Illinois Pension Modernization Task Force

"Despite their massive size and economic importance, defined benefit pension plans have been largely hidden from view behind a nearly impenetrable thicket of often incomprehensible accounting standards, funding rules, and actuarial conventions."

"Indeed, when we gaze upon the pension landscape, we are struck with the peculiar sensation that much of what we were taught—about economics, about corporate finance, about accounting—no longer applies."

"The pension alchemy we see practiced every day is permitted, even encouraged, by financial accounting standards…funding rules, and actuarial conventions."

"But it is disconnected from the economic reality in which you must operate, and it obfuscates what every worker, retiree, investor, and creditor has a right to see."

Bradley Belt - Former Executive Director - Pension Benefit Guaranty Corporation

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Addressing the Issues Facing the Illinois Public Employees' Retirement System (ILPERS)

The true objective of any pension plan is for the assets to fund liabilities in such a way that costs (i.e. Contributions) remain level, rather than volatile. We recommend the implementation of five steps in order to increase the likelihood that "ILPERS" will achieve its full funding objectives. Every plan is different but the methodology to achieve the goal of full funding is consistent.

Step I: Install Economic Books (Market Value)

Step II: Focus Asset Allocation on the Funded Ratio

Step III: Establish Funding Adequacy Test

Step IV: Contributions should be viewed as part of the Asset Evaluation Process

Step V: Base Benefit Decisions on Funded Ratio

Step I

Install Economic Books

The major problem with pensions is the use of accounting and actuarial values instead of market values for both assets and liabilities. The Society of Actuaries ("SoA") in an October 2004 research article titled "Principles Underlying Asset Liability Management (ALM)" made it clear that current accounting rules distort economic reality and produce results inconsistent with economic values. The SoA emphasized that a consistent ALM structure can only be achieved for economic objectives. Economic values are based on market values. Current accounting rules and actuarial practices lead to a significant ***overvaluation*** of the true economic Funded Ratio (Assets/Liabilities) which affects the Asset Allocation, Contribution and Benefit decisions. It all links. The current accounting and actuarial practices are:

Assets = valued at five-year SMOOTHING of market values (*overvalues* assets)

Liabilities = valued at ROA as Discount Rate (*undervalues* liabilities)

Smoothing of assets can significantly overvalue or undervalue assets at any point in time. Given the track record of the decade of 2000s this method of valuation *overvalued assets consistently by as much as 24%.*

Using the ROA as the Discount Rate for liabilities created a much higher discount rate than the market yields for risk-free zero-coupon bonds (i.e. Treasury STRIPS). Multiplying the yield difference (ROA – Treasury STRIPS) times the duration of liabilities would estimate the liability valuation difference in present value dollars. Currently, the state of Illinois' retirement systems' ROA of 8.50% would *undervalue liabilities by 40% to 60%*

As a result, the reported **Funded Ratio** is significantly *overstated*. Through time this usually leads to lower Contributions than economically required and Benefit increases when they are not affordable. Note that the ROA tends to be a static number suggesting liabilities will grow at a positive and stable growth rate. This is totally inconsistent with reality. Moreover, if liabilities and assets both grow at the ROA then the actuarial projections calculate that the only way to make up a deficit is through higher Contributions… wrong answer. Pensions should want assets to *outgrow* liabilities such that the Funded Ratio increases enough to decrease the cost of Contributions first and possibly increasing Benefits later if fully funded.

Recommendation:

Procure a projected benefit distribution schedule from your actuary. This is a schedule which lists annually the accrued pension expense as calculated by the actuary.

A. **This is the single most important report for a "plan sponsor" who is looking to understand:**

   i. **Cash flows**

   ii. **Term structure and duration of liabilities**

iii. How to implement a greater interest rate hedge, which in turn reduces funding level volatility

iv. Tactical asset allocation as a means to continually correlate assets to liabilities

B. The projected benefit schedule should be updated at least annually. By updating the benefit schedule annually, the fund can account for the actual benefit accruals that will occur in the next plan year.

C. The projected benefit schedule should incorporate a data set derived from the following:

i. Closed group

ii. Current service

iii. Current salary

D. The actuary should look to utilize a closed group, with current service and salary, in order to remove the assumptions of potential accruals, and address the economic reality of a "mark-to-market" valuation of accrued benefits.

The SoA recommended that pension plans create a set of ***economic books*** that mark to market pension assets and liabilities frequently and accurately. Such economic books do not change or eliminate any accounting books or actuarial reports. It is an additional valuation that supports all asset and liability decisions. Traditionally, Asset Allocation, Contribution and Benefit decisions are generated from erroneous asset and liability valuations which lead to improper decisions due to misinformation.

