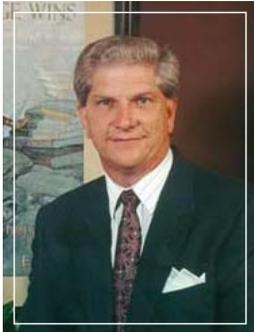# Ryan ALM, inc.
## Asset/Liability Management

*The Solutions Company*

Ronald Ryan, CEO, CFA

# The Ryan Letter
## February 2009

| Index | Returns YTD 2009 | Estimated Weights |
|---|---|---|
| **Liabilities :** | | |
| Market (Tsy STRIPS) | -13.80 % | 100 % |
| FAS 158 (AA Corporates) | - 3.57 | |
| PPA (AA Corporates) | 0.39 | |
| GASB /ASOP (8% ROA) | 1.29 | |
| **Assets :** | | |
| Ryan Cash | -0.01 % | 5 % |
| Lehman Aggregate | -1.26 | 30 |
| S&P 500 | -18.18 | 60 |
| MSCI EAFE Int'l | -19.03 | 5 |
| Asset Allocation Model | -12.42 % | 100 % |
| **Assets – Liabilities** | | |
| Market | 1.38% | |
| FAS 158 | -8.85 | |
| PPA | -12.81 | |
| GASB/ASOP | -13.71 | |

Using Asset Allocation above, 2009 pension assets **outperformed** liabilities by **1.38%** using market valuations (STRIPS); lost by **-8.85%** under FAS 158; lost by **-12.81%** under the PPA rules (AA Corporate rates); and lost by **-13.71%** using the GASB and ASOP 27 methodology of a constant ROA (8.00%). Such valuations show the significant difference in not using proper *market* valuations. Most pension funds enjoyed a funded ratio surplus in 1999. However, **assets have underperformed liabilities by about -155.12% since 1999** on a compounded index basis starting at 100 on 12/31/99! (see **Pension Scoreboard** section)

| 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 | -12.42 |
| Liabilities | 25.96 | 3.08 | 19.47 | 1.96 | 9.35 | 8.87 | 0.81 | 11.76 | 33.93 | -13.80 |
| Difference: Annual | -28.46 | -8.48 | -30.89 | 18.08 | -0.43 | -4.44 | 11.44 | -4.94 | -58.40 | 1.38 |
| Cumulative | | -37.60 | -73.40 | -60.08 | -66.13 | -76.75 | -64.60 | -78.38 | -181.57 | -155.12 |

## God Bless Pension America !

## Get Ready Corporate America for more Bad News … Pension Actuarial Loss !

Many corporations in America are now realizing what happened to them financially in 2008. Not only was it an economic recession but pensions went through the worst year in their history.  Most Defined Benefit plans witnessed negative pension asset growth of over **-20%**. But what they didn't expect was the spectacular growth in liabilities. Based upon the Ryan Liability Index we saw liability present values increase by more than **+30%** in 2008.  As a result, most corporate **pension assets underperformed pension liabilities by over -50% in 2008!**  This will play havoc with financial statements and have a long lasting negative effect on earnings.  An area overlooked by most security analysts is the Actuarial Gain/Loss line item.

FASB allows corporations to forecast the return on pension assets (ROA) as an offset to pension expense.  Naturally, most corporations will forecast a positive robust pension asset growth that is usually high enough to wash out pension expense.  In many cases, their forecast is high enough to create pension income which flows to the bottom line and creates *phantom earnings*.  Indeed it is calculated that about 10% of the S&P 500 earnings come from pension income.   In 2006 when Lucent Technology was sold to the French telephone company (Alcatel), they reported that pension income accounted for 92% of net income!  FASB requires that this pension ROA forecast be compared to the actual returns such that the difference (minus a 10% corridor) is then amortized over some period of time but no greater than the average life of the pension.  Well, if most pensions forecasted an 8% ROA and actual returns were more like -22%, there would be a return difference of about -30%.  After the 10% corridor, this would leave approximately a -20% return amortization over the next five to 15 years resulting in an amortization of from 1% to 4% per year.  Given the great size of pension assets relative to total company assets would suggest that this **Actuarial Loss could be a significant drag on earnings for several years to come**! If you think of GM who has pension assets of around $90 billion, this could be an EPS drag of between $0.9 billion to $3.6 billion per year.

