

# Ryan ALM, Inc.

## The Pension Crisis

**Pension Crisis: The Pension deficit in America exceeds \$4 trillion!**  
Corporations = **\$533 billion** Public Plans > **\$4 trillion**

**Objective:** The true objective of any pension is to **fund their liabilities (benefit payments) at low and stable costs**. Such an objective should be funded at *reduced risk* through time.

**Bad Accounting Rules:** Current accounting rules (GASB/FASB/PPA) do not require valuing pension assets and liabilities at market. Instead they allow for *smoothing* techniques on assets and discount rates on liabilities which are higher than market rates for risk free securities. Such rules *distort economic reality* by not aligning assets and liabilities to accurate and frequent market valuations. Smoothing of assets creates an average valuation not a current market valuation (last 11 years *overvalued assets*). Higher than market discount rates *undervalue* the present value of liabilities. This leads to misinformation on the true economic **Funded Ratio** which leads to misinformed benefit, contribution and asset allocation decisions... it all links! Most pensions have lower Funded Ratios and higher deficits than reported.

**Wrong Index Objectives:** Asset allocation models, asset management and performance measurement are all focused on a target ROA using generic *market index benchmarks* which have nothing to do with liabilities. Such index objectives misalign assets/liabilities risk/reward behaviors. Indeed, **if you outperform the S&P 500 but lose to liabilities ... the Plan loses!**

**Wrong Definitions:** Alpha, Beta and Risk need to be *redefined* with a liability objective.

**Alpha** (tradition) = the excess return vs. the index objective return.

(redefined) = excess growth above liability growth (requires Custom Liability Index).

**Beta** (tradition) = portfolio that matches the objective risk/reward behavior (Index Fund).

(redefined) = portfolio that matches liability risk/reward behavior (Liability Index fund).

**Risk** (tradition) = the volatility of returns (Sharpe Ratio).

(redefined) = the uncertainty of funding liabilities. (Bill Sharpe revised the Sharpe Ratio).

**No Alpha in Bonds:** The PIPER performance survey shows the return difference between 1<sup>st</sup> Quartile and Median bond management is small (@ 50 bps. per year) and between Median and the Lehman Aggregate is even smaller. These returns are before fees! After fees, the Median manager would consistently lose to the benchmark. When 50% of an asset class loses to its benchmark you should index that asset class. The question is what index to use. The answer is the index that best represents the client objective: a Custom Liability Index.

**Annualized Total Returns** (10 year periods ending:)

<u>PIPER Study</u>	<u>2008</u>	<u>2009</u>	<u>2010</u>
1st Quartile	5.75%	6.92%	6.87%
Median	5.22%	6.46%	6.12%
Lehman Aggregate	5.63%	6.33%	5.80%



## **Ryan ALM, Inc.** **Pension Solutions**

**IASB New Rules:** IAS 19 accounting rules become effective Jan. 2013 which eliminate the ROA and smoothing mechanisms. Private pensions will be required to mark to market (MTM) assets and liabilities. FASB is expected to follow IASB soon. In anticipation of this, several large American companies have installed MTM (ATT, Honeywell, IBM, UPS, Verizon) .

**Custom Liability Index:** The first step in prudent pension management is to measure and monitor the liability objective frequently and accurately. Until liabilities are priced as a **Custom Liability Index (CLI)** the asset side is in jeopardy of managing to the wrong objectives (i.e. ROA and market indexes). Only a CLI best represents the risk/reward behavior of a pension liability schedule. Just like snowflakes, no two pension liability schedules are alike due to different labor forces, salaries, mortality and plan amendments. How could a static ROA or *generic market indexes* ever properly represent the risk/reward behavior of such a diverse array of pension liabilities? Once the CLI is installed the pension will now know the true **economic Funded Ratio** which should dictate the appropriate Asset Allocation, Asset Management and Performance Measurement. Ron Ryan was the inventor of the *first Liability Index* in 1991. In 2006, Ron won the *William F. Sharpe Index Lifetime Achievement Award* !

**RAAM:** Asset Allocation should be based on the *economic* Funded Ratio. A surplus position should have a radically different asset allocation than a deficit position. The **Ryan Asset Allocation Model (RAAM)** calculates the economic Funded Ratio, the annual liability Alpha hurdle rate to reach full funding and the appropriate allocation % to the Alpha assets.

**Liability Beta Portfolio:** As the PIPER study proves, the value added in bonds is small. **The best value in bonds is to match and fund liabilities** as Dedication, Immunization and Defeasance have proven for decades. Since liabilities are dynamic calculations they need a CLI to monitor their present value size and risk/reward behavior. The *core* or Beta portfolio for a pension should be in high quality bonds that match and fund liabilities *chronologically* thereby buying time for the Alpha assets to outgrow liabilities and erase the deficit. The proper Beta portfolio for any liability objective should be... a **Liability Index Fund**. This requires a Custom Liability Index in order to be executed.

**Liability Alpha Assets:** The non-bond assets are managed vs. the CLI to exceed liability growth (earn Alpha) and enhance the economic Funded Ratio. The goal here is outgrow liabilities (relative returns) by enough to erase the deficit over a time horizon equal to the average life (duration) of liabilities. As the Alpha assets achieve the required annual Alpha, such excess returns are ported over to the Beta portfolio to secure the victory.

**PAR:** The **Ryan Performance Attribution Report (PAR)** measures the risk/reward of total assets vs. the CLI through a series of measurements to make sure that Alpha is being earned and the Funded Ratio is on track to full funding.

