Is Behavioral Finance Important? Is it relevant? Can its intriguing research results be successfully applied in stock selection and portfolio management? I recently had the opportunity to discuss these topics with Brian Bruce and Doug Stark about their investment management methods at Hillcrest Asset Management. Brian and Doug founded Hillcrest on January 1, 2008 to combine their expertise in behavioral finance and equity portfolio management. Both Brian and Doug are recognized experts in the use of behavioral finance and its application to investment management. Their bios follow the Q&A, below.

**You emphasize the importance of behavioral finance in your stock selection and portfolio management. Why?**

Unlike many other managers, Hillcrest utilizes behavioral finance methods in each step of our process. It forms the foundation of our investment philosophy and guides us as we analyze each company's valuation, growth, sentiment and fundamentals as well as portfolio construction.

Our studies have demonstrated that most all stocks follow the same behavioral cycle of greed and fear that the broad stock market follows. Unlike textbook theories, stocks almost never trade at fair value. They trade below fair value generally in reaction to poor economics in the firm and trade above fair value when good things are happening while experiencing a growth phase. Hillcrest is vigilant in its use of this cycle and buys when a stock is attractively valued with good growth prospects. It is how we implement this philosophy using behavioral insights that differentiates our approach.

We take advantage of behavioral biases in constructing our proprietary valuation analysis. Most investors look only at an absolute valuation using ratios like P/E, P/EV or discounted earnings over price. The problem with these simpler methods, for example, is that small cap valuations are non-linear due to a higher percentage of small cap companies going out of business. We construct non-linear valuation metrics that consider more subtle effects. In our fundamental analysis we look for market over and under reaction to news and information flows from the company. We are able to differentiate between under/over reaction and develop a proper response to new information.

Then, we consider growth prospects. Our growth analysis takes into account two behavioral effects: expert overconfidence and the base rate effect. As you know, analysts are the apparent experts who are paid to provide recommendations on companies. Our methods adjust for the inevitable overconfidence which occurs among analysts. The reason is that they ignore the base rate effect. In other words, over time, how accurate are analysts. The base rate of analyst accuracy can be seen in a recent update of a
classic study that looked at analyst’s quarterly forecasts and compared them to the actual earnings reported from 1973 through 2010. Estimates were made by analysts in the previous 3 months and analysts could revise their forecasts up to 2 weeks before the end of the quarter. In all 216,576 consensus forecasts were used. The results were startling. Analysts’ estimates were sharply and consistently off the mark, even though they were made less than 3 months before the end of the quarter for which actual earnings were reported. The average error was a whopping 40% annually. With this knowledge our estimates of future growth rely on a variety of factors and not simply analyst forecasts.

A key to Hillcrest’s successful process is the use of behavioral sentiment. We were pioneers in creating one of the first global behavioral models of analysts utilizing earnings estimate data. This work continued with Brian’s book *Analysts, Lies and Statistics* and is the basis for our sentiment work that we now do at Hillcrest. Our sentiment analysis finds turning points in a stock’s behavioral cycle and signals us to buy and sell at the optimal time.

Portfolio construction: We avoid the behavioral effect called “framing” in our portfolio construction. Framing is when you form a judgment based on how you view the data or how it is presented. We do not view risk as historical covariances or correlations. We do not expect that the correlation between a stock and the benchmark during the past three years will be the same during the next three years. This leads us to control risk by looking at other factors. We look at deviations of sectors, industries and stocks relative to the benchmark. We all look at portfolio characteristics and BARRA/Northfield style factors to make sure that we do not take variations from the benchmark unless we have a forecast or alpha.

**Critics of behavioral finance point out that though interesting, it is difficult to apply these theories to actual money management. How to do you respond?**

We are aware of these opinions; however our approach is based on our research and our proprietary modeling that creates an investment process that properly judges fundamentals and sentiment for each stock. We analyze the market specifically looking for those instances, or factors, where human judgment – behavior - plays a large component. An example is our research on analyst’s estimate revisions, where the expectation is that the changes in estimates should be quickly incorporated into stock prices, yet our research has determined that estimate revisions are still adding value for months after the estimate was made. The best explanation 3 for this discrepancy is that analysts make numerous behavioral mistakes including “Anchoring and adjustment” and “Representativeness”, which cause the estimated change to usually be understated, thus allowing for firms like us to use the data to show solid performance over many years.

**Can you offer an example of a behavioral effect that your methods capture?**

We have done extensive research and found that growth in the future is best predicted by combining historical growth and expected growth. We use annual earnings information looking two years back and two years forward (using analyst’s estimates). This provides us with an estimate of the annual growth rate of the company. We modify (a process we call adapting) the factor by an analysis of how consistent the growth rates have been, as we would prefer companies with steady growth. We do this by giving a bonus to the companies with consistent yearly growth over the four year time period and a penalty to companies with highly variable growth rates. Essentially we are answering two questions: what is the effect and how would others value it?
How long will you be able to exploit such opportunities?

Behavioral Finance takes advantage of decision errors and behavioral biases of investors. Interestingly, these errors are often repeated. A great example of this is the value effect. Value works over long periods of time because it doesn't work over every time period. Despite the evidence first produced in 1962 and repeated in thousands of studies up to today, investors still fall victim to the base rate bias. They ignore the base rate (the long term returns to value stocks) when making investment decisions.

The problem is that behavioral errors are built into our genes. We have millions of years of evolution as hunter/gatherers where many of these behavioral biases were actually advantageous. However, we have had only a few generations as investors watching computer screens to overcome millions of years of evolution.

Do your risk management processes also incorporate behavioral finance methods?

