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"Value is the undisputed champion of investment anomalies."

KEY POINTS

1. Over the period from 1991 to 2013, the average return that investors in value mutual funds actually earned was 131 bps per annum lower than the funds' reported return.
2. Because the value premium is mean-reverting, short-term trend-chasing behavior on the part of the average value mutual fund investor more than offsets the funds' outperformance.
3. Fund flow data show that trend-chasing value investors outweigh buy-and-hold value investors, implying that the value strategy might have more unused capacity than the aggregate allocation would suggest.

Woe Betide the Value Investor

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Research Affiliates is a value shop in the tradition of Ben Graham's investment philosophy. As investors, we sell the popular securities that have become overpriced and we bargain-hunt for assets that have fallen out of favor. Today, however, we must acknowledge an inconvenient truth. The excess return earned by the average value mutual fund investor has been meaningfully negative.

What's going on? How does this recent experience jibe with decades of research on the value premium? Does the negative excess return earned by value investors arise from an unrepresentative measurement period? Perhaps fees for the average value mutual fund are so high that they more than offset the value premium. The answer will not only surprise you but suggest tremendous opportunities for truly contrarian value investors. But first, you will have to suffer through a few more paragraphs to learn the punchline. After all, we do have word count targets to make.

The Value Anomaly

Value is the undisputed champion of investment anomalies. According to academic and practitioner research, value strategies have consistently delivered a premium over the capitalization-weighted market portfolio for the last 90 years. Investors have known about the benefits of value investing for nearly as long. Ben Graham and David Dodd popularized the approach in their 1934 classic, *Security Analysis*. The legendary Warren Buffett has practiced and preached long-term value investing for his entire career, now spanning more than 50 years. Basu (1977) rigorously documented the value premium. Fama and French (1992) constructed the value factor (HML), propelling value investing into the core curriculum of every business school and the value factor into every investment analytics system.

Value investing is thoroughly documented, well publicized, and widely endorsed. This raises obvious questions: Why isn't everyone a value investor? Why hasn't the smart money arbitraged the effect away? Clearly, it is not possible for everyone to be a value investor; someone has to be on the other side of the trade. Who, then, willingly or unwillingly, invests against value? Can there be so many financially naïve investors? And how many more naïve innocents can we count on to generate a meaningful value premium in the future? This last question is perhaps the most important as it casts doubt on the investment capacity of one of the most popular investment strategies.

Believers in the efficient market hypothesis see value stocks as risky and undesirable. Value investors are extracting a risk

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premium. But many practitioners who are familiar with investor psychology think of the value anomaly as a mistake that institutions and individuals make for a host of behavioral reasons. The two camps can argue endlessly. We have nothing to contribute to that disagreement. Nonetheless, both sides have a key assumption in common: Long-horizon value investors outperform (just for different reasons). What we show in this issue of *Fundamentals* is the contrary fact that so-called value investors have substantially underperformed the S&P 500 Index for the past 23 years. There is no evidence that mutual fund investors are extracting a positive value premium either by (1) bearing risk or (2) by exploiting other investors' behavioral mistakes.

Investors' Performance

Examining the history of mutual fund performance, Hsu, Myers, and Whitby (2014) find that the average value investor didn't earn anywhere near the reported value premium (**Table 1**). In fact, he or she underperformed the S&P 500 meaningfully, even before taking fees into account. How is this possible? While it is true that, on average, value managers and value mutual funds outperform the S&P 500 (by 39 bps), their time-weighted rates of return don't translate into outperformance for the investors. In fact, the average value investor underperforms a buy-and-hold investment in the S&P 500 by –92 bps. Value fund investors typically do not hold their investments. Instead, they chase trends, allocating away from value funds after a period of underperformance and towards them after a period of outperformance. In other words, average value investors do not adhere to the contrarian allocation as one would expect; they are actually trend chasing. Unfortunately for them, however, the value premium is mean-reverting. After periods of outperformance it tends to underperform, and vice-versa. Trend-chasing investors increase their allocation to value funds before (and sometimes just before) the funds reverse direction and head back, downward, toward their long-term averages. And they reduce their allocation before the funds head up again. This poor timing has cost value investors an average of –131 bps per annum.

> *"Why hasn't the smart money arbitraged the value effect away?"*

Alas, the fund manager's profession is abysmally depressing. You are regularly reminded by academic research that, on average, you destroy value, net of fees; a monkey randomly selecting stocks, or a cap-weighted index, outperforms you. (Sort of makes you question the value of your MBA degree and CFA designation.) Nor are the select few who have delivered long-term outperformance spared. New evidence suggests that your clients' decisions undo your work, so that, in the end, your contribution to their financial well-being is still quite negative. Your time-weighted returns may be superior, but the dollar-weighted, net-of-fee returns the clients actually receive are nonetheless adverse.

