



Ryan ALM, inc.

Asset/Liability Management

The Solutions Company



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The Ryan Letter

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Index	Returns YTD 2009	Estimated Weights
Liabilities :		
Market (Tsy STRIPS)	-15.24 %	100 %
FAS 158 (AA Corporates)	9.36	
PPA (3 Segment)	1.23	
PPA (Spot Rates)	12.53	
GASB /ASOP (8% ROA)	5.38	
Assets :		
Ryan Cash	0.39 %	5 %
Lehman Aggregate	4.62	30
S&P 500	14.97	60
MSCI EAFE Int'l	24.77	5
Asset Allocation Model	11.97 %	100 %
Assets – Liabilities		
Market	27.21%	
FAS 158	2.61	
PPA (3 Segment)	10.74	
PPA (Spot Rates)	-0.56	
GASB/ASOP (8% ROA)	6.59	

Using Asset Allocation above in 2009, pension asset growth difference vs. liabilities was: **27.21%** (market valuation STRIPS); **2.61%** (FAS 158); **10.74%** (PPA rules-AA Corporate rates) and **-0.56%** (PPA-3 Segments); **6.59%** (GASB/ ASOP). Such valuations show the significant difference in not using proper *market* valuations. Most pension funds enjoyed a funded ratio surplus in 1999 but **have underperformed liabilities by about -126.52% since 1999** on a compounded index basis starting at 100 on 12/31/99! (see Pension Scoreboard)

Total Returns										
	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
Assets	-2.50	-5.40	-11.41	20.04	8.92	4.43	12.25	6.82	-24.47	11.97
Liabilities	25.96	3.08	19.47	1.96	9.35	8.87	0.81	11.76	33.93	-15.24
Difference: Annual	-28.46	-8.48	-30.89	18.08	-0.43	-4.44	11.44	-4.94	-58.40	27.21
Cumulative		-37.60	-73.40	-60.08	-66.13	-76.75	-64.60	-78.38	-181.57	-126.52

2009 Best Pension Year Ever !?

Based on the Ryan Liability Index (generic version using Treasury STRIPS yield curve equally weighted with an average duration of 15.5 years) liabilities have shown negative growth this year (-15.24%). As a result, pension assets (based on asset allocation shown on page 1) have outgrown pension liabilities by 27.21% for the first eight months of 2009 thereby enhancing the Funded Ratio significantly using market value accounting. I doubt if most pensions know this development since actuarial reports are annual, months delinquent. However, using FAS 158, PPA or GASB accounting methods liabilities behaved much differently. In every case, these accounting methods showed positive growth for liabilities using *hypothetical* corporate zero-coupon bonds valuations. Using the PPA spot rates with a 24-month moving average would suggest that assets underperformed liabilities by -0.56% this year. As I testified before the ERISA commission twice in 2004 and 2006, moving averages *distort* economic reality. Can you imagine your bank using this methodology to present your checking and savings account balances instead of your current economic balances. Such confusion and miscalculations have plagued the pension industry seemingly since the birth of ERISA. These distortions also distort the Funded Ratio which leads to distorted benefit, contribution and asset allocation decisions. As I have preached for decades, until pensions create a set of ***economic books*** that mark-to-market assets vs. liabilities in an accurate and frequent way, all asset functions are in jeopardy of operating to the wrong objective(s). Indeed, that is the core problem. Currently, it is hard to find the liability objective in the three critical asset functions of asset allocation, asset management and performance measurement. Installing economic books are the best way to support the asset side in understanding the risk/reward behavior of liabilities in these three critical functions. However, such economic books do **not** replace any accounting or actuarial books.