Yes. Others managers fall victim to the framing effect where you frame your outlook based on how information is presented. The classic example is using historical data to determine risk in portfolio. You frame expectations of future risk based on the past. The problem is when the future is not like the past and, unfortunately, this occurs more often than not. Hillcrest does not use past data to determine future risks. Instead, we realize that risk is relative to the benchmark and make sure that any bet relative to the benchmark is intended. We look at the weights of sectors, industries and stocks along with characteristics and BARRA/Northfield style factors to insure that bets relative to the benchmark are where we produce alpha.

Are the small stocks you hold participating in the globalization of equity markets now?

Some are and some are not. We look for good companies with the best valuations. Sometimes those good companies are global and sometimes they aren't. We own stocks like Atlas Worldwide (AAWW) that ships globally and is growing due to the globalization of the economy, however we also own companies like Sirona Dental and Sonic Automotive that derive revenues solely from the US.

How important is fundamental research in your selection of stocks?

It's critical, and as such all members of the investment team are involved in the research process. We break our research into three areas: 1) Quantitative 2) Fundamental and 3) Post investment analysis. The quantitative research focuses on areas where our expertise in behavioral finance finds opportunities among profitable companies across the entire universe of potential investments. The members of Hillcrest’s investment team have been doing quantitative research for over 20 years, and have found that many of the basic ratios and factors have been arbitraged past the point of being profitable. We thus focus most of our energy on finding new ways to look at investment ideas, what we call adaptive factors. The adaptive factors start with basic value, growth or sentiment factors and then “adapt” them to more accurately reflect a behavioral change or market principal. The adaptive changes are usually combining multiple factors to create one adaptive factor, or using only the portions of the data (usually the tails of a distribution) that have predictive powers. But in the end, our model is a blunt knife. It allows us to determine if the company is a good investment and is appropriate for further analysis.
Once we identify a list of promising companies, fundamental analysis helps us pick the best ones. The Fundamental research is ongoing and focuses on companies already in the portfolio, and those companies that are attractive in the quantitative process. The Fundamental research focuses on specific companies looking for data items that cannot be accurately measured by the quantitative process and a determination of the true growth possibilities of the firm. Our fundamental research is very specific to individual companies and sectors. Each company that we review, because it is in our portfolio or ranked highly in our quantitative process, requires a unique set of data inputs. For example; a fast growing oil exploration company will require an analysis of drilling rigs, success ratio of exploration and analysis of future production; in contrast a health care company will require a very different set of data items. The data sources are usually found from Factset, company reports, analysts’ reports, internet search, financial papers, academic research, company presentations, and earnings call transcripts. We do not visit companies as we have found this to cause many behavioral problems associated with representativeness and anchoring and adjustment.

After the fact we also do a comprehensive attribution analysis to determine the areas where we produce our value added. We have been doing attribution from inception and have found that over long time periods about half the value comes from the quantitative process identifying the tail of best investments and about half from our analysis of fundamentals.

Is there a recent example where you found behavioral finance useful as a guide to stock selection?

During the Gulf of Mexico oil spill one of these behavioral opportunities presented itself. Beyond the tragic death of the workers, the news characterized the spill as close to Armageddon, with serious commentators predicting the gulf would become a “dead zone”. In addition, the visuals were compelling with a camera constantly showing the well leaking thousands of gallons of oil every minute. At Hillcrest one of the prime duties of a fundamental analyst is to be skeptical and try to find information against the common beliefs, this is where we found our opportunity. Some experts (who never made it on national TV) claimed the spill would have a minimal long term effect on the gulf, as the important factor in oil spills is the percentage of oil relative to the size of the body of water. This ratio is what made the Exxon Valdez spill so severe as the spill was inside a small bay. The gulf is a very large body of water, and the ratio was less than 1 part per billion, or as the expert described it "a drop of oil in a bathtub of water". The news was fixated on the numerator of the ratio (gallons of oil), and ignored the denominator (size of gulf), this was a classic behavioral case of Framing Bias where how the information is presented causes a failure to reach the correct conclusion.

Our quantitative process often highlights these types of behavioral errors as the price falls without a subsequent decline in the fundamentals. In the gulf situation a company that produces fish oil partially from fisheries in the gulf (Omega Protein), was suddenly attractive having fell from around $7 to under $5. If the Armageddon scenario was correct the fall was warranted, but our behavioral analysis showed the effect was probably temporary, we purchased the stock which increased 150% in the next 8 months.
Biographies

Brian R. Bruce, CEO & Chief Investment Officer

- Former Chief Investment Officer at PanAgora Asset Management, a $24 billion Putnam subsidiary, where he created, managed and closed first quartile small cap core and small cap value funds
- Founding Editor of Journal of Behavioral Finance
- Former Professor at Southern Methodist University
- Co-authored with Harvard Business School Professor, Mark Bradshaw
- Co-founder of Institute of Behavioral Finance

Douglas E. Stark, Managing Director of Portfolio Management and Research

- Formerly Director of Research at Martingale Asset Management, a firm focused on behavioral finance
- Leading model builder at State Street Global Advisors where he was responsible for research and development of new products and portfolio management techniques
- CFA with MBA from Columbia University
About Hillcrest Asset Management

Founding Partners Brian Bruce, Doug Stark, Brandon Troegle along with Rick Wilk and the portfolio team craft their combined behavioral finance expertise into all portfolios. Results reflect Hillcrest’s proprietary selection processes. The team has a long history of success managing small cap stock portfolios. Hillcrest remains guided by a fundamental belief that prices vary, sometimes significantly, away from fundamentals. Also, prices are influenced by emotions and fears. Hillcrest aspires to continue to develop proprietary behavioral models to enhance its fundamental research methods.

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