a median of only two and three classes, respectively. Likely as a result of these differences, the MBA students performed better best on the financial literacy test we gave participants after they completed the study. This test contained ten questions drawn from a twenty-question financial literacy test developed by the Vanguard Group.⁷⁴ The MBA students had a median of four questions correct on this test, while the law students and undergraduates had a median of two and three questions correct, respectively.

These demographic data confirm that our participants are an appropriate group for studying fund investors' behavior; about half currently invest in mutual funds and nearly all expect to invest in funds in the future. Furthermore, the participants vary in their investing experience and financial literacy. This allows us to test whether sophisticated and unsophisticated investors respond differently to disclaimers in mutual fund advertisements.

⁷⁴ The test questions are presented in Appendix A.

In fact, the results appear to generalize across types of mutual fund investors. When participants' student population group, gender, mutual fund investing experience, and performance on the financial literacy test are included as variables in this article's analyses (reported below), none of these demographic variables has a significant main effect on participants' responses (all $p > 0.10$). More importantly, the demographic variables do not interact with the independent variables (all $p > .10$). This suggests that the effects of the disclaimers are independent of the characteristics of the investor.

C. Experimental Procedures

1. Design

To test the effect of disclaimers in mutual fund performance advertisements, we conducted an experiment. All experimental participants were shown one of several versions of an advertisement for a fictitious equity mutual fund, the Allen Capital Appreciation Fund. The advertisement was modeled closely on a recent advertisement in *Money* magazine for the T. Rowe Price Capital Appreciation Fund.⁷⁵ The advertisement contains historical performance data for the fictitious fund. Specifically, a bar chart compares the advertised fund's returns to comparable funds' returns over the previous one, five, and ten years. The advertised fund outperformed comparable funds by about four percent per year over each of these three time periods. The advertisement also contains a disclaimer. The content and prominence of the disclaimer vary by version of the advertisement. We refer to each version of the advertisement as a different "condition."

The experiment has a 2 (Disclaimer Content: Standard, Strong) X 2 (Disclaimer Prominence: Standard, High) full factorial design with two control conditions. In other words, Disclaimer Content is varied on two levels. Some participants viewed the disclaimer currently required by the SEC, i.e. the *Standard Content*:

Current performance may be lower or higher than the quoted past performance, which cannot guarantee future results. Share price, principal value, and return will vary, and you may have a gain or loss when you sell your shares.

This wording is identical to the disclaimer in the actual advertisement on which the experiment's advertisement is based. Some participants instead viewed a more strongly-worded disclaimer that clearly communicates the lack of relationship between high past returns and high future returns, i.e., the *Strong Content*:

⁷⁵ MONEY, Oct. 2007, at 157.

Do not expect the fund's quoted past performance to continue in the future. Studies show that mutual funds that have outperformed their peers in the past generally do not outperform them in the future. Strong past performance is often a matter of chance.

Disclaimer Prominence is also varied on two levels. In the *Standard Prominence* condition, the disclaimer is in 11-point italicized, non-bold font, identical to that of the text occurring immediately after the disclaimer.⁷⁶ This is a standard level of prominence for disclaimers in real-world advertisements; Rule 482 prohibits using a smaller or less prominent font for a disclaimer than is used in the major portion of the advertisement. In the *High Prominence* condition, the disclaimer is in a larger, more prominent, 12-point italicized, bold font, so it stands out from the text following it.

The experiment fully crosses Disclaimer Content and Disclaimer Prominence, resulting in four disclaimer conditions: *Standard Content with Standard Prominence*, *Strong Content with Standard Prominence*, *Standard Content with High Prominence*, and *Strong Content with High Prominence*. Appendix B shows the advertisement provided to participants in the *Standard Content/Standard Prominence* condition.

The remaining two conditions are controls. These controls serve as baselines that allow us to evaluate the efficacy of the disclaimers contained in the other four conditions described above. One control condition, which we refer to as the *No Disclaimer* condition, is the same advertisement as in the other conditions, except that it contains no disclaimer at all. Because participants in this condition viewed an advertisement with performance data but no disclaimer, we examine the effects of disclaimers on investors by comparing the responses of participants in this control condition with those of participants in the four disclaimer conditions described above. If investors in a particular disclaimer condition are less willing to invest in the advertised fund than are investors in this control condition, this suggests that the disclaimer is at least somewhat effective. If, however, investors in a particular disclaimer condition are as willing to invest as are investors in this control condition then the disclaimer is ineffective.

