Behavioral Finance versus Standard Finance

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Behavioral finance is built on the framework of standard finance but supplies a replacement for standard finance as a descriptive theory. Behavioral finance reflects a different model of human behavior and is constructed of different components—prospect theory, cognitive errors, problems of self-control, and the pain of regret. These components help make sense of the world of finance—including investor preferences, the design of modern financial products, and financial regulations—by making sense of normal investor behavior.

Finance practitioners and academics are, or should be, interested in the following questions:

- Why do investors like dividends?
- Why do investors hate to realize losses?
- Why do investors prefer stocks of "good" companies?
- How are expected returns determined?
- What kinds of securities do investors like?
- What are the forces that shape financial regulations?

The range of questions is wide. It includes investor behavior; the interaction of investors in markets, which determines security prices; and the interaction of citizens in public policy arenas, which determines financial regulations.

Standard finance—the body of knowledge that is built on such pillars as the arbitrage principles of Merton Miller and Franco Modigliani, the portfolio construction principles of Harry Markowitz, the capital asset pricing theory of John Lintner and William Sharpe, and the option-pricing theory of Fischer Black, Myron Scholes, and Robert Merton—is so compelling because it uses only a few basic components to build a unified theory, a theory that should provide answers to all the questions of finance.

Few theories, however, are fully consistent with all the available empirical evidence, and standard finance is no exception. For example, Miller (1986) readily acknowledges that the observed preference for cash dividends is one of the "soft spots in the current body of theory" (p. S451). Miller goes on to argue, however:

> that the rationality-based market equilibrium models in finance in general and of dividends in particular are alive and well—or at least in no worse shape than other comparable models in economics at their level of aggregation. The framework is not so weighed down with anomalies that a complete reconstruction (on behavioral/cognitive or other lines) is either needed or likely to occur in the near future. (p. S466)

I argue that, today, ten years after Miller spoke, standard finance is indeed so weighted down with anomalies that it makes much sense to continue the reconstruction of financial theory on behavioral lines.

Standard finance is constructed with a few common components that have many uses. So is behavioral finance. But the components of standard finance and behavioral finance, reflecting different models of human behavior, are different. This presentation provides examples of the construction of behavioral finance as a framework that builds on standard finance and replaces it.

Proponents of standard finance often concede that their financial theory does poorly as a descriptive, or positive, theory of the behavior of individuals. They retreat to a second line of defense: that standard finance does well as a descriptive theory of the equilibrium that results from the interaction of individuals in markets. For example, Miller (1986) wrote that, for individual investors,

> stocks are usually more than just the abstract "bundles of returns" of our economic models. Behind each holding may be a story of family business, family quarrels, legacies received, divorce settlements, and a host of other considerations almost totally irrele-

> vant to our theories of portfolio selection. That we abstract from all these stories in building our models is not because the stories are uninteresting but because they may be too interesting and thereby distract us from the pervasive market forces that should be our principal concern. (p. S467)

Even the second line of defense, however, does not hold. Evidence is mounting that the capital asset pricing model (CAPM), the market equilibrium theory by which risk and expected returns are determined in standard finance, is not a good description of reality. Moreover, contrary to Miller's view, I think that financial decisions by individuals and institutions are the proper domain of finance, not merely stories that "distract us from the pervasive market forces that should be our principal concern." Indeed, a good theory of the financial behavior of individuals is crucial for a good theory of the equilibrium that results from the interactions of individuals in the marketplace. To understand the differences between the components from which standard finance and behavioral finance are constructed, consider the arbitrage principle.

People in standard finance are not confused by frames. The pricing of a call option in the Black–Scholes model is a good example. The price of a call option is determined by substance: the knowledge that the cash flows of an option can be replicated by a particular dynamic combination of a bond and the underlying stock. The fact that in one case the cash flows are framed in terms of options and in the second case flows are framed in terms of bonds and stocks does not matter to standard finance investors. If the option cash flows exceed the cash flows of the stocks and bonds, "standard investors" engage in arbitrage, make arbitrage profits, and move prices to equilibrium levels where arbitrage is no longer profitable.

Whereas standard investors are never affected by frames, "behavioral investors" are often affected by frames. Moreover, behavioral investors are affected by frames in a normal, predictable way. Consider the following question: Which investment position is more risky?

1. a $1,000 long position in U.S. T-bills or
2. a $1,000 short position in naked call options on the S&P 500 Index.