That is why I created the **Custom Liability Index (CLI) concept** in 1991 as the proper asset benchmark that best represents the true client objective. Until the CLI is installed, all asset functions are not in sync with the liability objective. With a CLI benchmark any LDI assets can now understand, be managed and monitored to the liability objective. Most asset allocation models use the ROA as their target return instead of focusing on the economic Funded Ratio (market value of assets/liabilities). This ROA focus creates a static asset allocation that is reviewed usually infrequently (triennially) and is not responsive to the economics of the plan (funded ratio). With a CLI, asset allocation can now focus on the economic Funded Ratio. In the late 1990s when pensions had surpluses they didn't correct their asset allocation to more bonds matched to liabilities because they were focused on meeting the ROA hurdle rate. With low bond rates, a greater allocation to bonds would have put a drag on the asset allocation validating the ROA. This has proven to be a drastic mistake.

Higher Interest Rates = Higher Funded Ratios !

America has witnessed a 27-year secular trend toward lower rates where 30-year Treasury rates peaked at 15.25% on 10/27/81 and hit a low of 2.55% on 12/18/08. So far this year the 30-year Treasury has seen its rates go up +149 bps! Given the enormous supply/demand imbalance on all fronts (Federal, Corporate and Municipal) there is a high probability that interest rates will trend upward for some time to come. This new secular trend in rates will

allow pensions Funded Ratio to recover significantly. If interest rates go up 80 basis points per year on average most pension funds will realize average liability economic growth of about **-5% per year!** If assets can realize positive growth, even if it is below the ROA, the Funded Ratio should improve dramatically thereby reducing the volatility and size of contributions over time:

	----- Annual Growth Rate -----				
Assets	5%	6%	7%	8%	9%
Liabilities	-5%	- 5%	- 5%	- 5%	- 5%
Alpha (Annual)	10%	11%	12%	13%	14%
Funded Ratio	60% >	104%	109%	115%	120%
	50% >	87%	91%	96%	100%
					105%

(without Required Contributions)

As the table above shows, a starting Funded Ratio of 60% becomes *fully funded* in five years even if assets underperform the ROA (usually estimated at 8% +). Just 5% asset growth will reach a fully funded status in five years starting at a 60% Funded Ratio. Notably, such calculations are before actuarial required contributions (ARC). Contributions should be viewed as future assets. Usually, such new assets are used to fund liabilities rather than be invested. As a result, current assets are used to fund *net* liabilities (after required contributions). If Funded Ratios were also calculated after required contributions they would rise significantly.

Buy Time ...thru Liability Beta Portfolio!

If we are witnessing a secular trend towards higher rates, then buying time is a prudent strategy. This trend will cause liabilities to experience negative growth in present values. The best way to buy time is to match assets vs. liabilities *chronologically* thru a bond portfolio (**Liability Beta Portfolio or Liability Index Fund**). The Liability Beta Portfolio should match and fund monthly *net* liabilities (after contributions). This requires a **Custom Liability Index** to provide frequent calculations (daily) on the term structure of liabilities. In this manner, any deficit will be pushed out longer thereby buying time for the Alpha assets (assets that are negatively correlated to liabilities) to outgrow liabilities and erase the deficit. Given time, most non-bond assets outperform bonds. Many asset allocation models today are moving away from traditional bond indexes (i.e. Lehman Aggregate) to longer duration bond indexes to better match the average duration of liabilities. **This is a big mistake!** If rates trend upward such bond portfolios will suffer significant negative growth. More importantly, long generic bond indexes can never represent liabilities since they use only coupon bonds whose durations peak around 16-years. Since long maturity generic bond indexes usually do not include maturities shorter than 10 years, they have a very narrow range of durations from around 7 years to 16 years. Even if the average duration of these long bond indexes are similar to the average duration of liabilities, their term structures are much different and will not exhibit similar risk/reward behaviors. Only a Custom Liability Index can possible monitor the size, shape and risk/reward behavior of liabilities. A Custom Liability Index is the proper benchmark for assets especially a matching liability portfolio (Liability Beta Portfolio).

