Commentary

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BUFFIN PARTNERS INC. ECONOMIC INVESTMENT AND ACTUARIAL RESEARCH

# Liability Driven Investment Strategies

The early years of this decade witnessed a "perfect storm" for pension funds as equity markets collapsed and interest rates fell, resulting in substantial increases in pension liabilities and substantial decreases in pension assets. Much of the damage was not immediately evident due to the common practices for accounting and funding purposes of discounting liabilities at unrealistically high interest rates and the smoothing of asset values rather than recognizing market values. While such practices are permissible under accounting and funding rules, they are inappropriate for asset-liability management purposes. Efficient asset management requires detailed knowledge of the true economic values of both assets and liabilities. Asset managers who only seek relative performance against an asset benchmark are failing to recognize the significance of liabilities and the need to manage assets and liabilities in an integrated manner. An asset manager achieving investment returns that equal a benchmark index, such as the Standard and Poors' 500 stock index, will be negligent if the liabilities grow at a greater rate than the assets. This would result in a weakened degree of economic benefit security for participants, as measured by a funded ratio, computed as the ratio of market value of assets to market value of liabilities. Unfortunately, most published pension plans' funded ratios are not based on true economic values, but on overstated "smoothed" asset values, typically averaged over five years, and on understated liability values that are derived from applying non-economic discount rates to liability cash flows where the rates are significantly above true economic market values of interest rates.

There are many ways to compute funded ratios; for example, a funded ratio may be based on the accumulated benefit obligation (ABO) or the projected benefit obligation (PBO) for liabilities, each of which may be computed using a rate that is a function of expected return on assets (ROA) or market-related rates such as those indicated by the term structure of a bond yield curve. The computation of funded ratios may be based on market values of assets or may utilize "smoothed" values. The combination of ABO or PBO with ROA rates or yield curve rates and with market or "smoothed" asset values produces no less than eight alternative ways of presenting funded ratios. The use of non-economic values for assets and liabilities presents a distorted picture of the real state of funding and benefit security. Pension plans of airlines, steel companies and other industries have published misleading funding status reports based on non-economic values of assets and liabilities; these reported funding ratios turned out to be significantly overstated when the pension plans were terminated and the assets and liabilities transferred to the Pension Benefit Guaranty Corporation (PBGC). A pension plan that reports a 100% funded ratio based on smoothed asset values and liabilities computed with a discount rate related to expected ROA, may in fact have a significantly lower funded ratio on a true economic basis of market values of assets and liabilities; research studies performed by New York-based asset management firm Ryan ALM have established that if a hypothetical pension fund with a standard assumed liability distribution had a 100% market value funded ratio as of January 1, 2000, and if no changes were made to assets or liabilities over the next five years, with assets invested in an index portfolio of 65% equities and 35% fixed income and cash, the market value funded ratio would have declined to 53% by December 31, 2004. Other research at Ryan ALM discloses that five-year averaging of smoothed asset values resulted in an overstatement of asset values by 29% as of December 31, 2004 and the use of an ROA rate of 8% to value liabilities resulted in an understatement of liabilities compared to market values of 35% and that using the discount rates specified in the Pension Equity Act of 2004 understated liabilities by 15%.

There is a change sweeping over pension fund investment management as asset managers realize the problems associated with investment strategies that focus exclusively on performance relative to an asset benchmark. Managers now embrace the concept of Liability Driven Investment (LDI) Strategies. LDI establishes a closer match of assets and liabilities. LDI reduces volatility in the progress of funded ratios from year to year as measured on a market value basis, avoids the risk of substantial deterioration in funding status and avoids supplemental funding to redress deficits caused by mismatches of assets and liabilities. A major feature of LDI strategies is the use of a specially constructed liability benchmark that describes the precise nature of liabilities based on the projected cash flows for future benefit payments. This liability benchmark is constructed using market discount rates; ideally this would be the series of risk-free rates represented by a zero-coupon treasury yield curve. The benchmark is revalued continuously to reflect changes in liability cash flows and market interest rates. LDI strategies then involve the construction and active management of a portfolio of securities that will match or outperform the liability benchmark.

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