Behavioral Finance and the Sources of Alpha

Better Expectations: The Mother of All Alphas

Alpha is the difference between a portfolio's actual (realized) return and its riskadjusted required return. Most active investors are trying to maximize alpha. If today's stock price is based on the market's expectation regarding the future, then in order to better predict tomorrow's stock price change, one must have better expectations about the future than the market. For an active investment manager to claim that he can generate above normal returns (a positive alpha) in the future, he must argue that, in some manner, his expectations regarding the future are better than the market's expectations.

Three Sources of Alpha

If having better expectations than the market is the mother of all alphas, the issue of how expectations are formed is important in order to understand the sources, or causes, of alpha. There are three potential sources of alpha:

> **1. Superior (Private) Information:** Most traditional investment managers try to generate a better information set. For example, they may try to generate a superior earnings forecast, or they may try to better understand the economics underlying a particular industry's profitability. These types of managers are frequently referred to as <u>traditional managers</u> or fundamental managers.

> **2. Process Information Better:** Some investment managers assume that most information is commonly available to all investors and focus their energy on trying to develop better procedures for processing this information. Managers that try to do this in a formal way are frequently called <u>quantitative managers</u>.

> **3. Behavioral Biases:** Scholars in psychology and the decision making sciences have documented that in some circumstances investors do not try to maximize wealth and in other circumstances investors make systematic mental mistakes. Both of these cases can result in mispriced securities and both are the result of behavioral biases.

Types of Behavioral Biases

The types of behavioral biases we do observe in securities markets fall into two broad categories:

> **1. Non Wealth-Maximizing Behavior:** The economist's view of rational behavior assumes that investors act only to maximize the expected value of their portfolios. In fact, investors may maximize other things that are more important

to them than their wealth. Kahnamen and Tversky's (1979) prospect theory formally addresses the fact that **for most investors the pain associated with losses exceeds the pleasure of gains. One manifestation of this is the fact that investors tend to hold onto their loser too long and tend to sell their winners too soon.**

2. Heuristic Biases and Systematic Mental Mistakes: Heuristic biases cause investors to make systematic mental mistakes and as a result incorrectly process available information. Heuristic biases can cause the majority of investors to make systematic mental errors. These mental mistakes, in turn, cause the market to have biased expectations and, as a result, misprice securities. Thus, heuristic biases are potentially exploitable. Four heuristics that are closely related to the most common mental mistakes, or errors in judgement, made by investors are:

Representativeness: This heuristic is the source of the adage, "if it looks like a duck and quacks like a duck, it probably is a duck." With respect to forming expectations, people evaluate the probability of an uncertain future event by the degree to which it is similar to recently observed events. Representativeness can cause investors to <u>over</u>react to new information, i.e., investors give new information too much weight in forming their expectations about the future. Explain **P/E and M/B (or B/M) Anomalies.**

Saliency: For events which occur infrequently, people tend to overestimate the probability of such an event occurring in the future if they have recently observed such an event. For example, commercial airplane crashes occur infrequently. However, if an airplane crash has recently been prominently reported in the media, people will greatly overestimate the probability of a crash occurring in the future. Saliency can cause investors to <u>over</u>react to new information. Explain **P/E and M/B (or B/M) Anomalies.**

Overconfidence: People are grossly overconfident regarding their ability and their knowledge. For example, when people say that they are 90 percent sure that an event will happen or that a statement is true, they typically are correct less than 70 percent of time. Overconfidence can cause investors to <u>under</u>react to new information. Explain **Short-Term Momentum and PEAD Anomalies.**

Anchoring: Psychologists have documented that when people make quantitative estimates, their estimates may be heavily influenced by previous values of the item. For example, it is not an accident that a used car salesman always starts negotiating with a high price and then works down. The salesman is trying to get the consumer anchored on the high price so that when he offers a lower price, the consumer will estimate that the lower price represents a good value. Anchoring can cause investors to <u>under</u>react to new information. Explain **Short-Term Momentum and PEAD Anomalies.**

PE ratio vs. Market-to-book (M/B) ratio

From Chapter 18, we have

$$P_0 = \frac{E_1}{k} + PVGO$$

where E_1/k is the value of assets in place (VAIP).

$P_o/E_1 = 1/k + PVGO/E_1$

$\qquad = (1/k)[1 + \{PVGO\,(k/E_1)\}]$

$\qquad = (1/k)[1 + (PVGO\,/\,VAIP)]$

$\qquad = (1/k)[(VAIP + PVGO)\,/\,VAIP] \qquad\qquad (1)$

From the definition of the market-to-book ratio, we have

$M/B\ ratio = (BV + PVGO)\,/\,BV, \qquad\qquad (2)$

where BV = the book value of the firm

If $BV = VAIP$, then from (1),

$P/E_1 = (1/k)[(BV + PVGO)\,/\,BV]. \qquad\qquad (3)$

From (2) and (3), we have

$P/E_1 = (1/k)(M/B\ ratio)$

PE ratio and M/B ratio are positively related.
PE ratio and B/M ratio are negatively related.