HARNESSING BEHAVIORAL FACTORS IN THE INVESTMENT PROCESS

Behavioral Factors for Picking Equity Managers and Stocks

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Behavioral finance is sweeping through the financial services industry. Financial advisors are the furthest along, introducing these concepts into their practices, including needs-based planning, outsourcing non-core activities such as investment management, and creating a reassuring behavioral experience for clients. The advisors who have made this transition, according to a recent report by Cerulli Associates, grow faster and end up with wealthier, more loyal clients.1 Such a transition allows advisors to provide client value relative to their robo-advisor and index fund competition, as confirmed by Vanguard, Russell Investments, and others.2 Howard and Bunker (2018) provide a blueprint for transitioning to this type of advisory model.

Active equity investment managers face a challenge not unlike that faced by advisors, with large outflows over the past 10 years, roughly matched by low-cost index fund inflows. Active equity must deliver value relative to index offerings. I believe the best way to accomplish this is to harness behavioral factors in each aspect of the investment process, similar to how successful advisors have incorporated behavioral factors throughout their practices. Some of the material in this article is drawn from Howard and Voss (2019).

BEHAVIORAL FACTORS IN ACTIVE EQUITY SELECTION AND EVALUATION

The goal of active equity management is to generate returns for investors that exceed the returns earned by simply and cheaply investing in an index fund. To many it seems logical to select funds that have achieved this goal in the past. Virtually everyone, professional or individual, relies heavily on a fund’s past performance when deciding upon the fund in which to invest.

The problem is that past performance is a noisy, often misleading, predictor of future performance. Every investment product is required to disclose exactly this: Past performance is not indicative of future performance. Reams of academic research confirm this to be the case.

But despite this overwhelming evidence, past performance is the primary criteria used for picking funds. This is an example of the representativeness bias, where decisions are made based on characteristics that have little or no predictive power but are emotionally appealing. And this bias is nowhere stronger than it is in investment markets.

The lack of predictive power is the consequence of two drivers, one an industry structure and the other the nature of investment returns themselves.

CLOSET INDEXING FACTORY

The first driver is the powerful closet indexing factory, an outgrowth of industry incentives. Wishing to grow assets under management (AUM), funds respond slavishly to the modern portfolio theory–based emotional catering tools of minimizing volatility, tracking error, and style drift. A small fund with good performance wishing to grow is strongly incentivized to submit to these performance criteria, thus turning itself into a closet indexer and underperforming because you cannot beat the benchmark if you are the benchmark. In this way, poor performance follows superior performance as night follows the day (well not quite this predictable but awfully close). Past performance thus does not predict future performance.3

IMPORTANCE OF POSITIVE RETURN SKEWNESS

The second driver is the statistical nature of investment returns. Bessembinder (2018) finds that the reason the average stock generates a positive return is due to the positive skewness of returns. The median monthly stock return is near zero, but the size of positive returns exceeds the absolute size of negative returns, so the average stock return is positive. Bessembinder is one of the first researchers to isolate the critical importance of positive skewness for investment performance.
stock return tail events are the result of strong investor emotional reactions, both positive and negative, to market events. Thus, behavior is an important determinant of the shape of return distributions.

Fund performance relative to its benchmark displays positive skewness as well. Kaplan and Kowara (2018) dramatically demonstrate this. Based on a worldwide sample of 5,500 active equity mutual funds, they find two-thirds outperform their benchmarks, gross of fees, over the 15-year period of 2003 through 2017. But the most surprising result was that the typical outperforming fund underperformed for a period of 9-12 years within this 15-year sample period. This means that the outperformance takes place in only three to six years out of a 15-year holding period.²

Kaplan and Kowara (2018) found mirror results for the typical fund that underperformed during this 15-year time period: it outperformed for a period of 9-12 years. They conclude that three-, five-, and 10-year performance is an unreliable predictor of a fund’s long-term performance and should not be used. The positive skewness is so important for long-term fund performance is hidden for extended periods and the benefit of it can only be harvested with long holding periods.³

The evidence is clear: Past performance is an unreliable predictor of future performance. It turns out that fund manager behavior is predictive of future performance where past performance is not.