The advertisement in our other control condition (*No Performance Data*) contains neither historical performance data nor a disclaimer. Recall that studies have found that funds that have outperformed in the past generally do not continue to outperform in the future. This suggests that investors should ignore performance data in fund advertisements. Therefore, an ideal

⁷⁶ Immediately following the disclaimer, in the same paragraph, investors are told that “[f]or the most recent month-end performance, please call us or visit our Web site. You can request a prospectus or a briefier profile; each includes investment objectives, risks, fees, expenses, and other information that you should read and consider carefully before investing.” Recall that Rule 482 requires such language in performance advertisements.

disclaimer would cause investors to disregard advertised performance data. We examine whether the disclaimers are completely effective by comparing participants' responses in the various disclaimer conditions with responses in this control condition. If participants in a particular disclaimer condition are more willing to invest than are participants in this control condition, this suggests that the disclaimer is not entirely effective because the advertised performance data is still influencing their responses. However, if participants in a particular disclaimer condition are only as willing to invest as are participants in this control condition, this indicates that the disclaimer leads investors to disregard completely the advertised performance data.

In summary, there are six different conditions in the experiment. Four conditions constitute all possible combinations of our two manipulated variables, Disclaimer Content and Disclaimer Prominence. The remaining two conditions serve as controls. Each participant was assigned randomly to one of the six conditions.

2. Dependent Variables

After viewing a version of the advertisement, all participants answered a series of questions. They first indicated their beliefs about the advertised fund's future performance and their willingness to invest in the fund. Two questions captured participants' performance expectations:

- “Indicate the degree to which you agree or disagree with the following [statement]: ‘The *Allen Funds' Capital Appreciation Fund* will outperform other mutual funds in the future.’” Participants answered this question using a 1 - 7 scale with endpoints labeled “Strongly Disagree” (1) and “Strongly Agree” (7).
- “What do you expect the *Allen Funds' Capital Appreciation Fund's* total return to be in the 12-month period following the advertisement?” Participants answered this open-ended question by writing in a percentage increase or decrease (i.e., “_____ expected total return”).

Two additional questions captured participants' willingness to invest in the fund:

- “If you had retirement money to invest and the *Allen Funds' Capital Appreciation Fund* was one of the funds available in your employer's retirement plan, would you allocate a portion of your retirement money to this fund?” Participants answered this question using a 1 - 7 scale with endpoints labeled “Definitely would not allocate to the *Allen Fund*” (1) and “Definitely would allocate to the *Allen Fund*” (7).

- “What percentage of your retirement money would you be willing to allocate to the *Allen Funds’ Capital Appreciation Fund*?” Participants answered this question using a 0% - 100% scale.

Participants were also asked whether they believed that a fund’s past returns predicts its future returns. Specifically, participants indicated their level of agreement with the statement “The *Allen Funds’ Capital Appreciation Fund*’s past performance is a good predictor of its future performance.” Participants responded on a 1 - 7 scale with endpoints labeled “Strongly Disagree” (1) and “Strongly Agree” (7).

After answering these questions, participants provided demographic information, answered a series of manipulation check questions, and took the financial literacy test.

D. Experimental Results

1. Performance Expectations

As described above, two questions assess participants’ expectations regarding the advertised fund’s future performance. One question asks participants how likely the advertised fund is to outperform other mutual funds in the future, and the other question asks participants to assess the fund’s expected return for the next year.

Panel A of Table 2 presents, by experimental condition, participants’ mean expectations regarding how likely the advertised fund is to outperform other funds in the future. It shows that participants are more likely to believe that the advertised fund will outperform other funds if the advertisement contains a standard disclaimer than if it contains a more strongly-worded disclaimer (Mean *Standard Content* = 4.36; Mean *Strong Content* = 3.69).⁷⁷ This relation holds regardless of the disclaimer’s prominence. The analysis of variance (ANOVA) reported in Panel B shows that this difference is statistically significant. Specifically, when we conduct an ANOVA with *Disclaimer Content* and *Disclaimer Prominence* as independent variables and belief in future outperformance as a dependent variable, the ANOVA shows a significant main effect for *Disclaimer Content* ($F_{1,361} = 32.94$, $p < 0.01$). This confirms that a stronger disclaimer is better able to temper investors’ beliefs about future fund outperformance than is the current, standard disclaimer.

