

Missing PERSONS

William F. Sharpe
Created B and A...
But Who Coined Beta
and Alpha?

BY JOHN ILKIW

THE TERMS systematic and unsystematic risk entered the investment lexicon in September 1964 with the publication of William F. Sharpe's "Capital Asset Prices: A Theory of Market Equilibrium under Conditions of Risk" in *The Journal of Finance*. Sharpe defined systematic risk as the variability in asset prices that investors cannot escape even if they are holding efficient combinations of securities. It results from swings in economic activity and is borne by all investors.

Contrary to popular understanding, nowhere in Sharpe's Nobel Prize-winning paper can the twin terms beta and alpha be found. Sharpe does use the letter B to signify a security's relationship to systematic risk and he asks readers to think about the relationship in the context of regression analysis. The underlying relationship between the return of a given security and return to systematic risk is the slope of a regression line, or B.

While the letter B is used by Sharpe in his paper, A, the precursor to alpha, is nowhere to be found. However, in two contexts, A is lurking just off-stage. In a literal context, Sharpe had implicitly identified A because it was then standard practice for textbooks to use the letters A and B for the intercept and slope of a single variable regression line. In a more important and long-lasting context, Sharpe's risk-return framework encouraged investors to ask the awkward question: What is the contribution of active management to investment returns? If B measures the portion of a portfolio's return that is earned from accepting a given level of systematic risk, whatever is left over must be the contribution of active management. From a statistical perspective, the impact of active management would be captured in the estimated value of A, which is now known as alpha.

Two years later, in 1966, Sharpe uses the perfor-

mance history of 34 mutual funds to test the predictive ability of his new risk-return framework, which is now called the Capital Asset Pricing Model (CAPM). His findings were published in *The Journal of Business* under the title "Mutual Fund Performance." Do the terms "beta" and "alpha" appear in this paper? No. But what does appear is probably the academic community's first-ever challenge to the investment industry to demonstrate that their high fees are warranted by above-market performance. After adjusting for market risk and management fees, Sharpe's analysis reveals that mutual fund returns fell short of an investable proxy of the market portfolio as represented by the 30-security Dow Jones Industrial Average portfolio. In his characteristically eloquent way, Sharpe ends his paper by firing the first shot in the still-continuing war between advocates of active and passive fund management: "...the burden of proof may reasonably be placed on those who argue the traditional view—that the search for securities whose prices diverge from their intrinsic value is worth the expense required..."

My personal correspondence with William Sharpe confirms he did not originate the terms "beta" and "alpha." In his 1970 book, *Portfolio Theory and Capital Markets*, Sharpe was still using B to represent systematic risk exposure. Peter L. Bernstein, the investment community's best known chronicler of the history of capital market ideas, does not know who originated the idea of using Greek letters to represent market and active returns. My continuing investigation has narrowed the range of possible persons to a small number of suspects—all of whom are still alive. If my quest is successful, I will share my discovery with you in a later column. ■

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