

---

# Feedback

## New Analytics For Improvement

---



Boston Quafafew

**February 19, 2013**



# The unconscious

- More than 95%
- Automatic



# Feedback

- Discrete
- Objective
- Granular

---

## **Skill vs. Luck**

---

**Outcomes reflect both skill and luck**

**Skill implies nonrandom successful outcomes**

**Measuring outcomes is inadequate to support improving**

## PROFILE

Fund B

September 30, 2011

## SUMMARY SKILLS BUYING SELLING BEHAVIORS

Key performance and turnover measures.

Periods	YTD	5-yr.
Start	1/3/11	10/2/06
End	9/30/11	9/30/11
Period	9 mo	60 mo

### Returns

Portfolio	-17.44%	-2.22%
Benchmark (RU2000V)	-18.51%	-3.08%
Relative	1.32%	0.88%
Stock selection	2.14%	0.41%
Alpha		+274 bps

### Turnover

Weight	71%	64%
Name	57%	49%
Average holding period		19.0 mo

### Information Ratios

Basic	0.27
Alpha	0.81

Alpha: This is a measure of risk-adjusted return. Alpha provides a better indication of predictable skill by significantly eliminating the effects of market cycles. The alphas contained herein reflect adjustments to return that control for: general market return (beta); style effects from the relative performance of large cap versus small cap stocks; style effects from the relative performance of growth versus value stocks; and effects from the relative performance of high momentum versus low momentum stocks.

Information Ratio: The information ratio is often used to gauge overall skill. In its basic's form it is the ratio of the portfolio's active return divided by the volatility of the active returns. Active return is the difference between Portfolio Return and the Bench Return. The volatility of the Active Return is computed as the standard deviation of the monthly Active Return –this is also known as Tracking Error.

Cabot calculates two other information ratios: alpha and position. The alpha form of the information ratio is computed as the ratio of the portfolio's alpha divided by the alpha's volatility. Both the basic and alpha forms of the information ratio are derived from the portfolio returns. The position form of the information ratio is computed from the portfolio's positions. It is calculated as the ratio of the portfolio's weighted average margin divided by the volatility of the position margins. Margin is a position's sector relative performance.

Name Turnover: This is a measure of the frequency at which names are removed from the portfolio. Note: Portfolios that tend to own the same names for a relatively long time, but make lots of adjustments to position size, will have a Weight Turnover that is significantly greater than its Name Turnover.

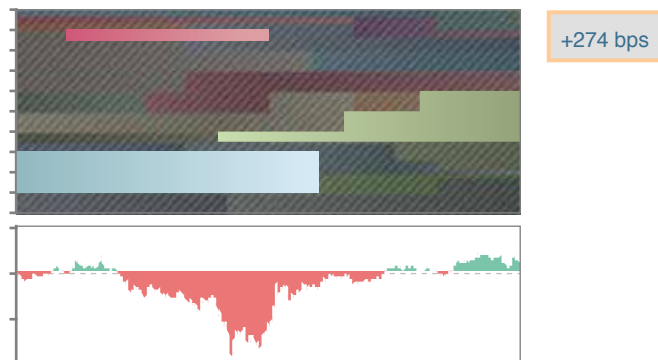
Relative Return: A measure of performance describing how well the portfolio performed in comparison to its benchmark. It is computed as the difference between the actual Return and the Bench Return divided by (1 + the Bench Return).

Stock Selection Return: This is computed as an aggregate of the returns of each position relative to its sector average. A positive value indicates favorable stock selection on average.

Weight Turnover: This is a measure of the degree to which the composition of the portfolio changes over time. It is computed by summing the weight of all sells over the analysis timeframe and dividing this quantity by the appropriate timeframe to produce an annualized value. Turnover measured in position weight provides insight into how frequently structural shifts occur among holdings while eliminating any affects from flows. Historical turnover rates together with the comparison of rates over time can aid in understanding the relationships among strategy, process and performance.

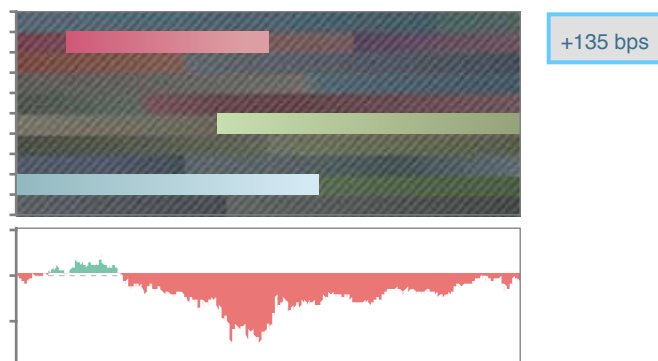
### Actual Portfolio

The actual portfolio is depicted in the visualization to the right, reflecting all buy, sell and sizing decisions and varying holding periods.



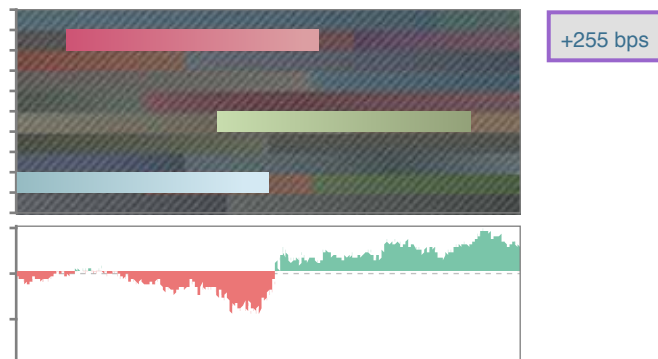
### Name Portfolio

The name portfolio is depicted in the visualization to the right. It's a hypothetical portfolio containing all positions in the actual portfolio, initiated and ended on the same days. What's different is that the name portfolio has none of the actual sizing decisions. All positions are initiated with an equal active weight, which is the benchmark weight plus an even distribution of the portfolio's then active weight across all names. The result is a portfolio of exactly the same holdings as the actual portfolio but different weights.