Since companies are earnings led and not liability driven, they want the pension ROA to be as high as the accounting regs would allow.  Unfortunately, this meant that they had to have an asset allocation that would support or validate this ROA forecast to the company auditors.  Such an asset allocation is based on historical returns for every asset class but one … bonds.  Bonds go into the model at their *current yields*.  So when bond yields went below the ROA in the late 1980s, bonds became a drag on the ability to validate and achieve these ROA assumptions.  This is why asset allocations did not switch to a heavy bond allocation that could have matched liabilities and secured the surpluses pensions had achieved in the late 1990s. Such an asset allocation strategy has proven to be the millstone around pension necks. Similar to a sports team, when you are way ahead you change your strategy and get more conservative to secure the victory.  Whenever phase two of FAS 158 becomes a reality, corporations may have to post *actual* pension asset returns and remove the ROA assumption which has driven most corporate pension asset allocations historically.  Hopefully, the new FAS 158 rules will, in time align assets and liabilities to a common goal of funding liabilities at the lowest cost to the plan with prudent risk instead of the current goal of maximizing current earnings.

**<u>Shock Wave Coming for Public Pension Plans … Spiking Contribution Rates!</u>**
Public pension plans may be the hardest hit pension area. Most cities and states receive their actuarial reports six to nine months after the fiscal year end.  So by September, they should know what happened to them in 2008. Actuarial reports tend to be quite thorough but complicated. Given current GASB 27 rules and ASOP 27 practices where assets are smoothed over 5 years and liabilities are priced at Discount Rates based on the ROA of around 8%, public pension Funded Ratios should decline only modestly.  Where the shock wave will come from is the projected Contribution area.  This is where the economic truth is revealed. Most cities and states will be told that projected Contributions will grow almost exponentially as a % rate of payroll. Add in the inflation rate for payroll (@ 3%) and you get the total projected contribution cost (note: any rate above 10% of payroll is considered a high cost). **Such spikes in Contributions will become a budget crisis throughout America!** Some municipalities will face potential bankruptcies if these Contributions are real and have to be financed. This may be a day of reckoning as municipalities should realize that actuarial Funded Ratios based on actuarial valuations are not economic reality and are not consistent with the projected Contribution costs.  It is hard to reconcile that you could be fully funded or well funded but your Contributions are increasing significantly.  Why do you have to pay more in benefits (Contributions) if the assets are fully funding your liabilities? Hopefully, Public pension funds will question and investigate this serious miscommunication and interpretation of pension data.  Current accounting and actuarial practices price liabilities (Discount Rate) at the same projected growth rate as the ROA of assets.  Doesn't this suggest that the only way to cure a deficit is through higher Contributions since assets and liabilities are projected to have the same future growth rate?

Ryan ALM has designed a liability driven Asset Allocation Model that focuses on the true economic (market value) Funded Ratio.  Our model is based on our Custom Liability Index (CLI) which calculates the present value size, shape, interest rate sensitivity and risk/reward behavior of liabilities.  Once the CLI is installed, we calculate the economic Funded Ratio comparing the market value of assets versus liabilities.  We then take these economic valuations and calculate an appropriate allocation to Liability Alpha and Liability Beta assets using the client ROA projections.  Such a model calculates the hurdle rate needed for assets to fully fund liabilities over a distinct time horizon (PPA, duration of liabilities, etc.).

**The stated objective of any public pension is usually to fund the liabilities at a *level* Contribution rate over the future.** This goal is better defined as to match assets to liabilities (Fully Funded) with no volatility or increase in future projected contributions. If there is a true economic (market value) deficit then asset growth needs to outgrow liability growth to makeup this deficiency or you need extra contributions.  This requires a *Custom Liability Index* to measure the liability market value growth and be the **proper benchmark** for assets. Assets require a Custom Liability Index to measure Liability Alpha and implement a Liability Beta portfolio (i.e. Liability Index Fund or asset/liability matching portfolio). For more information on Ryan Liability Indexes, go to:  **[www.RyanALM/RyanIndexes/RyanSTRIPS YC.com](www.RyanALM/RyanIndexes/RyanSTRIPSYC.com)** as well as **Research** in the Company Info section from our home page.