We further explore the effects of the standard and strong disclaimers by comparing the responses of participants in the *Standard Content* and *Strong Content* conditions with the responses of participants in the two control

⁷⁷ Recall that participants were asked the degree to which they agreed with the statement “[t]he *Allen Funds’ Capital Appreciation Fund* will outperform other mutual funds in the future. Their answers could range from 1 (Strongly Disagree) to 7 (Strongly Agree).

conditions. We find that participants in the *Standard Content* condition are no less likely to believe that the fund will outperform than are participants in the *No Disclaimer* control condition (Mean *Standard Content* = 4.36; Mean *No Disclaimer* = 4.39; $t_{273} = 0.22$, $p = 0.82$). In other words, the current disclaimer does not affect investors' judgments about the likelihood that the fund will outperform other funds in the future.

In contrast, participants in the *Strong Content* condition are significantly less likely to believe that the fund will outperform than are participants in the *No Disclaimer* control condition (Mean *Strong Content* = 3.69; Mean *No Disclaimer* = 4.39; $t_{278} = 4.82$, $p < 0.01$), suggesting that a strong disclaimer would be at least somewhat effective. In fact, the participants in the *Strong Content* condition and the *No Performance Data* control condition do not have significantly different expectations regarding the fund's future outperformance. (Mean *Strong Content* = 3.69; Mean *No Performance Data* = 3.62; $t_{277} = 0.50$, $p = 0.62$). In other words, participants who view the strong disclaimer have similar expectations to those who do not view performance data at all, suggesting that the strong disclaimer causes investors to completely disregard the advertised performance data.

Turning next to the effect of the disclaimer's prominence, the ANOVA shows an insignificant main effect for *Disclosure Prominence* ($F_{1,361} = 0.70$, $p = 0.40$). In other words, although there is a small difference in participants' reactions to the standard-prominence and high-prominence disclaimers (Mean *Standard Prominence* = 4.08; Mean *High Prominence* = 3.96), this difference is not statistically significant. This suggests that the disclaimer's prominence has little, if any, effect on investors' performance expectations.

Participants' expected return judgments display a pattern similar to that of their beliefs about the likelihood of the fund's future outperformance. Panel A of Table 3 shows that participants who view the strongly-worded disclaimer expect substantially lower returns from the fund than do those who view the standard disclaimer (Mean *Standard Content* = 6.99%; Mean *Strong Content* = 4.91%). In addition, once again, the prominence of the disclaimer has a much smaller effect on participants' judgments (Mean *Standard Prominence* = 6.18%; Mean *High Prominence* = 5.69%). An ANOVA confirms the effect of the disclaimer's content is statistically significant ($F_{1,350} = 6.68$, $p = 0.01$) but the effect of the disclaimer's prominence is not ($F_{1,350} = 0.29$, $p = 0.59$).

To further examine the magnitude of the effects of the standard and strong disclaimers, we compare the expected return judgments of participants in the *Standard Content* and *Strong Content* conditions with those of participants in the *No Disclaimer* control condition. We find that participants in the *Standard Content* condition actually expect *higher* returns than those in *No Disclaimer* condition (Mean *Standard Content* = 6.99%; Mean *No Disclaimer* = 6.35%), although this difference is not statistically significant ($t_{262} = 0.91$, $p = 0.37$). In other words, investors are, at best, unswayed by the current disclaimer in mutual fund advertisements. At worst, the current

disclaimer intensifies, rather than tempers, investors' performance expectations.

The strong disclaimer, in contrast, does reduce investors' expectations. Participants who view the strong disclaimer expect significantly lower returns than those who view no disclaimer (Mean *Strong Content* = 4.91%; Mean *No Disclaimer* = 6.35%; $t_{270} = 1.41$, $p = 0.08$).

