

BAD CHOICES IN EFFICIENT MARKETS: A JUSTIFICATION FOR THE STUDY OF PERSONAL FINANCE

*Michael Finke, Ph.D.
University of Missouri*

ABSTRACT

Insight into the disconnect between predicted household investment behavior and observed reality is provided in the current investment and personal finance literature. However, research into the barriers that prevent households from making choices consistent with their long-run financial goals is incomplete and presents a justification for closer examination of personal finance as a social science. A brief review of the literature exploring anomalies in personal finance is presented with a focus on investment studies that are not easily explained by efficient market theory. Since many of these anomalies may be particularly acute among investors with less financial sophistication, research that explores the predictable frailties of investors may shed light on the regressive effects of policy that increases personal responsibility among investors who are not able to navigate complex markets efficiently.

Introduction

Personal finance, or the study of financial resource allocation choices at the household level, has often been neglected in academic finance literature in favor of research that focuses on the characteristics of investment instruments with respect to a hypothesized (but often unobserved) set of individual preferences. The mounting empirical evidence that investors often do not behave according to the conventional set of theorized preferences presents both a challenge and an opportunity for financial planning researchers.

When investors make mistakes, it is assumed that more rational or informed investors will intervene in financial markets to force asset prices back to their fundamental value. Since asset prices are at their fundamental value, research that focuses on individual behavior is often seen as spurious since even blind choice leads to a portfolio of fairly priced investments and

individuals cannot move markets. However, there is mounting evidence that as we focus more closely on individual investors we perceive behavior that results in choices that cannot be reconciled easily with the theory of efficient markets.

While prices may be efficient, inefficient choice leads to significant welfare losses as investors deviate from an efficient portfolio. This paper reviews a growing body of empirical literature that documents broad evidence of decision making among individual investors that appears contrary to efficient portfolio choice. Understanding common mistakes made by investors allows professionals to anticipate and guide clients toward often complex financial choices that are consistent with the client's goals. Literature that sheds light on the inconsistencies and deficiencies of investors as they navigate the financial marketplace provides a roadmap for researchers to explore the causes of and solutions to welfare-reducing decision making anomalies.

Rational Intertemporal Allocation

The economist assumes households have a realistic and accurate idea of their future earnings path, an expectation of investment returns, and the return distribution of available financial instruments that is formed from past observation, and the ability to estimate the impact of income as well as the returns on assets on utility across time. Most families have no idea what their income path will look like, have little awareness of the financial instruments available, are not able to translate the marginal utility from consumption choices across time, and even the most knowledgeable investment experts cannot agree on how available financial instruments are likely to perform in the future. Viewed in this light, it is not surprising that households often choose not to invest in retirement plans unless placed in the plan automatically when hired (Choi, Laibson, Madrian, & Metrick, 2002), deviate significantly from what is theoretically predicted by the life cycle hypothesis (Ando & Kennickell, 1986), and allocate assets in a manner that is more a function of inertia and chance than a result of a consistent response to levels of wealth, income, and risk aversion (Madrian & Shea, 2001).

Equity Premium

Mehra and Prescott (1985) find that the relative risk aversion consistent with the excess returns of riskier financial instruments (stocks) between 1889 and 1978 is so remarkably large that they deem the failure to invest in stocks a puzzle. During this period, stocks outperformed short-term U.S. government debt by 6.2 percent per year. Further, it has been argued that because stocks tend to revert to their mean over time they are in fact less risky

than bonds among investors with a very long-run horizon, and that given past return patterns an optimal allocation to stocks for those with a ten year horizon is 100% (Barberis, 1999). This, of course, assumes the equity premium and long-run variance characteristics will persist.

One behavioral explanation for the large premium on equity versus risk-free investment is the tendency of investors to weigh the disutility of a loss more than the added utility of an equal gain. The aversion to losses, known as prospect theory (Kahneman & Tversky, 1979), is consistent with empirical studies of gambles and may explain the anxiety investors experience when their equity investments fluctuate in value.