There are several pension lawsuits today based on such "misinformation". Just like a doctor-patient relationship, the doctor needs tests done that report accurate information before any doctor can prescribe the medication or cure. So too do the pension doctors (i.e. trustees, consultants, etc.) need to be given accurate information so they can prescribe and administer the appropriate cure for their pension crisis.

Recommendation: Install a set of economic books that compare the market value of assets vs. the market value of liabilities (i.e. economic Funded Ratio). This requires a *Custom Liability Index* that accurately measures the market value of liabilities based upon the actuarial projections of future benefit payments or cash flow schedule. Since no two pension plan liability schedules are alike, only a *Custom Liability Index* is the appropriate measurement of the client's true objective. Such accurate and frequent information will supply the pension decision makers with the proper facts to make intelligent and appropriate Asset Allocation, Contribution and Benefit decisions.

Step II

Focus Asset Allocation on the Funded Ratio

The true objective of any pension plan is for the assets to fund liabilities in such a way that costs (i.e. Contributions) remain level, rather than volatile. The ROA currently dictates the projected Contributions as the difference between projected asset growth or cash flow vs. liability growth or cash flow. However, the ROA is a forecast of asset returns …a very bad forecast. As a result, applying the ROA to the volatile market values of assets leads to volatile projected Contributions. This has created a serious budget crisis among Public Pension Plans in the decade of the 2000s.

In the late 1990s many Public Pension Plans had fully funded plans on a market value basis. However, they never changed their Asset Allocation to a more conservative asset matching liabilities strategy using bonds that would have secured their Funded Ratio and reduced or even eliminated the volatility of Contributions. The thinking traditionally was that assets have to grow at the ROA or Contribution costs go up. As a result, when interest rates went below the ROA in the late 1980s, asset allocation models reduced their allocation to bonds since it was considered a drag on achieving the ROA. When the equity correction hit in 2000 and in August 2008, it was at a time that had the lowest allocation to bonds and the highest allocation to equities.

Amazingly, most states have lotteries which require by law that assets must be matched to liabilities using Government zero-coupon bonds. These rules were put in place to protect the state from any risk or cost. You never hear of a funding problem with state lotteries. They are always matched to liabilities. They are always operating as a no risk portfolio.

The proper focus for pension asset allocation is the Funded Ratio. You want the market value of pension assets to outgrow the market value (present value) of liabilities thereby enhancing the Funded Ratio and lowering costs (Contributions). If a surplus is created then Benefits can be increased. To accurately calculate the economic Funded Ratio requires a Custom Liability Index to measure the market value growth of liabilities. It is the *relative* growth of assets vs. liabilities that is critical. If the Funded Ratio improves and reaches a fully funded status (on an economic or market value basis) this would suggest an asset allocation shift to more bonds. Such a bond portfolio should be a **Liability Index Fund (i.e. Beta Portfolio)** that matches and funds liabilities such that the volatility of the Funded Ratio and Contributions will be reduced. Just like the lottery, bonds are best used and managed when "matching the liabilities" of the portfolio.

Since Asset Allocation accounts for over 90% of the total return of assets, it needs to be monitored versus liabilities every quarter. Quarterly asset reviews must include liabilities so the Funded Ratio is monitored as well. This will allow the plan sponsor to be well informed such that Asset Allocation, Contribution and Benefit decisions can be timely and based on accurate Funded Ratio measurements.

Recommendation: 1.) Replace the ROA with the Funded Ratio as the focus of Asset Allocation. 2.) Assets should focus on outgrowing liabilities not achieving the ROA. 3.) Bonds should be managed as a Liability Index Fund (Beta Portfolio) that match and fund liabilities. 4.) This requires a Custom Liability Index. 5.) The Funded Ratio must be monitored and presented at every asset review meeting. 6.) Once full funding has been achieved on an economic basis, Asset Allocation should have a heavy tilt to bonds that match liabilities and secure the Funded Ratio from becoming volatile.

Step III

Establish Funding Adequacy Test

The Funded Ratio is the scorecard that determines the financial health of any pension plan. It must be monitored often. Every asset review meeting should have liabilities presented so the Funded Ratio is being reviewed as well. This requires a Custom Liability Index to calculate and measure the market value of liabilities and its risk/reward behavior. Since liabilities are extremely interest rate sensitive, they need to be tested and shocked with interest rates going both up and down. Such a test is done and required on all insurance companies by the NAIC. In this way all key decisions are based on the true economic Funded Ratio. Moreover, the plan sponsor and its advisors will now have a better understanding of the risk/reward behavior of the liabilities so they can make better informed decisions.

Recommendation: The Funded Ratio must be monitored at every asset review meeting. A review of liabilities is just as important as a review of assets. More important is the monitoring of assets versus liabilities in terms of size, growth and risk/reward behavior. An interest rate sensitivity test needs to be performed just like insurance companies. Decision makers will get educated and comfortable on how liabilities behave which will allow them to make more informed Contribution and Benefit decisions.