2. Willingness to Invest

An investor's expectations regarding a fund's future performance is a primary determinant of the investor's willingness to invest in the fund. Consequently, the results for the willingness-to-invest measures should follow a pattern similar to those of the performance expectation measures. In other words, the standard disclaimer should have little, if any, effect on participants' willingness to invest and the strong disclaimer should decrease their willingness to invest. Further, because the disclaimer's prominence did not significantly affect participants' performance expectations, prominence should also not significantly affect their willingness to invest.

Recall that two measures of participants' willingness to invest are used. First, participants indicated their willingness to allocate a portion of their retirement money to the advertised fund using a 7-point scale with endpoints labeled "Definitely would not allocate" (1) and "Definitely would allocate" (7). Second, they indicated the percentage of their retirement money that they would be willing to allocate to the fund (0% to 100%). Table 4 and Table 5 present participants' mean responses to these questions, respectively.

These tables show that, by either measure, participants are less willing to invest in the advertised fund if they view the strong disclaimer than if they view the standard disclaimer. They are less likely to allocate any of their retirement investment at all to the fund if they view the *Strong Content* rather than the *Standard Content* (Mean *Allocate Standard Content* = 4.42; Mean *Allocate Strong Content* = 3.88). In addition, the percentage of their retirement money they are willing to allocate to the fund is lower if they view the *Strong Content* rather than the *Standard Content* (Mean *Percentage Standard Content* = 24.12%; Mean *Percentage Strong Content* = 20.61%).

Separate ANOVAs for these two measures both show a main effect for *Disclaimer Content*, confirming that these differences are statistically significant (Allocate: $F_{1,363} = 15.21$, $p < 0.01$; Percentage: $F_{1,360} = 4.65$, $p = 0.03$). In addition, the ANOVAs again show insignificant main effects for *Disclaimer Prominence*, indicating that, similar to the performance expectation results, participants are not significantly influenced by the

disclaimer's prominence (Allocate: $F_{1,363} = 2.15$, $p = 0.14$; Percentage: $F_{1,360} = 0.01$, $p = 0.94$).⁷⁸

Comparing participants' willingness to invest in the *Standard Content* and *Strong Content* conditions to their willingness to invest in the *No Disclaimer* control condition, shows that the strong disclaimer is effective in decreasing reliance on the advertised performance data but the standard disclaimer is not. Specifically, participants' mean willingness to allocate any retirement money to the advertised fund is 4.41 in the *No Disclaimer* condition, compared to 4.42 in the *Standard Content* condition and 3.88 in the *Strong Content* condition. In addition, the mean percentage of their retirement money they are willing to allocate to the fund is 23.85% in the *No Disclaimer* condition, compared to 24.12% in the *Standard Content* condition and 20.61% in the *Strong Content* condition.

The difference between the *Strong Content* and *No Disclaimer* conditions is statistically significant for both willingness-to-invest measures (Allocate: $t_{279} = 3.05$, $p < 0.01$; Percentage: $t_{276} = 1.65$, $p = 0.05$), indicating that the strong disclaimer decreases investors' willingness to invest. In contrast, by both measures, the standard disclaimer actually slightly increases, rather than decreases, investors' willingness to invest, although neither increase is close to statistically significant (Allocate: $t_{274} = 0.08$, $p = 0.93$; Percentage: $t_{270} = 0.13$, $p = 0.90$). This suggests that the standard disclaimer is ineffective at curbing investors' tendency to rely on the performance data. The strong disclaimer, in contrast, appears to be quite effective. In fact, participants who view the *Strong Content* condition are not significantly more willing to invest than are those who view the control advertisement containing no performance data at all (Allocate: $t_{278} = 1.56$, $p = 0.12$; Percentage: $t_{276} = 1.15$, $p = 0.25$). This indicates again that a strong disclaimer may cause investors to completely disregard performance data in an advertisement.

In summary, the willingness-to-invest results are consistent with the performance expectations results. The disclaimer currently used in mutual fund performance advertisements appears to not significantly affect investors' willingness to invest. In contrast, a stronger disclaimer decreases, if not eliminates, investors' reliance on advertised performance data.