Public Pension Watch

There seems to be an avalanche of Public Pension announcements concerning Pension + OPEB deficits and the mismanagement of such funds. **Potential municipal bankruptcies are waiting to erupt across America due to budget crises stemming mainly from unaffordable pension and OPEB contributions!** As I have preached since 1991, the accounting and actuarial rules (GASB and ASOP 27) governing Public Pension plans are the start of the pension crisis since they do not *mark to market* assets and liabilities. Assets are valued using a five-year *smoothing* technique that can undervalue or overvalue assets. Currently, this method *overvalues assets by @ 25%*. Liabilities are valued at a Discount Rate = ROA rate (@ 8.00% vs. market rates @ 4.00%). Using the ROA as the discount rate has *undervalued public pension liabilities by 30% to 55%* this decade. As a result, reported **Funded Ratios are greatly overstated**. These inappropriate rules have led to inappropriate benefit decisions, contribution decisions and asset allocation decisions. It all links! Here is an update on some municipalities:

Moody's – Issued a *negative outlook* to the creditworthiness of *all* local governments in the U.S.. This is the first time Moody's ever issued a blanket report on municipalities.

Worst Funded Cities – Based on actuarial reports (which *overvalue* Funded Ratios) the cities with Funded Ratios below 50% are: Atlanta, Jersey City, Little Rock, Philadelphia, Pittsburgh, Providence and Wilmington.

Federal – The Obama administration announced that the Federal Deficit will rise by \$9 trillion over the next decade to \$21 trillion. That is \$2 trillion greater than their estimate six months ago. It is estimated by 2030 almost 25% of the budget will go towards paying interest on this debt. This is twice the amount we pay today. It is also based on current interest rates.

New York – State Comptroller Thomas DiNapoli announced that tax-funded contributions for the New York State Employees Retirement System (ERS) will have to jump 61% between 2010 and 2011. Police & Fire (PFRS) will rise by 21% during the same period. Pension contribution rates are expected to rise from 11.9% to 30.3% (ERS) and from 18.2% to 41.1% (PFRS)