It is important to remember that "Liabilities" and "Assets" have one element in common: Both have return characteristics. Therefore, the objective of the "Assets" is to outperform the "Return of the Liabilities."

Liability valuations are primarily impacted by eight factors:

1. Changes in interest rates

2. Asset performance

3. Level of employer/employee contributions

4. Annual benefit accruals

5. Annual benefit distributions

6. Entitlements: i.e. Cost of living adjustments (COLAs, etc.)

7. Changes to the mortality assumptions

8. Plan expenses/Normal Cost of current year accruals (which represents the portion of the cost of "projected benefits" allocated to the current plan year, including administrative and investment expenses)

Step IV

Contributions should be viewed as part of the Asset Evaluation Process

The ROA is a forecast of asset returns …a very bad forecast. It tends to be static and a high positive number. This is totally inconsistent with asset behavior historically. What is needed is the monitoring of asset growth vs. liability growth with a goal of achieving a fully funded status. Contributions are a future asset and as a result should be part of the asset evaluation process. Usually Contributions come in the form of cash and are used to make the liability payments at that moment in time. Current assets are then required to make the *net* liability payments (after Contributions). The combination of relative asset returns vs. liabilities and Contributions work together to produce a fully funded plan.

A good example is the late 1990s when Funded Ratios on a market value basis were high, if not fully funded. Given a budgetable or affordable projected Contributions plus assets growing at 6% or even less, many pension plans could achieve and maintain a fully funded status. This would have mandated Asset Allocation to shift heavily to bonds, to match liabilities since the target ROA was achievable through high quality bonds. Instead, a static 8% plus ROA was made as the asset goal and 6% bonds were not permitted into Asset Allocation.

Recommendation: Contributions should be viewed as a future asset and part of the asset evaluation process. Assets should be monitored vs. liability growth. Current pension assets should fund *net* liabilities after Contributions. The Custom Liability Index needs to calculate both gross and net liabilities so current assets can be managed and monitored accurately vs. liabilities.

A. It is our belief that without addressing beta (i.e. liabilities), the enhanced alpha (i.e. non-bond allocation), experienced by the Funds becomes susceptible to the variability of capital market returns.

- **It is extremely difficult to optimize the return of the alpha (non-bond) portfolio, without first identifying the term structure of liabilities.**

B. Additionally, through harvesting gains, this methodology provides a linkage between alpha and beta, meaning that the alpha returns generated by the portfolio are used to immunize liabilities, as opposed to being "left on the table."

- **This methodology of harvesting gains should be conducted periodically, i.e. when the next year of liabilities can be effectively immunized.**

Step V

Base Benefit Decisions on the Funded Ratio

The Funded Ratio is the proper scorecard that indicates the financial health of a plan if it is using market values and not actuary values. The economic Funded Ratio should determine what Benefit increases are affordable without adversely affecting the Funded Ratio. The new Pension Protection Act (PPA) that addresses private pension plans requires that no benefits can be increased if it causes the Funded Ratio to go below 90% funded. This is a proper economic rule that can safeguard every pension from escalating costs that are difficult, if not impossible, to rescind.

Recommendation: A rule or policy should be implemented that benefit increases are not allowed if it causes the *economic* Funded Ratio to go below 90%. Also any benefit increase can be rescinded if the *economic* Funded Ratio goes below 90%.

The collaboration of the Plan's actuary, consultant, managers, and legal counsel becomes the foundation for the implementation of a multi-disciplinary strategy.

This multi-disciplinary approach seeks to alleviate the "independent optimization" that so often occurs in defined benefit plans, and address the actuarial, asset/liability, contributory, and benefit entitlement issues that exist in the defined benefit plan marketplace.

A liability driven investment process would determine several critical issues:

A. **The duration of time that the Plan's assets could fund the Plan's liabilities, i.e. the potential to match the assets and liabilities as far into perpetuity as feasible.**

B. **The extent of the funded liability, based on present value and economic valuation for active, retired, and total lives.**

C. **The study should be used to analyze policy decisions and aid in the projections of contributory levels, funding ratios, expenses, and other variables.**

Plan sponsors will be able to fundamentally address these pension related issues and begin to create a path towards full funding by:

A. **Analyzing projected benefit schedules;**

B. **Comprehensively analyzing the actuarial review;**

C. **Conducting an asset/liability study;**

D. **Integrating a liability driven investment methodology and process;**

E. **Understanding the dynamics facing contributory and entitlement issues.**

Please feel free to contact our office regarding any further questions pertaining to our information. Our team can be reached at (312) 917-7429.

Sincerely,

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- restrictions on transferring interests in the Fund;
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- less regulation and higher fees than mutual funds; and
- manager risk.

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