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NOT SO ELEMENTARY

Alpha, beta and correlation are now popular terms, but investors still need help understanding what they mean

It's not unusual to see specialized words from technical disciplines seep into public usage. Unfortunately, the journey into everyday language often comes at the expense of a precise meaning. The ABCs of investment returns—*alpha, beta and correlation*—offer a prime example.

Consider *alpha*. In popular usage, it's come to mean "return above and beyond that of a benchmark." Or, somewhat more precisely, the *risk-adjusted* return above a benchmark. When portfolio managers get together, they may define alpha as derived from a regression equation designed to isolate "value-added" return apart from market impact. (Yes, investment professionals do talk like that.)

The key here is the word "market," since the choice of the market or benchmark determines whether alpha is in evidence. Comparison to a broad market index, such as the S&P 500 Index, should only measure alpha (or "value-added" return) for a portfolio with a similar return opportunity and risk profile. For example, the S&P 500 Index should not be used to show alpha for an international fund because the risk/return profiles will be vastly different.

Once positive alpha has been narrowly defined as a risk-adjusted return above a suitable benchmark, the next question is: *Where was the alpha gained*?

Any source of realized alpha should match up with a documented investment process, which may include stock selection, sector weighting, style tilts or other fundamental drivers. Some strategies (including hedge funds) may employ leverage or option-like exposures that further complicate alpha measurement. (The risk premium attached to some illiquid strategies should not be mistaken for alpha, as this additional return is earned regardless of manager skill.)

Colloquially speaking, *beta* has become almost synonymous with *risk*. More accurately, it should be thought of as the return that is paid for having *exposure* to market risk.

Current investment practice takes into account multiple betas that are analogous to distinct markets and broad risks, including betas for the S&P 500 Index, currency, commodities and credit. Asset allocation can be properly viewed as diversifying across betas—or risk premiums. Along with active security selection, building and managing portfolio betas can be a source of portfolio alpha. Beta is also used to describe the sensitivity of a portfolio to market movement. This usage of beta can be problematic unless the last of the ABCs, *correlation*, is fully appreciated.

For our purposes, correlation measures how a portfolio moves in relation to a benchmark. It is expressed as the R in R^2, which is a measure ranging between 1.0 (100% perfect correlation) and 0.0 (absolutely no correlation).

In the real world, perfect correlations are rare. You might more typically see a portfolio with an R^2 of ".80 against the S&P 500" indicating that 80% of the historical variance of that portfolio's returns may be explained by the corresponding behavior of the S&P 500.

Beta measures unaccompanied by an R^2 statistic may be random, as any two series of returns will generate a beta whether meaningful or not. To further complicate matters, the value of R^2 can be misleading for unusual return patterns, and may also fail to capture the true causality or influence between returns. The scope of these issues is best left to a good statistics text.

Still, advisors who grasp the nuances of alpha, beta and correlation—and who are able to express them clearly—can set clients' expectations at a more realistic level. ■

✳ Any source of realized alpha should match up with a documented investment strategy.

✳ Any two series of returns will generate a beta, whether meaningful or not. So you need to factor in correlation.

✳ **Tim Knepp, CFA,** serves as Chief Investment Officer of Genworth Financial Asset Management (an Encino-Calif.-based unit of Genworth Financial), as well as chairman of the firm's investment management executive committee. He can be reached at tim.knepp@genworth.com