Most people choose the options position as the more risky one. Someone whose overall portfolio is positively correlated with the S&P 500 and who has chosen the options position as the more risky position is probably a behavioral investor—one who has been fooled by the frame. The options position is negatively correlated with this investor's portfolio; thus, it provides a hedge and lowers overall portfolio risk. In contrast, the T-bill position has only a zero correlation with the portfolio and reduces its risk by less than the options position. Normal behavior is to ignore covariances and assess the risk of an asset in isolation from the overall portfolio. By that rule, the options position *is* more risky, but by the rules of Markowitz, the cash position is the more risky one.

People in standard finance are rational. People in behavioral finance are normal. When offered a choice between a $10 bill and a $20 bill, both rational and normal people choose the $20 bill. Rational people, however, are never confused by frames that make that $10 bill look like a $100 bill, whereas as Amos Tversky shows, normal people are often confused by frames.[1]

The effect of frames on choice is one part of Kahneman and Tversky's (1979) prospect theory, and prospect theory is one of the components of behavioral finance. Susceptibility to cognitive errors is a second component of behavioral finance (see Kahneman, Slovic, and Tversky 1982). For example, standard investors are never fooled by the "law of small numbers." They know that five years of return data on a mutual fund provide little information about the investment skills of the fund's manager. Standard investors also know that, as they assess the ability of the manager of a particular fund—say, the Magellan Fund—they should take into consideration the evidence on the ability of the average fund manager to beat the market. Behavioral investors tend to conclude that a five-year record of a fund is plenty of evidence about the skills of its manager and that the performance of the average fund manager is irrelevant in the assessment of the skill of a particular fund manager.

Standard-finance people are immune to problems of self-control. They stick to their diet plans and find it easy to turn down tempting desserts. They also stick to their savings plans and never engage in impulse buying. Behavioral investors are subject to temptation and, as Thaler and Shefrin (1981) noted, they look for ways to improve their self-control.

Standard-finance investors are also immune to the pain of regret (see Kahneman and Tversky 1982). Standard-finance people feel no greater disappointment when they miss their plane by a minute as when they miss it by an hour. Behavioral investors know the joy of pride and the pain of regret as they kick themselves harder when they miss the plane by only a minute.

The following sections describe how the components of prospect theory, cognitive errors, self-control, and regret can help make sense of the world of finance and answer the questions posed at the beginning of this presentation. I begin with dividends, the issue discussed by Miller (1986).

[1] See Professor Tversky's presentation, pp. 2–5.

Investor Preferences for Cash Dividends

During the energy crisis of the early 1970s, Con Edison, the power company in New York City, decided to eliminate its dividend. At Con Edison's 1974 annual meeting, shareholders revolted; some cried, some had to be restrained from doing physical harm to the company's chairman. Here is a typical shareholder reaction, quoted from the transcript of the 1974 meeting:

> A lady came over to me a minute ago, and she said to me, "Please say a word for the senior citizens." And she had tears in her eyes. And I really know what she means by that. She simply means that now she will get only one check a month, and that will be her Social Security, and she's not going to make it because you have denied her that dividend.

Standard-finance shareholders of Con Edison would have been upset by the energy crisis and its impact on the value of Con Edison's stock, but they would not have been angry about the decision to eliminate the dividend. The Con Edison shareholders must have been behavioral investors.

Standard investors follow the arbitrage principle of Miller and Modigliani and know that in a world without taxes and transaction costs, they should be indifferent between a dollar in dividends and a dollar in capital. Standard investors are indifferent between dividends and capital because they do not rely on company decisions to create dividends. They can create "homemade dividends" by selling shares. Moreover, in a world where dividends are taxed more heavily than capital gains, investors are actually better off when companies refrain from paying dividends. So, why do investors like dividends? This is the puzzle to standard finance about which Black (1976) wrote. Hersh Shefrin and I have used the components of behavioral finance to explain why investors like dividends (Shefrin and Statman 1984).

A central element of prospect theory is that people segment their money into mental accounts. A dividend dollar is identical to a capital dividend in standard finance, but a dollar dividend is different from a capital dollar in prospect theory because the two dollars belong to separate mental accounts and mental accounting is done account by account. The decline in the price per share of Con Edison is a loss in the capital mental account, and the elimination of the dividend is a loss in the dividend mental account. Paying the dividend would have provided a "silver lining" lessening the pain even if the dividend payment had resulted in a further decline in the price of the stock.