3. Belief Regarding Extent to Which Past Returns Predict Future Returns

Investors very likely flock to funds with high past returns because they mistakenly believe that funds that have outperformed in the past are likely

⁷⁸ A multivariate analysis of variance that includes all four primary measures (i.e., both performance expectations measures and both willingness to invest measures) as dependent variables shows inferentially identical results. That is, this analysis shows a significant main effect for *Disclaimer Content* ($F_{4,345} = 9.01$, $p < 0.01$), an insignificant main effect for *Disclaimer Prominence* ($F_{4,345} = 0.90$, $p = 0.46$), and an insignificant *Disclaimer Content* by *Disclaimer Prominence* interaction term ($F_{4,345} = 0.18$, $p = 0.95$).

to outperform in future. Consequently, we predicted that participants would be less influenced by advertised high past returns when they read a disclaimer that disabuses them of this notion. In other words, we believe that the strong disclaimer reduces investors' reliance on the advertised performance data because the disclaimer informs them that high past returns aren't predictive of high future returns.

To test whether this is the process underlying the strong disclaimer's effectiveness, we conduct a mediation analysis. We asked participants the extent to which they agree with the statement that "[t]he *Allen Funds' Capital Appreciation Fund's* past performance is a good predictor of its future performance." They responded using a 7-point scale with endpoints labeled "Strongly Disagree" (1) and "Strongly Agree" (7). We refer to this as the *Past Predicts Future* measure. Table 6 presents participants' responses by experimental condition. It shows that the standard disclaimer does not inform participants that high past returns are not a good predictor of high future returns. Participants in the *Standard Content* condition had the same mean *Past Predicts Future* measure as did participants in the *No Disclaimer* control condition (Mean *Standard Content* = 3.99; Mean *No Disclaimer* = 4.04; $t_{368} = 0.34$, $p = 0.73$). In contrast, the strong disclaimer caused participants to be significantly less likely to believe that past performance is a good predictor of future performance (Mean *Strong Content* = 3.35; Mean *No Disclaimer* = 4.04; $t_{277} = 3.42$, $p < 0.01$).

To test whether the differences across conditions in willingness to invest are due to differences in beliefs about the predictive value of past returns, we re-estimate the ANOVAs for the two willingness-to-invest measures and include the *Past Predicts Future* variable as a covariate. Recall that in our original ANOVAs, we observed significant main effects for *Disclaimer Content*; participants who viewed the *Strong Content* were significantly less willing to invest in the fund than were participants who viewed the *Standard Content*. When we add the *Past Predicts Future* variable to these models, this variable is highly significant ($F_{1,361} = 43.12$, $p < 0.01$ and $F_{1,358} = 51.45$, $p < 0.01$, in the *Willing to Allocate* and *Percentage Allocation* ANOVAs, respectively), and *Disclaimer Content* is less significant than it was before ($F_{1,361} = 6.98$, $p = 0.01$ and $F_{1,358} = 0.65$, $p = 0.42$, in the *Willing to Allocate* and *Percentage Allocation* ANOVAs, respectively).⁷⁹ This analysis suggests that investors' beliefs about the predictive value of past returns mediate the effects of *Disclaimer Content*. The strong disclaimer reduces willingness to invest largely because it informs investors that high past returns are not a good predictor of high future returns.

⁷⁹ Recall that the *Willing to Allocate* question asked participants how likely they were to invest a portion of their retirement money in the advertised fund, and the *Percentage Allocation* question asked what percentage of their retirement money they would be willing to invest in the fund.

IV. DISCUSSION AND CONCLUSION

Mutual funds have become a key component of Americans' savings and our retirement system. Thus, it is important that investors make wise fund choices. Mutual fund companies advertise their better-performing funds because these advertisements are effective. Investors are drawn to advertised high returns, despite there being little, if any, relationship between high past returns and high future returns.

Investing based on fund advertisements is a costly mistake; advertised funds significantly underperform their benchmarks after being advertised. In addition, to the extent that an investor is focusing on past returns in choosing a fund, the investor is focusing less on more important factors, such as the fund's fees and expenses, and whether the fund's objective and investment strategy are consistent with the investor's objectives and risk tolerance.

To discourage investors from over-relying on past returns, the SEC requires mutual fund performance advertisements to include a disclaimer warning that past returns don't guarantee future returns and that investors might lose money investing in the fund. The results of our experiment strongly indicate that this disclaimer fails to reduce investor reliance on advertised past returns, but that a stronger disclaimer would be more effective. Before discussing these findings in more detail, however, some limitations of the experiment should be noted.