If you are both an academic and a portfolio manager, you may wish to examine the meaning of your life. It could be argued that both your students and your clients would be better off if they hadn't learned about the value premium and just stayed with an S&P 500 fund as Burt Malkiel and Jack Bogle have passionately advised.

The Return Gap

Russ Kinnel of Morningstar has frequently observed that the buy-and-hold or time-weighted return is typically much higher than the dollar-weighted return. In addition, Hsu, Myers, and Whitby (2014) have robustly documented this phenomenon. The writers attribute the return gap to investors' poor market timing decisions as they reallocate assets among funds on the basis of recent performance.

Table 1. Dollar-Weighted vs. Buy-and-Hold Returns[1] (1991–2013)

Value Funds	Buy-and-Hold Return	9.36%	**Investor Shortfall**
Value Funds	Dollar-Weighted Return	8.05%	–1.31%
S&P 500	Buy-and-Hold Index Return	8.97%	–0.92%

Source: Source: Hsu, Myers, and Whitby (2014).

Investors are so spectacularly bad at market timing that they routinely wipe out all, or more than all, of the outperformance produced by value-oriented managers. An investor who spurned value strategies after the bludgeoning they received during the tech rally of the 1990s lost out on the value premium's 94% run between July 2000 and June 2002. An investor who exited value funds in early 2009, after the collapse of banking stocks killed value returns, missed the 27% surge from March 2009 to April 2010. These examples are admittedly cherry-picked, but they vividly describe the average investor's behavior. Trend chasing typically results in forgone profits or outright losses.

Two Implications

What can we conclude from the observed return gap between the outperformance of the buy-and-hold value strategy and the underperformance of the average value investor?

Mean-Reverting Value Premium

First, this result tends to corroborate the finding, documented in Hsu (2014), that the value premium is mean-reverting. Apart from needlessly incurring transaction costs, the investor's trend-chasing allocation would not be harmful if the value premium were constant over time. But the mean-reverting value premium has had a whiplash effect on the average value investor, whose philosophical commitment to value investing is belied by trend-chasing allocations.

> *"Trend chasing typically results in forgone profits or outright losses."*

Value Strategy Capacity

Second, value investors have not earned a positive premium. This observation has very deep implications. If average investors have not extracted positive dollar alpha from value strategies, then it is specious to claim that investors on the other side of the value trade are being systematically exploited and will ultimately be eliminated. Indeed, given that the average value investor's dollar alpha is negative, at least some of their counterparties must be making a handsome profit! This reasoning challenges the prediction that the free lunch from value investing might already have been arbitraged away by the significant allocation to value funds. Quite the contrary, fund flow data show that trend-chasing value investors far outweigh buy-and-hold value investors. Thus it would appear that, on average, value investors are supplying a premium to other market participants rather than collecting one. The value strategy may have far more unused capacity than we suspected.

A Pyrrhic Victory

It is small consolation that growth investors' dollar-weighted returns are even worse. In fact, large or small, value or growth, investors' dollar-weighted returns are overwhelmingly lower than the fund managers' buy-and-hold or time-weighted returns. **Table 2** shows the dollar-weighted return, the buy-and-hold return, and the gap between them for different types of funds.

Across all funds, investors earned an average dollar-weighted return of only

Table 2. Shortfall Based on Fund Types (1991–2013)

Fund Classification	Dollar-Weighted Return	Buy-and-Hold Return	Shortfall
All Funds	6.87%	8.81%	−1.94%
Growth Funds	5.22%	8.38%	−3.16%
Value Funds	8.05%	9.36%	−1.31%
Small-Cap Funds	8.23%	9.78%	−1.55%
Large-Cap Funds	6.76%	8.66%	−1.90%
S&P 500	–	8.97%	–

Source: Hsu, Myers, and Whitby (2014).

6.87%, 194 bps less than the 8.81% that managers achieved on a time-weighted basis. To be clear, if investors bought mutual funds and held them throughout the measurement period, they, too, would have earned 8.81%. The 1.94% shortfall is due to poor timing on the part of investors (not managers).

Value investors did better; they underperformed their respective funds "only" by 1.31%. Growth investors, on the other hand, were ravaged by their trading behavior, losing a whopping 3.16% on top of growth strategies' general underperformance relative to value (and, in fact, relative to the S&P 500). It's not a pretty picture. All of the differences between dollar-weighted and buy-and-hold returns in Table 2 are highly significant, both statistically and economically.