Another market anomaly is the surprisingly large volatility of equity prices if one assumes that equity prices are simply the discounted future payouts of corporations (Campbell & Shiller, 1988). Either the discount rates or expectations about future dividend payouts must vary wildly on a daily basis, when in fact neither interest rates nor dividend payouts over time vary as much as volatile equity prices would imply. In a world of excess equity price volatility, loss aversion can create a tremendous amount of dissatisfaction among investors who are constantly monitoring the values of their portfolio. Benartzi and Thaler (1995) find the prospect theory can explain aversion to equity investment among those who reevaluate their portfolios on an annual basis. That most investors reevaluate with each quarterly statement is enough to explain enormous aggregate flows into and out of equity mutual funds every month.

There is also evidence that an investor's loss aversion may depend on whether they are investing prior gains (Thaler & Johnson, 1990). This "house money" effect creates the illusion that the past gains represent easy money, while the original investment represents money earned. Thus, investors feel more comfortable about taking risks with their past gains than with their earned wealth – an effect that is not explained by traditional economic theory. It may also explain why investors tend to move toward increased equity investment over time as they feel they are merely taking risks with unearned winnings, despite the prediction that they will move toward bonds or other less volatile assets upon retirement. Conversely, there is evidence that investors are resistant to selling investments at a loss. Odean (1998) finds that investors are more likely to sell investments in their portfolio that have gone up in value while holding onto losers in the hopes of recouping their original investment.

Constant portfolio monitoring and the emotional response to wins and losses in the market may drive excessive trading behavior. Despite the existence of transaction costs, individual investors find it difficult to refrain from making frequent trades. In a study of individual accounts from a large brokerage firm, Barber and Odean (2000) find that excessive trading has significant adverse effects on mean returns of investors. Men in particular

seem to suffer from investment restlessness, which may be why their investments underperform those of women (Barber & Odean, 2001).

Diversification

A portfolio that provides the highest expected return for a given level of risk consists of a diversified mix of assets. A mutual fund, for example, provides an easy way for an individual investor to create greater diversification at a lower initial investment. Individual investors, however, exhibit a surprising lack of wealth diversification. This may be partially a function of the complexity of selecting an efficient portfolio, which requires an awareness of the covariance among investment assets. Benartzi and Thaler (2001) observe that when presented with a list of mutual funds to choose from, many investors simply allocated their portfolio evenly among all available mutual funds rather than simply choosing a single diversified fund – leading to an aggregate portfolio that lacks diversification despite splitting money among a number of funds.

Many investors exhibit a “home bias” in which they prefer investing in geographically proximate stocks (French & Poterba, 1991). Even mutual funds seem to invest in firms whose headquarters are nearby (Coval & Moskowitz, 1999). Workers who invest in their employer’s stock are subject to extreme idiosyncratic risk as both their investment portfolio and their human capital are weighted toward the fortunes of one firm. Benartzi (2001) finds that nearly a third of assets in U.S. defined contribution plans are held in employer’s stock.

Return Predictability

The expected future rate of return on equities, although never certain, can be predicted to some extent by the current prices of stocks as a multiple of either dividends or earnings. Although often left unmentioned when professionals provide clients with estimates of expected stock returns based on average historical returns, history has provided evidence that stocks tend to provide higher yields if they are bought when their prices are lower and lower returns when their prices are higher.

How do we determine whether current stock prices are high or low? Fama and French (1988) use dividend yields (aggregate dividends divided by price or D/P) to predict future stock returns. They find that current D/P ratios predict as much as 25% of future (2-4 year) stock returns, and that a high ratio of dividends to price predicts higher returns and vice versa. The intuition is that when the cost of investment capital is high, stock prices will be lower. This is further supported by the correlation between D/P ratios and interest rates on bonds (Fama & French, 1989). In his book “Irrational Exuberance”

written in 2000, Robert Shiller noted that the peak stock price/earnings ratios occurred in 1901, 1929, 1966 and 2000. Although investors should have realized that the expected return (the cost of investment capital) was low, net new inflows into domestic equity funds increased by 64% from \$188 billion in 1999 to \$309 billion in 2000 (Collins, 2001).