As with any controlled experiment, issues of ecological validity must be considered. Participants were asked to read a mutual fund advertisement and complete a survey. However, normally when people see a performance advertisement, they come across it while reading a magazine or newspaper; no one asks them to focus on the advertisement or to make an immediate investment decision. Consequently, participants in the experiment probably read the advertisement more closely than people normally do. This difference has two likely implications for interpreting the survey's results.

First, it makes the observed impotence of the standard disclaimer even more remarkable. If the SEC's disclaimer has no impact on the beliefs and behavior even of people who focus on the advertisement, then it almost certainly has no impact on people who view the advertisement more casually and thus who might only skim or entirely skip the disclaimer.

Second, the experiment's results may overstate the impact of the strong disclaimer. To the extent that study participants read the advertisement more closely than normal, they would be more likely to read the strong disclaimer than would the typical investor. Thus in a real world situation, the strong disclaimer might have a smaller impact than that observed in this experiment.

Another issue is whether the composition of the pool of study participants – MBA students, law students, and undergraduate business students –

causes the results to have only limited applicability to the broader population of all fund investors. We do not believe that it does. Although the three groups varied widely in their investing experience and financial literacy, their response to the disclaimers did not differ significantly. As noted above, when we included participants' student population group, gender, mutual fund investing experience, and financial literacy test score as variables in this article's analyses, none of these variables had a significant main effect on participants' responses. In addition, none the demographic variables interacted significantly with any of the independent variables. This indicates that the effects of the disclaimers are independent of the characteristics of the investor. Thus, the experiment's results appear to generalize across different types of mutual fund investors.

In short, our experiment found that the SEC-mandated disclaimer is ineffective. It does not make people less willing to invest in the advertised fund, and does not reduce their expectations about the fund's future returns. This result was not unexpected. The disclaimer is weak; it provides no new information to investors. It merely informs them that past returns don't *guarantee* future returns and that they could even lose money on their investment. This is very common knowledge, however, especially in light of the recent financial crisis. Because the disclaimer provides no new information to investors, it does not make them more cautious about investing in the fund.

How can the disclaimer be made more effective? The experiment found that merely making the current disclaimer more prominent would have little to no effect on investor behavior. In contrast, however, the experiment produced evidence that a stronger disclaimer would make a difference:

Do not expect the fund's quoted past performance to continue in the future. Studies show that mutual funds that have outperformed their peers in the past generally do not outperform them in the future. Strong past performance is often a matter of chance.

For many investors, this stronger disclaimer provides new information: high past returns are a poor predictor of high future returns. Investors ordinarily flock to high-performing funds, reflecting their belief that high past returns predict high future returns. As the mediation analysis showed, the stronger disclaimer helps disabuse investors of this belief and thus affects their investing behavior.

The consistency of the experiment's results is also noteworthy. We used two measures of participants' expectations regarding the advertised fund's future performance, and two measures of the participants' willingness to

invest in the fund. The standard disclaimer did not come close to having a significant effect on any of the measures.

In contrast, depending on the measure, the strong disclaimer reduced participants' expectations regarding the fund's future returns and their willingness to invest by 14 - 23%. There is evidence that the strong disclaimer might even have been fully effective, causing participants to disregard completely the advertised performance data. By some of the measures, participants who viewed the strong disclaimer responded to the advertisement the same way as did participants who viewed the advertisement containing no performance data at all.

In conclusion, fund performance advertisements are misleading investors into buying funds with high past returns. The current SEC-mandated disclaimer is not helping. To discourage investors from chasing past returns, the SEC must begin by informing them that their chase is futile.

Table 1 – Demographics of Study Participants

	Undergraduate Business Students	Law Students	MBA Students	Overall
Expected Future Investing & Investing Experience:				
% who expect to invest in the future	93%	95%	94%	94%
% who have invested in individual stocks	36%	42%	73%	51%
% who have invested in mutual funds	25%	39%	73%	47%
Median years of investing experience	2	4	5	4
Financial Literacy:				
% who had seen a mutual fund advertisement prior to participating in the study	73%	83%	90%	83%
Median number of finance and economics classes completed	3	2	4	3
Median number of hours per week spent reading business-related periodicals or watching business-related television shows	1.5	1	3	2
Median score on Vanguard financial sophistication test	3	2	4	3