### Buy Portfolio

The buy portfolio is depicted in the visualization to the right. It's a hypothetical portfolio containing all positions in the actual portfolio, initiated on the same days (i.e. it has the same buys). What's different is that it has none of the actual sizing decisions (like the name portfolio) nor does it reflect the actual sell decisions. All positions are initiated with an equal active weight and then sold as they approach the average holding period, irrespective of how long they were held in the actual portfolio. Consequently, this hypothetical portfolio reflects only the buys of the actual portfolio.



### Computation of Skills

(Analysis period: 5 years ending 9/30/2011)

Skills present Cabot-developed measures of performance. Key metrics include separate alphas describing buying, selling, and sizing skills. All alphas are annualized.

### Buy Alpha

The buy alpha is equal to:

$$+255 \text{ bps} = +255 \text{ bps}$$

This measures the alpha associated with name selection. It is computed as the alpha of the Buy Portfolio. A positive value means that buys typically provide positive alpha from the initial purchase up to the average holding period.

+

### Sell Alpha

The sell alpha is equal to:

$$+135 \text{ bps} - +255 \text{ bps} = -120 \text{ bps}$$

This measures the effectiveness of the sell discipline. It is the difference in alpha between the Name and Buy Portfolios. A positive value means that the decisions of which positions to sell relatively quickly and which to hold longer added value.

+

### Sizing Alpha

The sizing alpha is equal to:

$$+274 \text{ bps} - +135 \text{ bps} = +139 \text{ bps}$$

This measures the effectiveness of the position sizing decisions including the timing and size of adds and trims. Sizing alpha is the difference in alpha between the Actual and Name portfolios. A positive value means that the choice of which positions to make larger added value.

=

### Alpha

The alpha is equal to:

$$+274 \text{ bps} = +274 \text{ bps}$$

This is a measure of the risk adjusted return of the actual portfolio; or alternatively, the sum of the Buy, Sell and Sizing Alphas. All alphas are calculated using a four-factor model.

The relationship between performance and position age is examined in this report. Insight is provided regarding when positions deliver their greatest performance: Do newer positions tend to generate higher performance than older positions? Or, are returns fairly smoothly delivered over the life of positions?

Selling is examined with respect to decisions made both before a position reaches the average holding period (younger positions) and afterwards (older positions). This analysis indicates whether selling younger positions helped or hurt performance and what impact resulted from holding older positions.

## Two sub-portfolios by age

(Analysis period: 5 years ending 9/30/2011; Benchmark: RU2000V; Average holding period: 19.0 mo)

	Alpha
Under 19.0 mo	+308 bps
Over 19.0 mo	-8 bps

## Early sells and older positions

	Benefit of sells in the first 19 months	Benefit of positions held beyond 19 months
Winners	+120 bps	-192 bps
Losers	-117 bps	+126 bps

**Partitions:** The positions are partitioned into sub-portfolios based upon age and then return is computed for each sub-portfolio. The partitions are evenly distributed around the average holding period for the portfolio. Positions are partitioned into sub-portfolios reflecting their age each day and the daily return is determined for each sub-portfolio. The cumulative annualized return for each sub-portfolio is computed and presented here for comparison. Weights shown indicate the proportion of the portfolio comprised of each sub-portfolio.

Partitioning analysis for younger and older positions is provided. A higher return for the younger sub-portfolio suggests that buys generally are productive, their timing is effective and that holding until they become older positions is unproductive. Conversely, a higher return for the older sub-portfolio suggests that buys may be too early and/or that average new buys deliver only modest return and that selling is relatively effective.

**Average Holding Period:** The holding period implied by the portfolio's weight turnover. For example, a weight turnover of 50% implies a two-year average holding period.

**Early Selling and Older Positions:** This table explores the benefit of all sells occurring before a position reaches the average holding period. The sell of a younger position (trims and complete sells) is effective if after the sell the stock underperforms the portfolio and is noted by a positive value. A negative benefit in contrast, suggests that positions are being trimmed or liquidated before the full alpha of these buy ideas has been captured.

This table also explores the benefits of holding positions beyond the average holding period. Holding on to an older position is effective if it outperforms the portfolio from the day its becomes seasoned until it is sold, indicated by a positive value. A negative benefit for holding onto older positions suggests that these positions are being held beyond the information advantage of the buy ideas.



## PROFILE

## SUMMARY SKILLS BUYING SELLING BEHAVIORS

Findings are 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.

**Endowment Effect**

Endowment Effect is the tendency to hold older winners too long and has been observed in the portfolio. Selling these once strong positions closer to when their information advantage is exhausted can add **166 bps** of alpha annually.

Investors sometimes value stocks higher when owned (in their endowment) versus when not owned. This value differential results in aggressively high target prices for selling a behavior accentuated when the asset has an unrealized gain. Awareness of this tendency can be used to challenge holding these positions, accelerate their selling and ultimately improving performance by recycling dead money back into productive new buys. Strongest results may come from implementing pinpointed signals that favor selling older winners experiencing high volatility.