Segregating monies into mental accounts is especially beneficial for people who have difficulty with self-control. As noted earlier, standard finance investors have no self-control difficulties in either diets or savings, but behavioral investors have to combat the desire for dessert even when they know that vegetables are better for their long-term welfare. Rules are a good tool for self-control. "No dessert before vegetables" is one such rule. "Consume from dividends but don't dip into capital" is another. Recall that the person who spoke for the woman at the Con Edison meeting did not even consider the possibility of dipping into capital to create homemade dividends.

Indeed, following standard finance theory can get people into deep trouble. One person in the audience at the Con Edison meeting asked why stock dividends were not paid in place of cash dividends "so at least the blow to stockholders by the omission of dividends would have been much less." The chairman, in an explanation that would have made Miller and Modigliani proud, explained that stock dividends are no more than pieces of paper and that shareholders can create homemade dividends by selling a few shares. The chairman missed the point entirely. Naming the pieces of paper "dividends" moves them from the capital mental account to a dividend mental account and allows consumption without violating the rule of "don't dip into capital."

In short, contrary to the precepts of standard finance, investors make important distinctions between dividends and capital. The distinctions are rooted in the way they frame money in mental accounts and the rules by which they use these frames to control savings and consumption. One cannot solve the dividend puzzle while ignoring the patterns of normal investor behavior.

Selling Winners Too Early, Riding Losers Too Long

Underlying the arbitrage principle of Miller and Modigliani is the mechanism of arbitrage. An investor who sells a share at $100 in one market and simultaneously buys a share of the same company in another market for $95 engages in arbitrage, with a risk-free gain of $5. Of course, standard-finance investors never leave arbitrage opportunities unexploited.

The tax law, especially as it stood before the 1986 changes, provided investors with the "timing" arbitrage opportunity described by Constantinides (1983, 1984). The opportunity arises from differences in the tax rates on long-term and short-term gains and losses. Here is how it works: Imagine that you have $10,000 and you have decided to invest it in a no-load mutual fund, Fund A. You also identify Mutual Fund B, whose returns are perfectly correlated with the returns on Fund A. Imagine also that the "short term" is classified by the Internal Revenue Service as one year, so gain and loss realizations after

one year are classified by the IRS as "long term."

You hold Fund A for a month, and as it happens, the stock market declines and your shares are now worth $9,000, a paper loss of $1,000. Now the arbitrage game at the expense of the IRS begins. You realize the $1,000 paper loss by selling your shares in Fund A and using the $9,000 in proceeds to buy shares of Fund B. The $1,000 loss, as a short-term loss, can be offset against your regular income taxed at, say, 30 percent. Your "rebate" from the IRS is 30 percent of $1,000, or $300. Now, imagine that you hold the $9,000 in Fund B for a year and a day, and the value of the shares appreciates from $9,000 to $10,000. You realize your $1,000 paper gain as a long-term gain. You pay, say, 20 percent, or $200, as a long-term tax to the IRS and buy $10,000 in shares of Fund A.

Compare your situation to the situation of an investor who held Fund A for the entire period. That investor begins with $10,000 and ends with $10,000—no gains, no losses. You, however, have $10,100 because your initial $300 tax rebate is $100 higher than the later $200 tax payment. This kind of arbitrage is easy. It involves only the exploitation of a quirk in the tax law. And, of course, standard-finance investors have no difficulty recognizing or exploiting arbitrage opportunities.

Behavioral investors have a problem with the arbitrage prescription; it requires the realization of a $1,000 "paper loss" as they sell Fund A and buy Fund B. Behavioral investors hate to realize losses. Behavioral investors think of money within mental accounts and distinguish paper losses from "realized losses." A stock with a paper loss might rise in price, so the chance exists that the mental account containing the stock will break even, but a realized loss means kissing the hope of breaking even goodbye. Behavioral investors are reluctant to realize losses, despite the tax advantages of doing so, because of the pain of regret that comes with kissing hope goodbye.

Gross (1982) described the reluctance of investors to realize losses this way:

> Many clients, however, will not sell anything at a loss. They do not want to give up the hope of making money on a particular investment, or perhaps they want to get even before they get out. The "getevenitis" disease has probably wrought more destruction on investment portfolios than anything else. (p. 150)

Shefrin and I have analyzed transactions in mutual funds and stocks and found evidence against the standard finance hypothesis that people engage in the tax arbitrage that Constantinides described (Shefrin and Statman 1985). Ignoring arbitrage opportunities and leaving $100 (or much more) in the pocket of the IRS may not be rational, but it is hard for behavioral investors to bring themselves to realize losses.

