

# Beyond fear and greed: Enhancing objectivity in the investment process

All investors make mistakes caused by their emotions. Professional money managers attempt to develop processes that – theoretically, at least – remove emotion from investment decisions. In 2012, UBS's US Intrinsic Value Equity team put that assumption to the test by examining its own investment process for signs of counterproductive behaviors. The results led to the development of new practices designed to diminish the influence of emotion on the investment process and to identify market mispricings caused by behavioral biases.

Examples of the effect of regret aversion, disposition effect and loss aversion on performance over a 17-year period of actual buy, sizing and sell decisions in the US Large Cap Equity portfolio. Findings represent opportunities to capture incremental alpha and return by overcoming behavioral tendencies. The benefits indicated are the results of rigorous analysis and represent statistically significant targets of improvement. They are not guaranteed.

The impact of regret, disposition effect and loss aversion on performance

**Behavior: Regret aversion**

Regret aversion was observed in the portfolio in the tendency to not reach full position weight in a timely manner. Feeding these winners sooner can add around **75 basis points** of alpha annually.

**Solution:** Establish equal active weight as the default initial portfolio weight.

**Behavior: Disposition effect**

Disposition effect was observed in the portfolio in the tendency to sell younger winners too quickly. Holding these positions longer and capturing their full alpha can add around **140 basis points** of alpha annually.

**Solution:** Slow down. Allow the analyst to update the model and take potentially improving fundamentals into account.

**Behavior: Loss aversion**

Loss aversion was observed in the portfolio in the tendency to sell older losers too slowly. Eliminating this unproductive behavior can add about **110 basis points** of alpha annually.

**Solution:** Stop-look. Re-evaluate the thesis of older losers. Sell if the original thesis is not intact.

Behavioral finance research has identified many ways investors allow emotion to get in the way of rational decisions to their financial disadvantage. In their studies, behavioral experts usually focus on the foibles of the individual investor. Does this mean that trained professionals aren't prone to dysfunctional behaviors, such as selling winners too soon, or holding on to a losing stock too long in the irrational hope that it will reverse its losses, or that they never hesitate to add to a winner out of the misguided regret that they didn't buy more in the first place? Many professional investors believe that a formal investment process renders them immune from judgment-distorting emotions. That mistaken belief almost certainly detracts from performance.

### Quantifying the effect of behavioral biases

In 2012, the US Intrinsic Value Equity team began a behavioral examination of investment decisions made over approximately the last 17 years in its flagship US Large Cap Equity portfolio. With the help of an outside consultant, it developed a custom behavioral attribution analysis of the portfolio decision-making process in each of three categories: buying, selling and sizing. The goal was to find quantitative evidence of behavioral biases and develop a process to minimize or eliminate them.

Grounded in 30 years of price-to-intrinsic value investing, the team's core philosophy has always been to identify and capitalize on market mispricings caused by the unchecked emotions of other investors. For the first time, the analysis of the process would measure how human behavioral tendencies and emotions like fear and greed affected the portfolio's performance.

From a naïve perspective, an easy conclusion was that everything was working fairly well. Over the long term, the team had outperformed by about 1.5%. They could see what had worked and what had not worked at the sector and stock selection level, but there wasn't a clear message from a standard performance attribution identifying how we could improve. By digging in and analyzing, they found that while they were doing well, they could do much better if they improved in a couple of very specific areas. When they separated performance attribution into three areas, buy, sell and sizing, the picture started to get much more focused. The buy decision was very strong. That is where most of the alpha was derived. The sell decision added value, but there were clear opportunities for improvement. The position sizing detracted. This was clearly an area where there was alpha leakage.

### Diagnosis: The buy

Buy decisions looked consistently strong. A winning buy is one initiating a position that ultimately outperforms its sector, factoring in subsequent additions, trims and the final sale. A losing buy underperforms under the same analysis. During the period under analysis, buy decisions consistently contributed to annual portfolio performance.

### Diagnosis: The sell

Sell decisions provided solid proof that emotion influenced the investment process, and offered clear opportunities to improve performance. Sell performance was analyzed over two holding periods — those shorter than the average 22-month holding period and those held for a longer period. Sales of younger positions (trims and complete sells) are considered effective if after the sale the stock underperforms the portfolio. A stock that outperforms after it is sold suggests that the position was trimmed or liquidated before the full alpha was captured. Holding on to an older position is considered effective if it outperforms the portfolio from the day it becomes 'seasoned' at 23 months until it is sold. Underperformance suggests that these positions are being held beyond the information advantage of the buy ideas.

A primary opportunity for improvement was evident in the pattern of selling seasoned losers, especially those that displayed higher-than-average volatility. It was a textbook case of *loss aversion*, the innate tendency to allow one's dislike of a loss to cloud judgment.