**MANAGER BEHAVIOR AND STRATEGY CONSISTENCY**

An important fund manager behavior is the consistent pursuit of a narrowly defined strategy. The challenge is how to measure consistency. A common approach is to demand consistent returns over time. But I showed above that the best funds outperform at times and underperform at others. This is emotionally difficult for investors, but it is an unavoidable fact when investing in successful active equity funds because strategies don't perform well in all kinds of markets.

Strategy consistency can be measured by focusing on the type of stocks in which a manager invests. For example, is a value fund invested in value stocks, or is it chasing an unrelated trend such as favoring growth stocks?

Using a top-down process, I like to evaluate the consistency of managers by comparing their holdings to other managers pursuing the same self-declared strategy. A pool of stocks most held by these strategy managers is created, referred to as one's own-strategy stocks. For a manager following a valuation strategy, for example, the pool comprises stocks most held by other valuation funds.⁶

It makes intuitive sense to use a screen driven by those who are looking for similar stock characteristics. It is worth noting that strategy stock pools are in constant motion, because managers make buy and sell decisions based on ever-changing economic and market conditions. Unlike the fixed size or value boxes of the style grid, this produces a dynamic process in which stocks of most interest to the manager are changing constantly. That is, the best results are obtained when the investment team moves about the equity universe in pursuit of own-strategy stocks.

This is in stark contrast to an externally imposed style box that requires funds to limit their choices to a range of value or size in stocks.

Focusing on similar strategy stocks is logically appealing and it leads to better fund performance. Active equity funds holding the most similar strategy stocks (figure 1, quintile 5) outperform those holding the least similar strategy stocks by 212 basis points (bps). This confirms the advantage of focusing on stocks most held by others following the same strategy. The collective intelligence of active equity fund managers provides valuable information for identifying the most attractive pool of stocks upon which to focus.

The strategy-consistency results reported in figure 1 are in stark contrast to what has been uncovered regarding style-box consistency. Wermers (2012) finds that equity funds experiencing the largest style drift outperform those with the least style drift by about 300 bps. Asking fund managers to stay style-box consistent hurts performance because it forces them to invest in stocks outside their own strategy simply to track the style benchmark. Style-box consistency begets strategy inconsistency and, in turn, hurts performance.

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**U.S. ACTIVE EQUITY FUND ANNUAL ALPHA BY STRATEGY CONSISTENCY QUINTILE**

![Figure 1](image-url)

Strategy consistency is measured as the percentage of own-strategy stocks held by the fund. Sample includes U.S. equity funds from 1997-2017, resulting in 288,000 fund-month observations. Sources: Morningstar and AthenaInvest

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HIGH-CONVICTIOS STOCKS
Equally important is to allow managers to focus on their best idea stocks, also referred to as high-conviction stocks. One of the more interesting papers to demonstrate this is Cohen et al. (2010), who find, “... the U.S. stock market does not appear to be efficiently priced, since even the typical active mutual fund manager is able to identify stocks that outperform by economically and statistically large amounts.” These results, presented in figure 2, are based on the performance of the typical manager-ranked best ideas, as determined by relative portfolio weights. Figure 2 reveals that the best idea generates an average 10-percent annual alpha. Performance declines monotonically to around a 2.5-percent alpha for the 10th best idea stock. Thus, equity managers are superior stock pickers, can rank their best ideas, and generate large excess returns on their top stock picks.

The relative weight methodology of Cohen et al. (2010) above can be used to rank the return potential of each stock held by an active equity mutual fund. The impact on a fund’s portfolio return of investing in highly ranked stocks (i.e., high-conviction stocks) is shown in figure 3. If a fund commits an additional 10 percent to its top 10 stocks, portfolio return improves by 61 bps. In turn, an additional 10 percent committed to the next 10 highest-ranked stocks bumps up portfolio return by 23 bps. However, if more is committed to stocks ranked lower than 20, fund returns decline, as indicated by the right-most bar in figure 3.