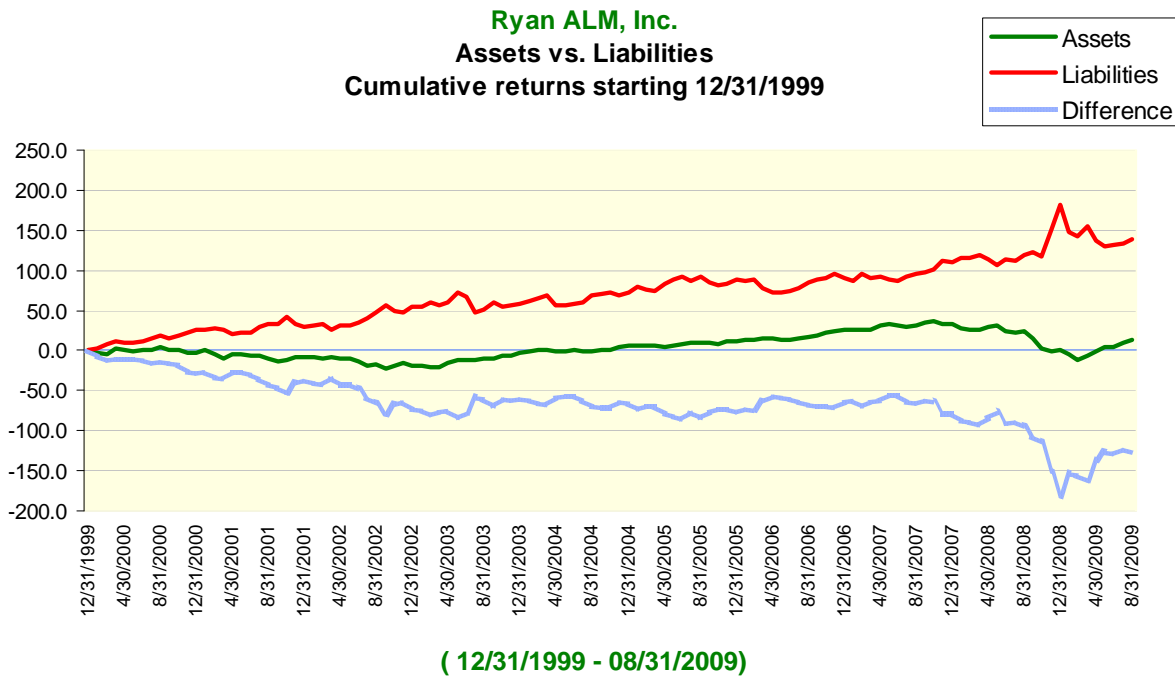
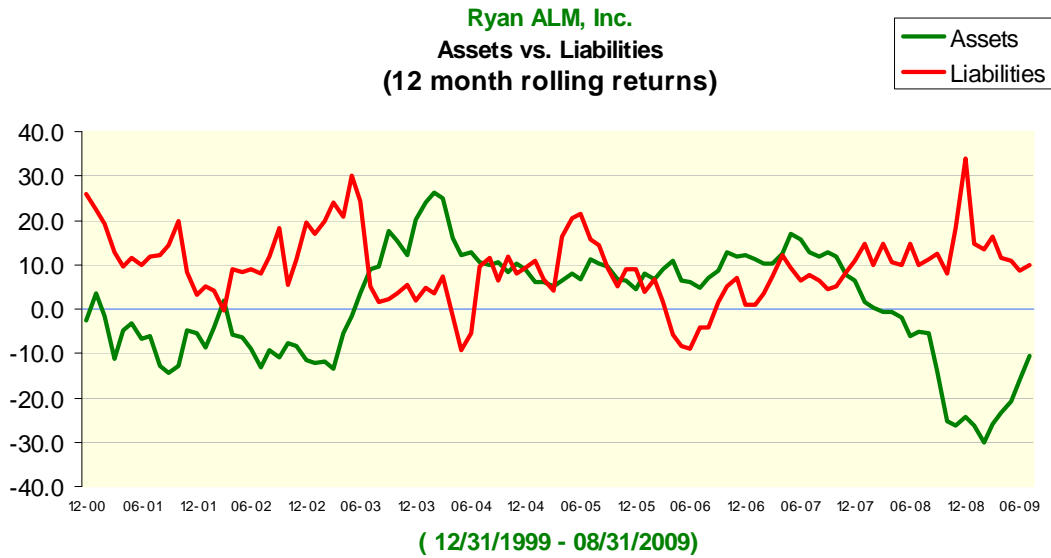
Pittsburgh - The Act 47 oversight team recently cited that the cost of pensions, health care and workers compensation has reached unsustainable levels. The current funded ratio of the city's pensions are around 28% down from 41% in 2003. Pittsburgh is one of 19 states that do not have authorization by their state to file for bankruptcy. PA uses Act 47 as a temporizing program which lays out the stipulations for a Chapter 9 filing.

San Diego – The city faces \$2 billion of debt in its pension system (POB). Recent actuarial forecasts have revealed that the city's annual pension payments will hit an unsustainable value of 50% of the city's payroll.

“Investors should be skeptical of history-based models. Beware of geeks bearing formulas.”
Warren Buffett

Pension Scoreboard

The graphs below show asset vs. liability rolling 12 month and cumulative growth since 1999. The cumulative growth difference is **- 126.52% suggesting any pension **Funded Ratio** below **222.81** in 1999 has a deficit today!**



Ryan Indexes

Custom Liability Indexes ... (Patent Pending)