Why Investors Prefer Stocks of Good Companies

Everyone has heard that beta is dead. Some say it is coming back; others say it is dead for good. The life or death of beta is so important because beta is the center of the CAPM and the CAPM is the standard-finance way of understanding risk, expected returns, and the relationship between the two.

The current state of the CAPM illustrates the danger in the tendency of standard finance to downplay an understanding of human behavior and concentrate instead on the resulting equilibrium in financial markets. The assumptions about human behavior that underlie the CAPM are not simplified versions of observed behavior. Rather, they contradict observed behavior. For example, investors in the world of the CAPM are assumed to agree on the expected returns of all assets. Of course, nobody believes that this assumption comes even close to a description of human behavior.

Assumptions about individual behavior might not matter when a theory works, but the CAPM does not work. Now that Fama and French (1992) have brought the sorry state of the CAPM to the headlines, standard finance offers no fallback theory for expected returns and risk. Instead, the result is data mining in the form of size and book-to-market effects.

Shefrin and I have also observed the choices of investors, rather than stock prices, and offered insights into the process by which investors form expectations about stock returns (Shefrin and Statman 1995b). An analysis of investor expectations might well be the best route to understanding the equilibrium levels of expected returns because, as everyone agrees, realized-return data, upon which virtually all current analyses are based, are very noisy. In comparison, the noise level in expectational data is low.

For example, *Fortune* magazine collects data on expectations through surveys it conducts of a group of respondents who are commonly regarded as sophisticated investors—executives, members of boards of directors, and financial analysts. Thousands of respondents are asked each year to rank companies on eight attributes, including quality of management, quality of products and services, and value as a long-term investment. The top three companies, as judged by the average quality score in the survey published in the February 1993 issue of *Fortune*, are Merck & Company, Rubbermaid, and Wal-Mart. The bottom three companies are Wang Laboratories, Continental Airlines, and Glenfed.

Consider the relationship between the rating of a given company on quality of management and on value as a long-term investment. Quality of management is an attribute of the *company*. In contrast, value

as a long-term investment is an attribute of the *stock* of the company. If respondents to the *Fortune* survey believe in market efficiency, they will conclude that the price of a stock fully reflects the quality of the company. In efficient markets, the wonderful growth opportunities of good companies are fully reflected in the prices of their stocks, and therefore, the stocks offer no special value as a long-term investment. Similarly, the lousy growth opportunities of bad companies are fully reflected in the prices of their stocks. Neither stocks of good companies nor stocks of bad companies are bargains in an efficient market. If so, we should find a zero correlation between the *Fortune* ratings on quality of management and the *Fortune* ratings on value as a long-term investment.

Now consider, in contrast, what might be expected if the Fortune respondents are standard-finance investors who properly incorporate the knowledge reflected in findings on size and ratio of book value to market value (BV/MV) by Fama and French (1992) and others. Shefrin and I have found that, in general, companies that Fortune respondents rate highly by quality of management have high market values of equity (large size) and low BV/MVs. These characteristics, of course, apply to companies whose stocks provide low returns, according to Fama and French. If respondents to the Fortune survey are aware of the Fama and French results, explicitly or implicitly, they should produce a negative correlation between the rating of a company on quality of management and the rating of the stock of the company on value as a long-term investment. In fact, Shefrin and I found neither the zero correlation between quality of management and value as a long-term investment, which would be expected if the *Fortune* respondents believe stock prices are efficient, nor the negative correlation expected if the *Fortune* respondents follow Fama and French. Instead, we found a strong positive correlation. A regression of value as a long-term investment on quality of management produces not only a positive coefficient with a rare significant *t*-statistic, 43.95, but also an adjusted R^2 of 0.86. In other words, people as sophisticated as the *Fortune* respondents think that good stocks are the stocks of good companies although the evidence indicates that the opposite is true.

Why do people think that stocks of companies such as Merck, Rubbermaid, and Wal-Mart offer higher values as long-term investments than stocks of companies such as Wang, Continental Airlines, and Glenfed? Michael Solt and I have argued that investors tend to believe that good stocks are stocks of good companies because they fall prey to the *representativeness* heuristic (Solt and Statman 1989).

A person who follows the representativeness heuristic evaluates the probability of an uncertain event by the degree to which it (1) is similar in essential properties to its parent population and (2) reflects the salient features by which it is generated. In other words, an event A is judged more probable than an event B when A appears more representative than B. Kahneman and Tversky (1972) have supported the hypothesis that subjects judge the probability of an event by its representativeness with a series of experiments.