Why might growth investors do so much worse? Apparently the same investors who tend to chase high-flying growth stocks are also the ones who chase high-flying growth managers—in both cases to their own detriment. It is possible that growth mutual fund investors are less financially sophisticated on average; the evidence that value strategies outperform growth is widely taught in business schools and professional credentialing programs.

> *"The value strategy may have far more unused capacity than we suspected."*

Perhaps, then, less sophisticated investors are more vulnerable to their natural trend-chasing instinct and, therefore, to cognitive errors and behavioral biases that show up in their trading. Similarly, it seems reasonable to suppose that investors in high expense ratio funds are also likely to be less financially sophisticated. It would be unsurprising if investors in high expense ratio funds suffered more from poor timing decisions. Indeed, this is exactly what Hsu, Myers, and Whitby (2014) find. **Table 3** shows that investors in funds with the highest expense ratios experience a dollar-weighted return fully 4.01% less than their respective funds' time-weighted return. Investors in funds with low expense ratios experience a better (but still bad) shortfall of 1.34% due to their trading in and out of the funds.

In contrast, value investors, index fund investors, and institutional fund investors tended to do better, in terms of the return gap they experience. This is intuitive in light of our interpretation on investor sophistication. We emphasize that, on average, all mutual fund investors underperform the buy-and-hold return; the gap between their actual dollar-weighted returns and the funds' reported time-weighted returns is always negative on average. Our research indicates that the more sophisticated investor groups—for example, value and institutional fund investors—just display a smaller-than-average return gap.

In Closing

There is an enormous gap between mutual funds' time-weighted rates of return and the dollar-weighted returns that investors actually receive. Although numerous researchers have carefully documented this phenomenon, the investment industry has largely ignored its most significant implication. If value investors are losing money in mutual funds, then it seems most unlikely that value investors' transactions will arbitrage away the value premium. In fact, it is rational to suspect that the average trigger-happy value investor may

Table 3. Shortfall Based on Expense Ratios (1991–2013)

Expense Ratio	Dollar-Weighted Return	Time-Weighted Return	Shortfall
Low	7.88%	9.22%	−1.34%
2	6.93%	8.85%	−1.92%
3	6.07%	8.35%	−2.28%
4	4.80%	7.84%	−3.03%
High	2.87%	6.88%	−4.01%

Source: Hsu, Myers, and Whitby (2014).

be funding the value premium. Certainly their trading activity accentuates the volatility of the value cycle.

The return gap also provides us with two useful insights.

1. The trend-chasing habit has been detrimental to the average fund investor even if he or she invests in outperforming strategies executed by skillful managers. In our assessment, a trend-chasing allocation process, combined with cyclical (mean-reverting) style or strategy performance, has contributed most appreciably to the observed return gap. This interpretation almost surely applies as well to institutional investors; it is a public secret that consultants disapprove of but nonetheless go along with clients' penchant for hiring "hot" managers only to fire them after three years of lackluster results (West and Ko, 2014).
2. Financially less sophisticated investors—those who are attracted to active growth funds with high expense ratios—experience the greatest return gaps over time. Thus consultants and financial advisors may wish to help put into place an investment governance structure that discourages clients from tactically allocating their positions unless they are financially very educated and demonstrate the ability to overcome the behavioral bias for trend-chasing.

Appendix: Measuring Dollar-Weighted Average Returns

The time-weighted or buy-and-hold return of a value fund is easy to calculate: The geometric average of its reported returns is what you would have earned had you bought in at the beginning of a period and never sold. But what if you had moved money in and out of the fund? Then you need the dollar-weighted average return to know what your portfolio actually earned.

Hsu, Myers, and Whitby (2014) examine the dollar-weighted average return of investors in mutual funds using the CRSP Survivorship-Bias-Free U.S. Mutual Fund Database. The funds' stated benchmarks reliably indicate whether they should be classified as value or growth and small-cap or large-cap. Using the methodology set forth in Dichev (2007), the authors use the funds' external cash flows (that is, the aggregate contributions and distributions) and the reported returns of each portfolio of mutual funds to calculate the internal rate of return. By definition, this equates to the dollar-weighted return, and it represents the return the average investor actually achieves—the investor's bankable return.

Endnote

1. The dollar-weighted return, which takes into account the timing, direction, and magnitude of contributions and withdrawals, is the return the investor actual receives. The buy-and-hold or time-weighted return, which is used in performance reporting, eliminates the impact of client-initiated cash flows. If an investor buys a fund and holds it, making no contributions or withdrawals during the measurement period, then the dollar-weighted return equals the time-weighted return.

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Disclosures