*In God We Trust ! … (Not in our Financial Institutions)*
**U.S. Currency**

# Public Pension Watch

There seems to be an avalanche of recent 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* the liabilities (market rates @ 3.00%). Instead, they value the liabilities at the ROA rate (discount rate @ 8.00%). Such a discount rate methodology has *undervalued public pension liabilities by 30 to 55%* in the last 9 years. Moreover, they do not mark to market assets using a *smoothing* technique that can undervalue or overvalue assets. Currently, this method *overvalues assets significantly.* As a result, reported F**unded Ratios are greatly overstated** and need to be reduced accordingly. 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:

**Illinois –** The Civic Committee of the Commercial Club of Chicago announced that the state of Illinois faces unfunded pension debts of $116 billion which could increase by $10 billion annually.

**Milwaukee –** Annual pension contribution costs are projected to more than double in the next five years to nearly $100 million. This is even after a $237 million savings over the 25 years from a $400 million POB at an interest cost of about 6.25% and a projected 8% ROA.

**New York City –** Annual financial report for the fiscal year ending June, 2008 cited that the required annual required contribution (ARC) for the employees retirement system (NYCERS) had jumped up almost 25%. Since 06/30/00 the ARC has been growing at an alarming rate:

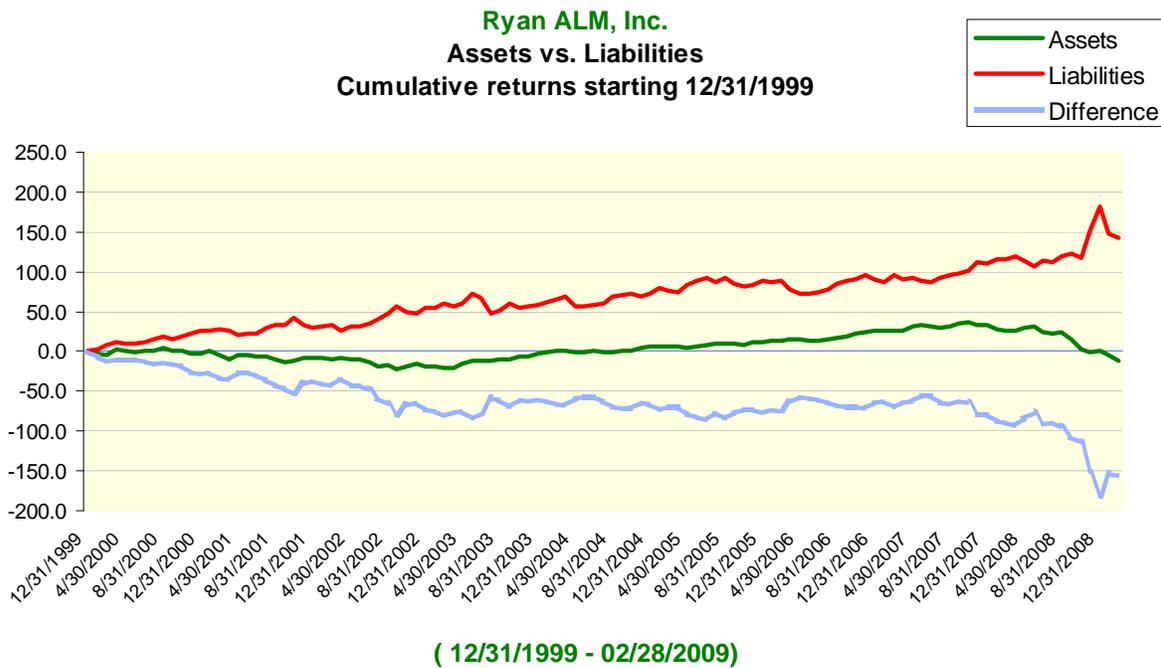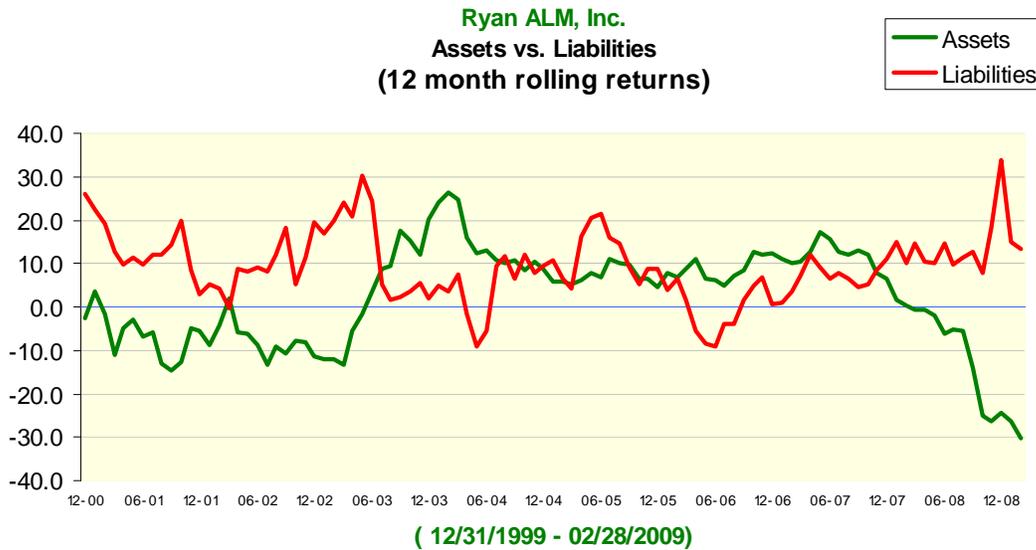| | | |
|---|---|---|
| 06/30/00 | $     68,619,745 | 0.915% |
| 06/30/02 | $   105,660,069 | 1.241% |
| 06/30/04 | $   542,229,450 | 3.526% |
| 06/30/06 | $1,024,358,175 | 11.142% |
| 06/30/08 | $1,874,242,487 | 19.001% |