As demonstrated above, there is a performance advantage if a fund invests exclusively in high-conviction stocks. However, the typical mutual fund holds 75 stocks (the median number of holdings) and is thus badly overdiversified, investing in three times more alpha-destroying stocks than alpha-building stocks. This provides further support for the argument that active equity funds should not grow too large (no larger than $1 billion in AUM) nor be asked to minimize tracking error, style drift, and volatility—all of which encourage investing in non-high-conviction stocks.

Funds that consistently pursue a narrowly defined strategy while taking high-conviction positions perform best. Fund manager behavior, in terms of consistency and conviction, is predictive and past performance is not. This captures the primary behavioral concept with respect to fund investment management: Anything that restricts a fund’s ability to invest in best ideas hurts performance. In other words, active equity managers should be free to roam about the equity universe in the consistent pursuit of their investment strategies.

In practical terms, pick six to eight funds, each of them pursuing a different strategy, smaller (less than $1 billion in AUM), experiencing larger tracking error and style drift, and holding a smaller number of stocks (fewer than 30). As a secondary criterion, pick those funds with strong one-year returns. This is the only performance measure that has been shown to be predictive of future performance, no doubt due to the well-established existence of short-term momentum in equity markets.
BEHAVIORAL FACTORS IN STOCK PICKING

I have just described the macro behavior of active equity fund managers that is predictive of future performance: consistent pursuit of a narrowly defined strategy while focusing on high-conviction positions. But as we drill down into the stock-picking process, a number of behavioral considerations can improve performance. The following ideas provide an in-depth understanding of how to build your own individual stock portfolio as well as provide insight into how active fund managers are able to generate superior returns by focusing on behavioral factors.

BEHAVIORAL PRICE DISTORTIONS

The markets are awash with excess return opportunities as emotional crowds drive individual stock prices as well as broad market indexes away from underlying fundamental value. The challenge is to filter out the signals from the considerable underlying noise. Fundamental analysts accomplish this by conducting careful analysis of a company’s financial and competitive situation. Big-data analysts test their ideas on as long and large a database as they can assemble, looking for excess returns that are, ideally, both economically and statistically significant. In either case, an investment methodology is created in order to harness the mispricings that are uncovered.

The focus is on finding behavioral price distortions that are measurable and persistent. Fundamental and objective measures are used to accomplish this, which means that these play a secondary role to behavior in the investment process. Fundamental analysts view themselves as attempting to gain an information advantage over their competitors by identifying individual stocks that are mispriced.

Big-data analysts more directly focus on behavioral distortions. A typical starting point might be one or more of hundreds of statistically significant anomalies or an idea gathered from articles, conferences, other professionals, or other sources. Smart beta is an example of this approach in which a methodology is built around one or more of the anomalies. Other active managers may start with this approach but then supplement it with their own unique management recipe for harnessing the behavioral distortion.

THE ARBITRAGE CHALLENGE

Once a strategy is built, the problem going forward is performance erosion due to arbitrage. Once implemented, it is possible that others will begin pursuing the same strategy and by trading alongside can reduce or even eliminate the opportunity uncovered in earlier research. Proponents of the efficient market hypothesis contend that such arbitrage-motivated trading means all superior return opportunities eventually are eliminated. Actual evidence paints a much more nuanced picture.

Pure arbitrage occurs when a synthetic Treasury bill can be created using various investment instruments and then combined with a long (or short) actual T-bill. If prices of the actual and synthetic T-bills are not equal, a risk-free, guaranteed profit is possible. Arbitrageurs respond quickly. Thus, pure arbitrage opportunities are available only to the largest and fastest participants, so most investors cannot profit from these price distortions.

An example is the pure arbitrage opportunity underlying the well-known Black–Scholes option-pricing model. When continuously writing the correct number of at-the-money calls and at the same time holding the underlying security, a synthetic T-bill emerges. Financing this position with a short T-bill creates a guaranteed profit if the security, option, and T-bill are not correctly priced. Because all three instruments are highly liquid, this opportunity is quickly arbitraged away.