Table 2
Likelihood of Fund Outperforming in the Future

Panel A: Mean (Standard Deviation) Judgments by Experimental Condition

	Standard Content	Strong Content	
Standard Prominence	4.40 (1.00) n=93	3.75 (1.19) n=91	4.08 (1.15) n=184
High Prominence	4.31 (1.18) n=87	3.64 (1.05) n=94	3.96 (1.16) n=181
	4.36 (1.09) n=180	3.69 (1.12) n=185	

Panel B: ANOVA Results

	df	MSE	F-statistic	p-value
Disclaimer Content	1	40.41	32.94	< .01
Disclaimer Prominence	1	0.86	0.70	.40
Disclaimer Content × Disclaimer Prominence	1	0.01	0.01	.92

Table 3
Fund's Expected Return for Next Year

Panel A: Mean (Standard Deviation) Judgments by Experimental Condition

	Standard Content	Strong Content	
Standard Prominence	6.91 (4.79) n=88	5.44 (10.50) n=88	6.18 (8.17) n=176
High Prominence	7.07 (6.49) n=85	4.42 (7.13) n=93	5.69 (6.92) n=178
	6.99 (5.65) n=173	4.91 (8.92) n=181	

Panel B: ANOVA Results

	df	MSE	F-statistic	p-value
Disclaimer Content	1	377.14	6.68	.01
Disclaimer Prominence	1	16.43	0.29	.59
Disclaimer Content × Disclaimer Prominence	1	30.70	0.54	.46

Table 4
Willingness to Allocate a Portion of Retirement Money to Fund

Panel A: Mean (Standard Deviation) by Experimental Condition

	Standard Content	Strong Content	
Standard Prominence	4.51 (1.06) n=94	4.00 (1.34) n=92	4.25 (1.23) n=186
High Prominence	4.33 (1.41) n=87	3.77 (1.41) n=94	4.04 (1.44) n=181
	4.42 (1.24) n=181	3.88 (1.38) n=186	

Panel B: ANOVA Results

	df	MSE	F-statistic	p-value
Disclaimer Content	1	26.15	15.21	< .01
Disclaimer Prominence	1	3.70	2.15	.14
Disclaimer Content × Disclaimer Prominence	1	0.07	0.04	.84

Table 5
Percentage of Retirement Money Willing to Allocate to Fund

Panel A: Mean (Standard Deviation) by Experimental Condition

	Standard Content	Strong Content	
Standard Prominence	23.76 (15.86) n=92	20.85 (14.06) n=92	22.31 (15.02) n=184
High Prominence	24.49 (16.86) n=87	20.38 (15.35) n=93	22.37 (16.18) n=180
	24.12 (16.31) n=179	20.61 (14.68) n=185	

Panel B: ANOVA Results

	df	MSE	F-statistic	p-value
Disclaimer Content	1	1123.86	4.65	.03
Disclaimer Prominence	1	1.48	0.01	.94
Disclaimer Content × Disclaimer Prominence	1	33.00	0.14	.71

Table 6
Belief Regarding Whether Past Returns Predict Future Returns

Panel A: Mean (Standard Deviation) by Experimental Condition

	Standard Content	Strong Content	
Standard Prominence	3.96 (1.51) n=94	3.48 (1.63) n=91	3.73 (1.58) n=185
High Prominence	4.01 (1.46) n=87	3.21 (1.63) n=94	3.60 (1.60) n=181
	3.99 (1.48) n=181	3.35 (1.63) n=185	

Panel B: ANOVA Results

	df	MSE	F-statistic	p-value
Disclaimer Content	1	37.49	15.42	< .01
Disclaimer Prominence	1	1.12	0.46	.50
Disclaimer Content × Disclaimer Prominence	1	2.42	1.00	.32

Appendix A – Financial Literacy Test

Below are the questions included in our financial literacy test. Questions were drawn from a 20-question financial literacy test developed by Vanguard. Correct responses are indicated in bold.