**Rhode Island –** Projected contributions will spike from $370.9 million to $836.3 million by the year 2017.

**San Diego** – Supervisor Dian Jacobs said in her State of the County address last month that pension assets went down -30% in 2008 erasing a staggering $2.5 billion from the county pension fund. She estimated that required contributions will triple over the next five years.

*"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 **– 155.12% suggesting any pension Funded Ratio below 276.04 in 1999 has a deficit today!** As the Pension Crisis watchdog, we designed the **Pension Monitor** to capture world pension news: **http://www.pensionmonitor.com**

**Ryan ALM, Inc.**
**Assets vs. Liabilities**
**(12 month rolling returns)**



( 12/31/1999 - 02/28/2009)

**Ryan ALM, Inc.**
**Assets vs. Liabilities**
**Cumulative returns starting 12/31/1999**



( 12/31/1999 - 02/28/2009)

*Ryan ALM, Inc. - The Solutions Company*
www.ryanalm.com

# Ryan Indexes

## Custom Liability Indexes

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 **1$^{st}$ 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 Custom Liability Index it would be difficult, if not impossible, 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 **1$^{st}$ 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  (click on fixed income portfolios)**

## KLD U.S. Corporate Bond ESG Indexes

On August 7, 2008 KLD, Ryan ALM and Mergent launched a family of U.S. Environmental, Social and Governance (ESG) Corporate Bond Indexes. These are the First ESG Ratings Criteria as U.S. Corporate Bond Indexes. These investable indexes are the first to apply environmental, social and governance factors to a U.S. fixed income asset class. The KLD 1-3, 1-5 year, 1-10 year U.S. Corporate Bond Indexes are available for licensing as both generic and custom indexes, The KLD USCB series is the product of collaboration by three firms: KLD Research & Analytics (the leading ESG research and index provider since 1988), Ryan ALM as the fixed income architect and calculation agent; and Mergent, the fixed income data provider.

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

# Index Funds

## Liability Index Funds (Liability Beta Portfolio)

The best way to match assets to liabilities and reduce the volatility of the Funded Ratio is through a Liability Index Fund or Liability Beta Portfolio. Immunization is a popular strategy to match liabilities but has a mathematical problem in that it matches the *average duration* of liabilities instead of the entire *term structure* of liabilities. Only a Liability Index Fund correctly matches and fully funds each liability payment. This requires a Custom Liability Index. Ron Ryan was the inventor of both the Custom Liability Index and Liability Index Fund (Liability Beta Portfolio) concept.

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