The best way to price (discount rate) and understand the interest rate sensitivity of liabilities is the **Ryan Treasury STRIPS yield curve indexes** as a **LIABILITY INDEX BENCHMARK**. In March 1985, when STRIPS were born, my team and I at the Ryan Financial Strategy Group (RFSG) created the **1st STRIPS Index**. Based upon these Ryan STRIPS indexes we created the **1st Liability Index in 1991** as the proper liability Benchmark for liability driven objectives. Since 1991, the Ryan team has developed hundreds of Custom Liability Indexes (CLI). Similar to snowflakes, no two pension funds are alike in that they each have unique benefit payment schedules due to different labor forces, mortality and plan amendments. Without a CLI it would be difficult, for assets to be managed vs. this liability objective. Until a CLI is installed as the benchmark, the asset side is in jeopardy of managing vs. the wrong objective (generic market indexes). **If you outperform generic market indexes, but lose to the CLI ... the plan loses !**

Ryan Treasury Indexes

In March 1983, my index team and I at the Ryan Financial Strategy Group (RFSG) created the **1st Daily bond Index ... the Ryan Index** as a *Treasury Yield Curve* index series for each auction maturity series (from Bills to Bonds). The best way to understand the interest rate behavior of bonds is to use the Ryan Treasury constant maturity series for each Treasury *auction* series with two composite indexes ... **Ryan Cash and Ryan Index**.

Ryan/Mergent 1-30 year Treasury Maturity Ladder Index (PowerShares ETF)

On October 11, 2007 PowerShares launched a fixed income ETF based upon the Ryan/Mergent 1-30 year Treasury Maturity Ladder index. This index is an equal-weighted diversified portfolio of 30 distinct maturities. For more info on this ETF and index, please go to :

[www. Powershares.com](http://www.Powershares.com) (click on fixed income portfolios)

To view all Ryan Indexes data go to : **www.RyanIndex.com**

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Note: In October 2005, Ron Ryan terminated his license agreement with Ryan Labs to distribute and calculate the Ryan Indexes and Ryan STRIPS Indexes. Ron Ryan and Ryan ALM have no affiliation with Ryan Labs. Any use of the formulas, methodologies and data of any of the Ryan Indexes without Ron Ryan's written permission is prohibited.

***Given the Wrong Index ... you will get the Wrong Risk/Reward
Confucius***

Pension Solutions: Custom Liability Index and Liability Beta Portfolio

Ryan ALM offers a turnkey system of CLI + Liability Beta portfolio as a pension solution:

Custom Liability Index - The first step in prudent pension management is to understand, measure and monitor the liability objective frequently and accurately. Until liabilities are packaged as a **Custom Liability Index (CLI)** the asset side is in jeopardy of managing to the wrong objectives (i.e. market indexes). Only a CLI best represents the unique liability schedule of pensions. Just like snowflakes, no two pension liability schedules are alike due to different labor forces, salaries, mortality and plan amendments. How could a *generic market index* ever properly represent 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. Ryan ALM is a leader in CLI as Ron Ryan was the inventor of the *first Liability Index* in 1991. In 2006, Ron won the *William F. Sharpe Index Lifetime Achievement Award* !

Liability Beta Portfolio (Patent Pending) – The value added in bonds is small as every performance ranking study proves (1st quartile vs. median difference). **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 risk/reward behavior. The *core* or Beta portfolio for a pension should be in high quality bonds that match and fund liabilities. A Beta portfolio is defined as the portfolio that matches the objective. If the true objective is liability driven then, by definition, the proper beta portfolio for any liability objective must be ... a **Liability Index Fund or Liability Beta Portfolio**. This requires a Custom Liability Index in order to be executed.

The Ryan ALM Beta portfolio system will invest only in high quality securities that match the CLI. This provides our clients with the *lowest cost and lowest risk portfolio*. It is the lowest risk portfolio since it has:

No Interest Rate Risk (matches CLI)
No Liquidity Risk
No Credit Risk
No Event Risk
No Prepay Risk

The Ryan ALM Beta portfolio is the lowest cost portfolio since we will always out yield liabilities by more than our low fee thereby guarantying each client **No Net Fee** to maturity (liability benefit payment dates). Moreover, the Beta portfolio is a matching liability portfolio that fully funds liabilities so no extra contributions are needed in this space reducing the volatility of contributions.