Consider this experiment (Kahneman and Tversky 1982). Subjects were presented with a brief personality sketch of Linda: Linda is 31 years old, single, outspoken, and very bright. She majored in philosophy. As a student, she was deeply concerned with issues of discrimination and social justice and also participated in antinuclear demonstrations.

Subjects were then asked which event is more probable:

- Linda is a bank teller (T).
- Linda is a bank teller and is active in the feminist movement (T & F).

The description of Linda was constructed to be similar to or representative of the profile of an active feminist and unrepresentative of that of a bank teller. Now, the rules of probability state that the compound event T & F cannot be more probable than the simple event T. Yet, 87 percent of all subjects judged the probability of the compound event that Linda is a bank teller *and* is active in the feminist movement as higher than the probability of the simple event that Linda is a bank teller.

The outcome of this experiment is consistent with the hypothesis that subjects judge the probability of an event by its similarity or representativeness. Specifically, because a feminist attitude seems more representative of Linda than the bank teller occupation, subjects concluded that Linda is more probably a bank teller and feminist than a bank teller.

In interviews following the experiment, Kahneman and Tversky asked 36 subjects to explain their choices. More than two-thirds of subjects who selected the compound event gave some version of a similarity or typicality argument as their reason but agreed, after some reflection, that the response was wrong because everyone who is both a bank teller and a feminist must also be a bank teller. Only two of the subjects maintained that the probability order need not agree with class inclusion, and only one claimed that he had misinterpreted the question.

In relation to good companies and good stocks, Solt and I argue that investors overestimate the probability that the stock of a good company is a good stock because they rely on the representativeness heuristic. They overestimate the probability that a good stock is stock of a good company because a good stock is similar to a good company.

The *Fortune* respondents rate stocks as if they like stocks of companies with high-quality management, with high market values of equity, and with low BV/MVs. Do they care about beta? No. Regression results show that there is no statistically significant relationship between value as a long-term investment and beta.

Typical *Fortune* respondents are behavioral investors, investors who believe that good stocks are stocks of good companies. Standard investors know what Fama and French know, that good stocks are stocks of bad companies. Behavioral investors load up on stocks of good companies. Standard investors tilt their portfolios toward stocks of bad companies, but being fully rational, they are mindful of the negative effect that concentration has on portfolio diversification. Thus, standard investors moderate the tilt toward stocks of bad companies, and the force that they exert on stock prices may not, therefore, be sufficient to counter fully the effect of behavioral investors. In short, the picture of equilibrium that Shefrin and I see consists of many behavioral investors who hold portfolios tilted toward the stocks of good companies, a few standard investors who hold portfolios tilted toward stocks of bad companies, and an expected-returns equilibrium where stocks of bad companies—low market values of equity and high BV/MVs—have high returns.

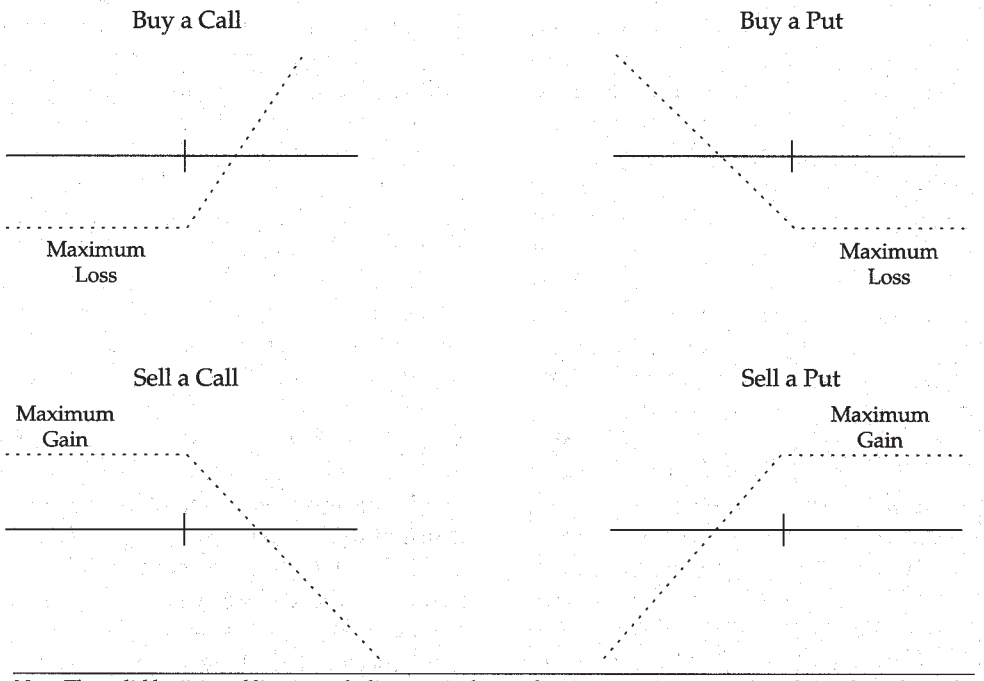
The Design and Marketing of Financial Products