Practically all investors can identify with the urge to hang on to losing stocks in the irrational hope that the price will recover if they just wait a while. A 1999 study found that investors were more likely to sell stocks that had gone up in value from the purchase price than they were to sell stocks that had fallen in value. This urge to sell winners is sometimes referred to as the *disposition effect*. There was no rational explanation for the tendency, as the average performance of stocks that investors sold was better than for those they held on to.<sup>1</sup> Behavioral finance research suggests that for almost all of us, the pain of a loss is stronger than the pleasure of a gain.<sup>2</sup>

Both the tendency to sell younger winners too soon and older, volatile losers too late reduced portfolio performance. To capitalize on this insight, any name displaying particular

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Past performance does not guarantee future results.

## The Stop-Look Review

The UBS US Intrinsic Value Equity team's stop-look review is unique. Unlike a stop-loss protocol, which generally triggers a sale when a holding meets or exceeds loss thresholds, a stop-look review re-examines the original thesis for acquiring the stock – effectively repitching the stock as though it were being considered for an initial purchase.

characteristics — a holding period greater than 23 months, high volatility and an unrealized loss position — would be flagged for a specially designed stop-look review. A stock marked for stop-look review must be repitched by the responsible analyst as if it were a new idea in order to evaluate the security's attractiveness as if it were not already owned. The goal is to maintain consistent sell rules while giving analysts an opportunity to override the rule, provided they can present a strong case confirming their original thesis. The stop-look review sets a high hurdle to override the rule.

### Diagnosis: Sizing

While the stop-look review attempted to improve a behavior that appeared to be suboptimal, the greatest opportunity for improvement was in sizing. The investment process had consistently generated strong buy decisions. But portfolio weightings indicated a lack of trust in this strength. The analysis measured the effects of sizing by comparing actual portfolio performance to the performance of a portfolio of the same holdings assigned equal active weights. It appeared that the sizing decision was detracting from performance. A large portion of the portfolio's sizing shortfall was caused by failing to reach full positions in a timely manner, likely in an unconscious effort to avoid anticipated regret if the decision falls short. This counter-productive behavior is sometimes called *regret aversion*.

The team tended to initiate positions at a "starter" or smaller weight, to its own detriment. Ironically, initiation is often the time of greatest insight into an investment idea; yet, the team didn't always take full advantage of its conviction. To capitalize on this insight, an equal active weight was instituted as the default portfolio position size, essentially eliminating the sizing impact. This meant initiating new positions at full weight. Taking larger positions earlier helped capture additional alpha.

### Diagnosis: The cost of unchecked emotion

Over the 17 years analyzed, reaching full position weight in a timely manner could have added about 75 basis points of alpha annually. Establishing a better process for evaluating younger winners and older losers could have added approximately 250 basis points of alpha annually to performance on average. While the team had outperformed, there was clearly room for improvement.

### Using new tools to identify bias in the market

In addition to measuring and reducing bias at the portfolio level, the team began applying behavioral bias mitigation strategies to improve idea sourcing. The team discovered that two of the most common contributors to market mispricings are *anchoring* and *availability* biases.

Researchers found that when people are asked to form an estimate, they will often start with an arbitrary initial value – an anchor — from which they make adjustments.<sup>3</sup> The starting point, no matter how arbitrary or incompletely calculated, can influence subsequent expectations.

Anchoring often appears in cases where a business has demonstrated unusual fundamental strength, such as revenue growth or margin improvement, for an extended period of time. Investors may unintentionally anchor on those past results and lose objectivity when interpreting new information to estimate future results. Anchoring also affects share price expectations in instances where there has been structural change in an industry or business. Investors who have anchored onto historical relationships and figures may have to relinquish the knowledge they have worked hard to accumulate over time.

<sup>1</sup> Odean, T., "Are investors reluctant to realize their losses?," *Journal of Finance*, 1998, Vol. 53, pp. 1775-1798.

<sup>2</sup> Kahneman, D. and Tversky, A., "Prospect theory: An analysis of decisions under risk," *Econometrica*, 1979, Vol. 47 (2), pp. 313-327.

When investors evaluate the headwinds that a particular company or sector may face, they may be overly influenced by more recent or extreme events, which can lead them to miscalculate the likelihood of future occurrences. This human tendency to generalize from a few examples is called availability bias. For example, the share price of one company analyzed last year had been battered by recent industry-related headline events that loomed large in investors' minds and contributed to an apparent underpricing on the stock. The company was an industry leader not dependent on the affected sector and was well able to weather a short-lived downturn. This led to the conclusion that the market was exhibiting availability bias, giving too much weight to intra-quarter events rather than to a longer time horizon. The short-term downturn had apparently reset the anchor for some investors' estimates of the company's long-term value. This is just one line item of an in-depth analysis that has had a positive impact on results.

