Conference of Consulting Actuaries
1995 Annual Meeting

Section 48 - Developing a Comprehensive Asset Allocation Plan:
Part I - Asset Allocation Strategy
Jeremy Gold

I. **Choose a frame of reference** — Some possibilities are:

A. Pension accounting
B. Actuarial methodology
C. Capital markets/corporate finance
D. Some blend

I choose capital markets/corporate finance. — A pension plan is a financial entity. The science of finance is tested in the capital markets: because transactions occur every day at real prices, poor theories lead to poor valuations lead to poor transactions lead to nonsurvival of the unfit.

Pension accounting and actuarial methodology produce artificial values derived from assumptions and methods rather than from transactions. Nonetheless, it is true that the perceptions of marketplace participants are influenced by accounting and actuarial values and this leads to second order real effects. These effects do not ratify the artificial valuations.

II. **Choose a model of the financial entity that we call a pension plan** Some possibilities:

A. **Stand-alone trust** — containing assets and liabilities and a claim on the sponsor for future contributions. This model is something like the insurance company models of the 1950's and 60's and something like multi-employer plans today. This may also be the model that underlay development of ERISA fiduciary rules. Under this model, the prime fiduciary issue is benefit security (analogous to the insurance commissioner's interest in solvency).

B. **Asset only investment model** — where liabilities are viewed as very long term and "managed" by actuarial assumptions so that investment focuses on total return consistent with acceptable asset only risk. This model was all but unquestioned until FAS 87 and OBRA and GATT revealed liabilities as market sensitive and therefore less manageable. This model still dominates current practice.

C. **Augmented balance sheet model** — views the pension plan as a financial subsidiary of the sponsor. This model is reflected in part by some of the compromises in the development of FAS 87 — particularly in the market oriented approach to the financial subsidiary combined with the expense smoothing for the operating parent that some consider desirable or necessary.

Subsets of the augmented balance sheet approach may be developed by including or ignoring tax effects and by assuming either an asset/liability linkage or separation. In light of my choice of C in section I, it can be shown that, in the absence of tax considerations, the asset allocation is primarily irrelevant to shareholders of public

companies and that, with tax considerations, the shareholders are benefited by bonds and more bonds.

D. **The Peskin model** — developed by Michael Peskin, recognizes several idiosyncrasies in the current environment of rules governing funding, taxation and surplus recovery. The inability of sponsors to recover surplus without a punitive excise tax combined with recent rule changes limiting maximum contributions, accelerating minimum contributions and increasing PBGC premiums for poorly funded plans leads to asymmetric risk-return relationships for the sponsor. This leads to asset allocation strategies that produce risk-adjusted present value gains for the sponsor.

The Peskin model focuses primarily on the present value of cash flows between the sponsor and the plan generally seeking to minimize their present value. Secondary effects that the plan has on the sponsor arise from accounting and credit rating issues.

III. **Analyze the Implications of Chosen Viewpoint and Model** — I will sketch this out for three instances only, each of which flows from my choice of C in section I combined with a model from section II:

A. **Augmented balance sheet without tax considerations** — Any assets held by a corporation represent an investment by the shareholders. Business assets clearly make the company what it is and presumably allow it to compete in its efforts to provide more than passive returns to its investors. Unrelated investment securities, for the most part, represent a diversification and dilution of the investors' exposure to the specific risks and returns of the primary business. This is a generally useless activity since the investors can do their own diversification and dilution, thank you. This point has been well developed by Fischer Black, Franco Modigliani and others. To the extent that any cost is incurred in managing these unrelated investments (and pension management costs can be significant), there is a net loss to the shareholder.

The primary conclusion is that a cheap passive investment is neutral and most other efforts are negative. In order to provide secondary benefits, however, assets that serve to increase expense stability, cash flow stability and benefit security may be of incremental value to the corporation's shareholders. Generally these assets will be liability matching assets held by the plan.

Those who disagree with this conclusion generally do so for one of the following reasons:

1. **Equity is good stuff in the long run** — this commonly held view derives from three major sources:

    a. **Higher expected return is good; time frame mitigates risk.** — Finance theory says that expected return is no more and no less than fair compensation for risk taken. While the time frame may affect individual ***risk tolerance,*** it does not ameliorate the risk. The unmitigated risk is passed on to the shareholders without regard for their risk tolerances. No free lunch served here.

    b. **Liabilities are equity-like over the long term thus risk is really reduced** — this might be true if it were true. It isn't.

    c. **"Noise" in the pension system derived primarily from the liabilities allows an incremental return for little or no incremental risk** — this Peskin observation fits better into his model (below) than

into the augmented balance sheet. In his framework, however, it is a valid justification for equities.

2. **Actuaries can smooth better than investment policy can** — this works when it is not very important and fails during periods of sharp changes and stress. Actuarial smoothing is frequently an inefficient alternative to a more market oriented approach. This was discussed in the 1993 annual meeting in a session entitled ***Advanced Pension Finance***.

B. **Augmented balance sheet with tax considerations** — In the late 1970's Fischer Black wrote an important paper demonstrating that pension plans should hold the most taxable portion of any assets held by the corporation. This point is frequently made for individuals who are advised to hold their taxable fixed income securities inside of qualified plans and to hold their equity (deferred capital gains type investments) outside of qualified plans.

Larry Bader recently observed that junk bonds may serve this purpose even better than quality bonds because much of the interest paid on these bonds really represents a return of principal in light of anticipated failures to return principal on default. Thus junk bonds are relatively over taxed and, if the risks can be offset outside the qualified plan, junk bonds can maximize the tax arbitrage outlined by Fischer Black.

C. **Peskin Model** — implies lots of long bonds and some equity in many common situations, but plan-to-plan variations can have a substantial effect on the amount of equity. An example of how increasing expected returns can increase the present value of future contributions can highlight parts of Peskin's reasoning:

A plan that is funded well in excess of the full funding limit and in excess of all current and future liabilities (at a fixed income rate) will never have to pay contributions. Equity investments (or other poor liability matches) may provide high expected returns but they also create the possibility of underfunding, and therefore the present value of future contributions will be greater than zero. There may be a residual value to ultimately recoverable surplus but, absent rules changes, Peskin has shown that it may not be sufficient to offset the increased present value of future contributions.

Larry Bader offers a more abstract example relating to an asset liability problem as distinguished from an asset only problem. Hypothesize:

Asset A will have a certain value of $160 at the end of a relevant period.
Asset L will have a 50% chance of value $100 and a 50% chance of value $200.
In an asset only environment, asset A dominates, expected value $160, no uncertainty.

If, however, Asset L happens to be the "liability asset" (meaning that the liability is also equally likely to be $100 or $200 and perfectly correlated with Asset A), then we find:

With Asset A — 50% chance of $60 surplus and 50% chance of $40 deficit. The deficit situation requires a contribution, the surplus may be unusable.

With Asset L — no sweat.