In teaching students the basics of options, I draw profit diagrams, as shown in **Figure 1**, of the four basic positions: buying a call, selling a call, buying a put, and selling a put. I ask the students, "Which positions do you like?" They like the idea of buying calls and puts, but they hate the idea of selling (naked) calls and puts. They explain that buying a call is attractive because the position has a floor on losses but unlimited potential for gains. "The maximum that I can lose is the premium," they say. Selling a (naked) call involves a ceiling on gains but unlimited potential for losses.

Next, I show them a profit diagram of a covered-call option (shown in **Figure 2**), a position that combines buying a share of stock for, say, $21 and selling a call option on the stock with an exercise price of $25 for $1. My students like the idea of covered calls, but they are surprised to realize that the shape of the profit diagram of the covered-call position that they like is identical to the shape of the selling a (naked) put position that they hate. My students are hardly unique; the attraction of covered calls has been a puzzle to standard finance for years. But Shefrin and I have attempted to explain that attraction (Shefrin and Statman 1993a).

Covered calls are promoted by investment advisors as positions that contain free lunches. Here is an example from the Research Institute of America's

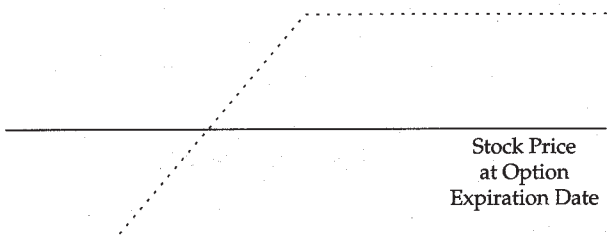
Figure 1. Profit Diagram for Call and Put Options



Note: The solid horizontal line in each diagram is the stock price at option expiration date. The tick marks on this line indicate the point at which the strike price equals the stock price at expiration.

Source: Meir Statman.

Figure 2. Profit Diagram for a Covered-Call



Source: Meir Statman.

Personal Money Guide:

> An investment strategy that can make you extra money is writing calls on securities you already own. . . . When you sell a call on a stock you own, you receive a premium. Think of these premiums as extra dividends. By careful selection of stocks and timing of writing calls, you have the opportunity to earn annual rates of returns of 11 percent to 19 percent: regular dividends of 4 percent to 9 percent and premium "dividends" of 7 percent to 10 percent.

And here is an example of the exasperated response of standard finance:

> Even for long-term investors who plan "never" to sell their stocks, the premiums received from writing options against these stocks cannot be treated as simply extra income to be added to the normal return of the stocks, as some advertising in the options industry seems to suggest. (Merton, Scholes, and Gladstein 1978)

Why do investors continue to ignore the good advice of standard finance? One part of the answer is that behavioral investors frame the cash flows of covered calls into separate mental accounts rather than integrate them as standard finance suggests. Consider the way Gross (1982) frames covered calls in his manual for brokers:

> Joe Salesman: You have told me that you have not been too pleased with the results of your stock market investments.
>
> John Prospect: That's right. I am dissatisfied with the return, or lack of it, on my stock portfolio.
>
> Joe Salesman: Starting tomorrow, how would you like to have three sources of profit every time you buy a common stock?
>
> John Prospect: Three profit sources? What are they?
>
> Joe Salesman: First, you could collect a lot of dollars—maybe hundreds, sometimes thousands—for simply agreeing to sell your just-bought stock at a higher price than you paid. This agreement money is paid to you right away, on the very next business day—money that's yours to keep forever. Your second source of profit could be the cash dividends due you as the owner of the stock. The third source of profit would be in the increase in price of the shares, from what you paid, to the agreed selling price.