Some analysts use a checklist to help them recognize their *own* biases. This checklist calls for the analyst to note any red flags in recent company communications or industry developments, and to make note of recent wide price swings that may increase the risk of valuation anchoring. The goal of this process is to broaden thinking and objectively frame key issues and risk factors affecting the business.

Finally, for new investment ideas, a "pre-mortem" analysis considers in detail different reasons why the idea might not work out. Each negative scenario is categorized by severity (relative to the team's intrinsic value estimate), probability, and whether the probability has increased, decreased, or stayed the same over the past year. The objective is not to create a mechanical checklist that highlights everything that could go wrong with an investment — a tactic that could actually narrow an analyst's perspective — but to develop a *framework for thinking* about an idea that is as rational as possible.



<sup>3</sup> Kahneman, D. and Tversky, A., "Judgment under uncertainty: Heuristics and biases," *Science, New Series*, September 27, 1974, Vol. 185, No. 4157, pp. 1124-1131.



### **Eliminating bias is part of the quality-control process**

Unhelpful biases and thought habits have a weed-like tendency to creep into even the most process- and fact-driven investment decisions. Part of the answer is to accept that fact and develop a plan to minimize their impact.

These exercises underscore the *UBS US Intrinsic Value Equity* team's focus on continuous learning and improvement. Improved sizing and sell processes have improved portfolio performance. The team continues to monitor and measure its decision-making process as a means of delivering continuous improvement to a strong investment foundation.

An important side effect of gaining clarity around behavioral issues is that it also gives greater insight into the processes that are working well. Buy decisions were exceptionally strong, but that wasn't apparent until the behavioral analysis uncovered relative underperformance in selling volatile older holdings and in sizing decisions. Behavioral issues in some parts of the investment process masked outperformance in others.

The search for emotion in the investment process is part of an overall emphasis on quality control. In the same way that early manufacturers examined every facet of the assembly line to perfect each movement and action, the US Intrinsic Value Equity team continuously looks for factors that create alpha leakage.

Currently, it is conducting an in-depth analysis of its behavior following large downside price movements, which can trigger strong emotions for any investor. The ultimate goal in this and all process evaluations is to protect and enhance the ability of the investment process to deliver the maximum possible alpha. The research is clear: Behavioral biases affect professional and nonprofessional investors. Those who want to reduce emotionally driven investment decisions should start by looking for evidence in their results. Ask yourself these questions:

1. *When I add a holding to my portfolio, do I start out small with the intention of buying more later if it performs well, or do I assign a consistent sector buy weight and stick to it?*
2. *What drives the sell decision, and is it consistently applied?*
3. *Have I developed a process to identify behaviorally driven market mispricings?*

The ability to pick stocks is the key to success for any manager doing fundamental research. But too often, the work stops there. Managers should perform detailed data-driven analyses to determine their overall strengths and weaknesses. It is an essential step in the process of continuous improvement that should be our common goal.

## UBS Asset Management Pension Fund Fitness Tracker

### Funding ratio

Funding ratios measure a pension fund's ability to meet future payout obligations to plan participants. The main factors impacting the funding ratio of a typical US defined benefit plan are equity market returns, which grow (or shrink) the asset pool from which plan participants' benefits are paid, and liability returns, which move inversely to interest rates.

### Liability indices: Methodology

Pension Protection Act (PPA) liability returns are approximated by the Barclays US Long Credit A–AAA Index. This index broadly reflects the duration and credit characteristics of the PPA discount curve that is used to discount expected pension benefit payments for US defined benefit pension plans.

### Asset index: Methodology

UBS Asset Management approximates the return for the "typical" US defined benefit plan using the reported asset allocation of the UBS Asset Management Pension 500 Database. The series is constructed using the aggregate asset allocation weightings and publicly available benchmark information, with geometrically linked monthly total returns.

### Pension Fund Fitness Tracker: Methodology

The US Pension Funds Fitness Tracker is the ratio of the asset index over the liability index. Assuming all other factors remain constant, it combines asset and liability returns and measures the impact of a "typical" investment strategy on the funding ratio of a model defined benefit plan in the US due to interest rollup, change in interest rates and typical asset performance, but excludes unique plan factors, such as contributions and benefit payments.

### The UBS Asset Management Pension 500 Database

The UBS Asset Management Pension 500 Database ("the Database") is a proprietary database that is based on the analysis of 500 public companies sponsoring large defined benefit plans. The information was extracted from the companies' 10-K statements, and therefore represents generally accepted accounting principles (GAAP) information. The study may include figures for companies' nonqualified and foreign plans, both of which are not subject to ERISA. The aggregate asset allocation is based on an equally weighted average of the 500 companies included in the database. The aggregate asset allocation includes equities, fixed income, hedge funds, private equity, real estate and cash.

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# UBS Asset Management

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<sup>1</sup>As of September 30, 2015. UBS Asset Management (Americas) Inc. is a member of UBS Asset Management, and has USD 148 billion in assets under management as of September 30, 2015.

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