- | | |
|---|---|
| <p>1. A mutual fund's performance is best measured by:</p> <ul style="list-style-type: none">A. Income return.B. Total return.C. Yield.D. Capital gains distributions.E. Don't know. <p>2. If a mutual fund charges an expense ratio of 1% in 2008:</p> <ul style="list-style-type: none">A. You will pay a one-time fee amounting to 1% of the number of shares held in the account.B. Your fund investment's returns will be reduced by 1% in 2008 and each year thereafter.C. Your fund investment is reduced by 1% at the time you buy shares.D. You will pay a sales charge of 1% to a broker at the time you buy shares.E. Don't know. <p>3. Common stocks always provide higher returns than bond or money market investments.</p> <ul style="list-style-type: none">A. True.B. False.C. Don't know. <p>4. If interest rates decline, the price of an existing bond or bond fund generally will:</p> <ul style="list-style-type: none">A. Increase.B. Decrease.C. Stay about the same.D. Don't know. <p>5. The goal of an <u>index</u> mutual fund is to:</p> <ul style="list-style-type: none">A. Track the investment return of a specified stock or bond benchmark.B. Beat the investment return of a specified stock or bond benchmark.C. Buy only stocks in the S&P 500 index.D. Invest in the best-performing sectors of the stock market.E. Don't know. | <p>6. Dollar cost averaging is:</p> <ul style="list-style-type: none">A. A strategy that entails buying low and selling high.B. A way to sell fund shares to minimize capital gains.C. An approach in which you invest the same amount of money in a fund at regular intervals.D. Don't know. <p>7. From 1926 to 2001, the average total return per year for the U.S. stock market was:</p> <ul style="list-style-type: none">A. 4% per year.B. 11% per year.C. 22% per year.D. 33% per year.E. Don't know. <p>8. If you own only U.S. stocks in your investment portfolio, you can reduce your overall risk by adding international stocks.</p> <ul style="list-style-type: none">A. True.B. False.C. Don't know. <p>9. Which type of investment has generally offered the best protection against inflation over long periods of time?</p> <ul style="list-style-type: none">A. Money market funds and bank savings accounts.B. Stocks.C. Bonds.D. Don't know. <p>10. Generally, a portfolio that has 80% of its assets invested in stocks would be best suited for:</p> <ul style="list-style-type: none">A. An 18-year-old using the assets to pay for college expenses over the next 4 years.B. A 35-year-old investing for retirement.C. A 75-year-old investing for income and capital preservation.D. Don't know. |
|---|---|

Appendix B – Excerpt from Experimental Materials

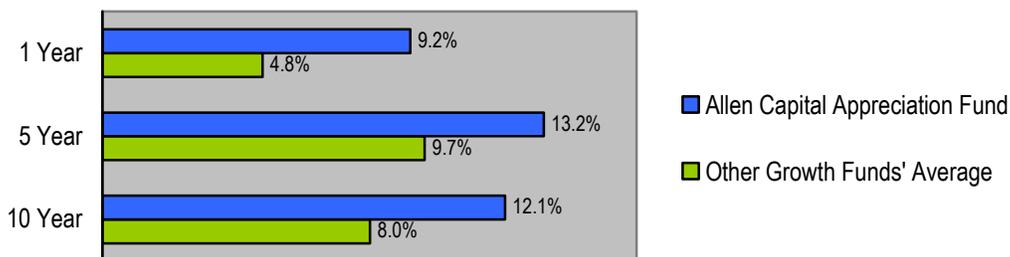
Suppose the following advertisement appears in *Money*, a popular personal finance magazine, in January 2010, a year from now.

Proven performance in a variety of market conditions.

The Allen Funds' Capital Appreciation Fund

This mutual fund works as hard to preserve capital as it does to maximize gains. It employs a growth strategy, investing in companies believed to have high growth potential. For more information, call our Investment Guidance Specialists or visit our Website, and discover all the differences in our fund management approach.

Past Performance of Allen Capital Appreciation Fund vs. Competitors



Average annual total returns as of 12/31/09. Total return includes changes in principal value, reinvested dividends, and capital gain distributions. The Allen Capital Appreciation Fund's expense ratio was 0.75% for the most recent fiscal year.

Current performance may be lower or higher than the quoted past performance, which cannot guarantee future results. Share price, principal value, and return will vary, and you may have a gain or loss when you sell your shares. For the most recent month-end performance, please call us or visit our Web site. You can request a prospectus or a briefer profile; each includes investment objectives, risks, fees, expenses, and other information that you should read and consider carefully before investing.