By agreeing to sell at a higher price than you bought, all you are giving up is the unknown, unknowable profit possibility above the agreed price. In return, for relinquishing some of the profit potential, you collect a handsome amount of cash that you can immediately spend or reinvest, as you choose. (p. 166)

Note the way Gross frames the cash flows into three "sources of profit" rather than integrating the three into an overall net cash flow. Of course, standard investors have no difficulty in integrating the cash flows, and they understand that covered calls provide no free lunch. But not all investors can disentangle the cash flows from their frame, and covered calls remain popular.

As Ross (1989) wrote, when standard finance scholars are asked to explain the proliferation of financial products and the features of their designs, they tend to "fall back on old canards such as spanning." Ross emphasized the role of marketing in the world of financial products. Shefrin and I (1993a) have shown that an understanding of the behavior of individuals and institutions explains the design of covered calls, money market funds, and many other securities.

Behavioral Forces That Shape Financial Regulations

"Do you know what the concept of suitability means in the context of investments?" I ask financial economists. Few know, and few investment textbooks mention suitability. In contrast, suitability regulations are well known to securities brokers. Perhaps financial economists within standard finance ignore suitability regulations because they are not important, or perhaps they ignore them because suitability is difficult to fit into standard finance.

Suitability regulations revolve around the responsibilities of brokers to their customers. Brokers are required to ascertain that the securities they recommend are suitable for their customers based on the customers' financial conditions and needs. Consider the experience of Charles Schwab & Company. Charles Schwab is, of course, a discount broker that provides no investment advice. An investor was trading options through Schwab and lost $500,000. Then, claiming that those investments were unsuitable for his financial condition and needs, he sued Schwab. Schwab's argument in its defense was that it does not give advice; it merely trades what the investor wants traded. The arbitration panel said that Schwab's argument is irrelevant, the option trades were not suit-

able for that investor, and the fact that Schwab is a discount broker does not exempt it from suitability regulations.

The typical reaction of financial economists when they are told about suitability regulations is that these regulations are senseless and should be abolished. Suitability regulations prevent investors from using their investor sovereignty to choose the securities they want and construct the portfolios that are, in their judgments, optimal. The role of a theory is to explain the evidence, however, not argue with it.

Suitability regulations make no sense in standard finance because, in standard finance, people are assumed to be free of cognitive errors and problems of self-control. Suitability regulations are important, however, for behavioral investors. Indeed, suitability regulations can be understood as tools that help behavioral investors control the effects of their cognitive errors and self-control problems. In that sense, suitability regulations are analogous to "cooling-off" regulations.

Consider the door-to-door sales of vacuum cleaners. By law, a customer has three days after making a purchase, a cooling-off period, to cancel the transaction. The existence of this law implies that people have realized that sometimes they get too "hot" for their own good; they need time to cool off, think clearly, and regain their self-control. So, through the legislative process, people created a law that helps them control their cognitive errors and imperfect self-control. The same argument applies to securities. People understand that cognitive errors and imperfect self-control interfere with good decisions. So, through the law, they appoint a broker or investment advisor to do for them what parents do for children—say no to choices that parents judge irresponsible.

Or consider state merit, or blue-sky, regulations. Under them, a bureaucrat in, for example, Sacramento decides whether a particular security can or cannot be sold to residents of California. The rationale behind merit regulations is that people are susceptible to cognitive errors and, left to their own devices, will overpay for securities. As in the case of suitability regulations, merit regulations are designed to protect investors from themselves, protection that makes no sense in standard finance.

Consider merit regulations in light of the evidence on the returns from initial public offerings. Mounting evidence indicates that investors who buy IPOs in the public market, on average, lose substantially. Left to their own devices, IPO investors overpay for IPOs. Should merit regulations be abolished or, given the evidence on the returns IPOs provide, should the regulations be tightened?

Suitability and merit regulations are not the only tools designed to help behavioral investors cope with their shortcomings. Shefrin and I have analyzed suitability, merit, and such other regulations as those pertaining to insider trading and mandatory disclosure (Shefrin and Statman 1992, 1993b).

Conclusion

Standard finance is well built on the arbitrage principles of Miller and Modigliani, the portfolio construction principles of Markowitz, and the CAPM of Lintner and Sharpe. Standard finance does not do well, however, as a descriptive theory of finance. Investors regularly overlook arbitrage opportunities, fail to use Markowitz's principles in constructing their portfolios, and fail to drive stock returns to levels commensurate with the CAPM.