One explanation for mutual fund flow behavior both on the aggregate and toward individual funds is what has been referred to as the representativeness bias, or the law of small numbers (Rabin, 2002). Investors place too great a weight on recent stock performance as representative of future returns. This “hot hand” phenomenon has been observed in basketball, where it appears that a player who just sunk consecutive shots is more likely to score on his next shot when in fact he is not (Gilovich, Vallone & Tversky, 1985). A strategy to outperform the market is to construct portfolios of extreme recent losers to take advantage of overreaction to recent events (DeBondt & Thaler, 1985), a strategy that outperformed the market by 19.6% in subsequent three-year periods.

The Prior Returns Fallacy and Fund Marketing

The use of prior return information holds tremendous intuitive appeal to investors. When shopping for a mutual fund, investors look to investment guides, advertising, or even SEC mandated prospectus disclosure to identify funds that have stronger recent or long-run returns. The intuition is that some funds are better managed than others, and that prior returns help investors identify the best funds. Studies of the flows of new investor funds to mutual funds with recent high returns show that investors are very willing to shift their money to last year’s winner and away from last year’s loser (Sirri & Tufano, 1998).

Zhang (1999) identifies some success of an investment strategy that involves the constant movement of investments to past winners among small funds in the short-run, however the strategy does not prove useful as a means of predicting long-run winners and involves a significant time cost. Jain and Wu (2000) find that mutual funds that advertise their superior past performance are not able to subsequently outperform the market. They do, however, attract significantly greater funds from investors.

Cooper, Gulen, and Rao (2003) find that when mutual funds change their names to a category favored by investors, for example from “growth” to “value” after the internet stock crash, fund inflows from investors increase significantly – even among funds that don’t actually change the composition of their portfolios. This is consistent with the hypothesis that investor demand for funds, and even individual stocks, is partially a function of the marketing of that asset and not necessarily a function of its fundamental value (or present value of future income streams). For example, firms that added the

term “dotcom” to their names experienced an average excess announcement (instantaneous) return of 74% (Cooper, Dimitrov & Rao, 2001). Of course, after the internet bubble burst firms that dropped dotcom from their names experienced a positive excess announcement return of 70% (Cooper, Korana, Osobov, Patel, & Rau, 2005).

Conclusion

Although there is abundant evidence that investors do not make the choices we predict, the social science of household-level investment choice remains an open frontier of investment research. We still understand very little about how wealthy families become wealthy over time, or whether aversion to risk and willingness to use more complex investment instruments is more a function of who you know and what you’ve experienced than your innate set of preferences. We understand little about whether the motive to save and to ignore market price fluctuations is a function of innate preference or simply a lack of knowledge. For every ten articles spent assiduously constructing utility functions that are consistent with observed behavior, there is one article that attempts to incorporate often unobserved heuristics, transaction costs, and cognitive difference that explain asset choice and wealth accumulation.

We also see little research on the policy effects of increasing individual responsibility for investments among households that require a large human capital investment to invest effectively. Increased individual responsibility for investment decisions among a broader set of investors inevitably leads to large dispersion in the ability to comprehend financial information. Only a small subset of investors understand the basic tenets of constructing a Markowitz efficient portfolio. Half of investors surveyed by the NASD understood that stocks had higher historical returns than other investments, and roughly one in five understood what a no-load mutual fund was (NASD, 2003). Future research in personal finance may require the creative application of existing consumer choice theory. In particular, the application of information economics and human capital theory to investment choice is strikingly absent from the extant investment literature. Investment knowledge is a component of human capital that requires a potentially enormous expense of time and effort to gain a marginal improvement in investment ability. The estimated present value of benefits received from additional knowledge will vary by wealth level and initial knowledge, and the estimated costs will be a function of ability, interest, and experience. It should be expected that the majority of financial mistakes are made by those who perceive the highest cost to financial education or the least benefit. It is likely that these investors will have less education, less wealth, lower earnings, and be more isolated from low-cost information sources. If so, the potential

welfare benefits to be gained by increased financial education, securities regulation, and information disclosure are immense.

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Contact Information: Michael Finke, Ph.D., Assistant Professor, Department of Personal Financial Planning, University of Missouri, Columbia, MO 65211; Phone: 573-882-9343; Fax: 573-884-8389; Email: finkem@missouri.edu