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Commentary

BUFFIN PARTNERS INC. ECONOMIC INVESTMENT AND ACTUARIAL RESEARCH

Alpha Beta Investment Management Strategies

Alpha Beta Investment Management Strategies are providing a newly emerging framework for the investment of institutional funds. Alpha Beta Separation and Portable Alpha are the two key features of this new paradigm for asset-liability management. The terms alpha and beta are derived from academic studies of investment portfolio performance relative to a benchmark, as quantified by a linear regression model. In its simplest terms, portfolio performance is expressed as alpha plus the product of beta and the benchmark rate of return. From this simple linear relationship it may be seen that alpha represents an excess rate of return that is independent of the benchmark and beta represents the extent to which the dependent component of the portfolio performance is related to the benchmark.

Investment portfolio performance analysis using the linear regression model produces seven basic statistical measures of investment return and risk: (a) mean rate of return; (b) standard deviation of rate of return; (c) alpha coefficient; (d) beta coefficient; (e) coefficient of determination referred to as R-squared; (f) coefficient of variation computed as standard deviation of rate of return divided by mean rate of return; and (g) reward risk ratio computed as alpha divided by standard deviation of rate of return. The R-squared coefficient of determination measures the extent of the relationship between the performance of the investment portfolio and that of the benchmark and is referred to as the correlation or "fit" of the linear regression model.

When the set of seven basic statistical measures from the linear regression model is produced, a wealth of information is available to provide a diagnostic analysis of the risk and return characteristics of the portfolio. When monitored over a period of time, the seven statistical measures may be utilized to indicate opportunities for intervention to implement strategies to improve the prospective risk and return profile of the portfolio relative to the benchmark. For example, targets could be set for each of the seven statistical measures and then the mix of asset classes, styles and managers could be "engineered" to achieve the objectives. Typical actions to enhance the risk and return profile of a fund might include the reallocation of assets by asset class, the replacement of an underperforming manager, adding a superior-performing manager with a track record of positive alpha, and extending asset class diversification to embrace new areas such as international or small-cap equities. With respect to individual security selection within a portfolio, historical alpha and beta measures may be utilized to construct a portfolio with the desired aggregate levels for alpha and beta. While these actions relate to an "asset-only" approach, they may also be applied in an asset-liability management context.

A logical portfolio structure for asset-liability management purposes separates the alpha and beta components into two distinct portfolios. The beta portfolio is designed to have characteristics that match those of the liability structure; a beta portfolio comprising zero coupon treasury bonds would represent the perfect risk-free matching portfolio for a pension fund's liability payment stream by amount and payment date. A beta portfolio constructed in this manner would eliminate the risk associated with changes in interest rates. However, in practice the amount of assets available for investment is likely to be less than that necessary to achieve a perfect match with the liability payment stream. Moreover, the institution responsible for the asset-liability management strategy may indicate a preference for accepting active risk in the expectation of achieving higher returns from favored asset classes such as equities and may elect to adopt a mismatching strategy in seeking to produce alpha from a portfolio that is expected to produce outperformance in relation to the behavior of the liabilities. In a situation where alpha generating portfolio structures are implemented, it is appropriate to adopt a portable alpha strategy whereby, as alpha or excess return over liabilities is produced, the gain is secured by "porting" the amount of the excess gain into the beta portfolio, thus reducing active risk and, importantly, improving the degree of asset-liability matching provided by the beta portfolio. Ryan ALM is one such asset manager that offers a Turnkey System where they construct a Custom Liability Index as the benchmark. They manage a Liability Index Fund as the Beta portfolio and a Liability Hedge Fund as the Alpha portfolio with a discipline of "porting" excess returns above the custom liability index returns.

As institutional investors increasingly come to recognize that asset management based on an asset-only benchmark is essentially playing the wrong game and that the appropriate manner in which to manage a fund is in an asset-liability context, a major paradigm shift is taking place with profound implications for the asset management business. In this newly emerging context, alpha and beta portfolio separation and portable alpha strategies are accepted among leading professional asset managers as the more appropriate method of managing institutional investment funds.

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