RISKY ARBITRAGE

Risky arbitrage involves taking on short-term investment risk, thus it is less effective in eliminating price distortions. Almost all so-called arbitrage in the financial markets is risky, save for a few situations in the options, currency, and other markets. Although it is possible that investor arbitrage activity will eliminate price distortions, it is not very likely. Arbitrageurs as a group are looking for close to pure opportunities, so when these opportunities turn risky, investor interest wanes. For most potential arbitrageurs, if it takes days, weeks, or months to reap the gain, they become increasingly uninterested in pursuing the opportunity.

McLean and Pontiff (2015) examined the market’s ability to eliminate returns. If arbitrage is effective, then when anomalies are made public via academic publication, the superior returns should disappear. But they found that of 82 anomalies studied, the average post-publication excess return decay was 35 percent, meaning investor pressure eliminated only one-third of these returns.

LIMITS TO ARBITRAGE

A large body of academic research has explored the question of why mispricings are not fully eliminated by arbitrage activity and this has identified the state of the market along with security characteristics that make arbitrage difficult and expensive to pursue. These are referred to as limits to arbitrage (LTA). To date, the LTAs that have been uncovered include higher market sentiment, lower institutional stock ownership, greater idiosyncratic risk, small number of stocks available for short sale, low trading liquidity, high transaction costs, smaller stocks, low profitability, non-dividend paying stocks, and greater financial distress.

As can be seen, there are numerous LTAs standing in the way of fully eliminating price anomalies, or what we
refer to as behavioral price distortions. There is every reason to believe that LTAs will continue to exist into the foreseeable future.

After being verified, an investment idea has a good chance of continuing to work once implemented. The wider the LTA moat surrounding the opportunity, the more likely it is to survive. There is a rationale for why each LTA exists. For several, investor emotions are the primary reason. To be successful as an investment manager you must not view the LTAs defending your portfolio in the same way as do arbitrageurs. That is, where they are unwilling to tread, you rush in to reap returns. In the broadest sense, you continuously hold a contrary view of markets and securities and take opposite positions from those who shy away from emotional triggers.

HARDNOSED BUYER, EMOTIONAL SELLER

Investors can be hardened when making buying decisions, because they have carefully considered dozens of candidates and invest only in best idea stocks. But once the stock enters the portfolio, there is an emotional transformation. It becomes one of the family. Heaven forbid if it ever goes down. “How could you do this to me!” the investor thinks. “I examined you carefully, even meeting with company management, and this is what you do to me!”

Emotional selling decisions are a major problem for individual and professional investors alike. Essentia Analytics has studied manager sell decisions and finds they are affected by recent market movements, to the detriment of portfolio returns. They also find that there is a cycle in which a stock’s alpha reaches a peak and then declines well before the stock is sold. It is hard to usher a family member out of the portfolio (Woodcock et al. 2019).

Take the emotions out by developing an objective selling rule, preferably before the stock is even purchased. This reduces the many cognitive errors surrounding this decision and leads to improved fund performance. The goal is to become as hardened about selling as about buying.

CONCLUSION

Just as successful advisors create a reassuring behavioral experience for their clients, investment teams can infuse behavioral factors throughout the investment process as a way to improve performance. From focusing on the manager behavior of consistently pursuing a narrowly defined strategy with taking high-conviction positions to developing an objective selling rule, viewing the entire investment management process through the lens of behavior results in improved investor outcomes.7

When constructing an active equity portfolio, pick six to eight funds that each pursue a different strategy, are smaller (less than $1 billion in AUM), experience larger tracking error and style drift, and hold a smaller number of stocks (fewer than 30). As a secondary criterion, pick those funds with strong one-year returns. This is the only performance measure that has been shown to be predictive of future performance, no doubt due to the well-established existence of short-term momentum in equity markets.

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ENDNOTES


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