People in standard finance are rational. They are not confused by frames, they are not affected by cognitive errors, they do not know the pain of regret, and they have no lapses of self-control. People in behavioral finance may not always be rational, but they are always normal. Normal people are often confused by frames, affected by cognitive errors, and know the pain of regret and the difficulty of self-control. I argue that behavioral finance is built on a better model of human behavior than standard finance and the better model allows it to deal effectively with many puzzles that plague standard finance, among them, the puzzles discussed here—investor preference for cash dividends, investor reluctance to realize losses, the determination of expected returns, the design of securities, and the nature of financial regulations.

Finance offers many other puzzles. Some are small—for example, why the practice of dollar-cost averaging persists despite its inconsistency with standard finance (Statman 1995). Some are large—for example, why investors ignore Markowitz's rules of portfolio construction (Shefrin and Statman 1995b). These puzzles might be solved within behavioral finance.

Financial professionals who understand behavioral finance will understand their own behavior and improve their decisions. Institutional investors who understand behavioral finance will understand the beliefs and motives of their clients and will be better at serving and educating them.

Question and Answer Session

Meir Statman

Question: What is "quality of management," and how do we measure or quantify it?

Statman: Quality of management is the rating of quality of management by respondents to *Fortune's* survey of companies. Respondents give each company a score on quality of management ranging from zero (absolutely awful) to ten (glorious). The correlations cited in the presentation are based on the averages of those rankings from all the *Fortune* respondents. We do not know the respondents' thought processes in assigning the ratings.

Question: Did you examine the relationship between past stock performance and management ratings from the *Fortune* survey?

Statman: Yes, and the answer is in a paper that Roger Clarke and I wrote (Clarke and Statman 1994). One of the characteristics of high-quality companies is that their past stock returns are high.

Question: As a matter of communication, can we educate ourselves and our clients to look at portfolios rather than segments? If so, how?

Statman: It is possible to educate people, but we need more than education. I begin my talk about portfolios in my investments class by telling students that their intuition is likely to mislead them. What is really needed are structures that prevent us from acting on wrong intuition—for example, a work sheet with boxes that must be filled in—a framework that forces us to consider factors that, acting on intuition alone, we are likely to miss.

Question: With all the information available about the benefits of indexing—costs are low and managers have difficulty outperforming the indexes—why aren't more people indexing?

Statman: Indexing does not correspond to investors' intuition about the way the market works. I ask my students, "When you buy a stock because you are confident that it is a bargain, who do you think is the idiot who is on the other end of the transaction?" Most have never thought about this question. Most people do not think about the stock market as a zero-sum game relative to index funds. They do not consider the likelihood that the trader on the other side of the trade might be an insider and that they, in fact, are the patsy.

Question: Some of the findings of decision theory suggest that individuals overpay for volatility, whereas your research suggests that individuals overpay for stability, or good companies. How do we reconcile these views?

Statman: People frame their money into those different pockets. So, there is no unified attitude toward risk. Many people who buy insurance also buy lottery tickets. Are they risk averse or risk seeking? Investors divide their money into "safe" money and "risky" money (Shefrin and Statman 1995a).

Question: A so-called new finance is driven heavily by market inefficiency. Where does behavioral finance fit in this approach—as a subset or as the keystone?

Statman: Behavioral finance is a replacement for standard finance as a descriptive theory. The return anomalies are the pebbles in the shoe that make one say, "Enough! Standard finance does not work." When standard theories of portfolio selection are inconsistent with the evidence and when market forces are inconsistent with the predictions of the CAPM, the wise move is to go back to an examination of the financial decisions of individuals.

Moreover, the activities of individuals and institutions are a legitimate concern of the field of finance even if they do not affect prices. When corporations fail to deploy their assets efficiently, welfare declines. Agency theory focuses on the issues that pertain to welfare losses and mechanisms for alleviating such losses (see Jensen and Meckling 1976). Welfare losses also exist when individuals fail to construct efficient portfolios; a description of such losses and mechanisms for the alleviation of such losses are a concern of finance practitioners and should be a concern of finance academics.

As behavioral finance develops, we ought to keep in mind that we need theory that contains testable hypotheses, not stories. I take delight when somebody finds evidence contrary to hypotheses of behavioral finance. At least nobody can say that our theory is a just-so theory that cannot be refuted by evidence.

Moreover, explaining the existing anomalies is not enough. Behavioral finance will be tested in its ability to explain phenomena that are not even recognized today as anomalous within standard finance.