



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)	-13.24 %	100 %
FAS 158 (AA Corporates)	12.57	
PPA (3 Segment)	1.95	
PPA (Spot Rates)	18.32	
GASB /ASOP (8% ROA)	6.06	
Assets :		
Ryan Cash	0.44 %	5 %
Lehman Aggregate	5.72	30
S&P 500	19.26	60
MSCI EAFE Int'l	29.57	5
Asset Allocation Model	15.05 %	100 %
Assets – Liabilities		
Market	28.29%	
FAS 158	2.48	
PPA (3 Segment)	13.10	
PPA (Spot Rates)	-3.28	
GASB/ASOP (8% ROA)	8.99	

Using Asset Allocation above in 2009, pension asset growth difference vs. liabilities was: **28.29%** (market valuation STRIPS); **2.48%** (FAS 158); **13.10%** (PPA rules-AA Corporate rates) and **-3.28%** (PPA-3 Segments); **8.99%** (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 -129.07% 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	15.05
Liabilities	25.96	3.08	19.47	1.96	9.35	8.87	0.81	11.76	33.93	-13.24
Difference: Annual	-28.46	-8.48	-30.89	18.08	-0.43	-4.44	11.44	-4.94	-58.40	28.29
Cumulative		-37.60	-73.40	-60.08	-66.13	-76.75	-64.60	-78.38	-181.57	-129.07

Long Duration Bond Indexes ...Caveat Emptor

Many pension plan sponsors are moving to a longer duration bond index as a better fit to the average duration of their pension liabilities. This is honorable and should have been done since the start of any pension. However, there are two major considerations here that all pension plans need to be aware of and avoid. First, all *generic* bond indexes today are composed of *only coupon bonds*. **Mathematically, coupon bonds cannot have durations past 17 years**, even the 100 year bonds issued years ago. The duration calculation is basically the average life of cash flows in present value dollars. Since semi-annual income payments usually outweigh the principal payment on long maturity bonds they drag the average life (duration) down. This means that **any generic long bond index cannot match any liability payments past 17 years!** Moreover to make a bond index long, generic bond indexes create an index rule that no bonds are allowed in the index shorter than 10 years. This rule creates a very narrow range of durations from around 7 years to 17 years. How this duration array could ever represent any client's liability schedule is a mystery. 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.

The second problem is that to match and price liabilities you must use zero-coupon bonds! Only zeroes have durations equal to their maturities so they can match any liability payment schedule. This is why FAS 158 and the PPA have required zero-coupon bonds as a yield curve for their discount rate mechanism. Unfortunately, they allow for hypothetical corporate zeroes which do not exist. Only Government zeroes exist as an asset you can buy to match and fund liabilities. Can you imagine managing bonds to this long index. You would never have durations short enough to make the liability payments or long enough to match the extreme volatility of long duration liabilities. Interest Rate Swaps have been used to match the average duration of liabilities but are **not assets** and have several new risk factors (counter-party, hedging, income differences). Moreover, matching the average duration of liabilities and not the term structure of liabilities does not work mathematically. This is Government securities are stripped and reconstituted because the pieces do not equal the whole. Only a **Custom Liability Index** can possibly 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. Only a Liability Index Fund (**Liability Beta Portfolio**) that matches each liability payment can truly match and fund liabilities accurately and effectively.

For pensions with deficits who believe interest rates will trend higher, you do not want to match the average life of liabilities. 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 on the term structure of liabilities so the Beta Portfolio can be managed and monitored efficiently. 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.

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%	126%
	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.

Inflation Watch

One indicator of future inflation is Federal Reserve Credit or the purchases of Treasuries by the Federal Reserve. Such purchases inject money into the banking system. Such purchases are paid for thru debt monetarization (i.e. printing money). This is the classic inflation scenario of more dollars chasing the same amount of goods and services. Since there is no economic output associated with these purchases it is considered inflationary. The latest data is for the week ended October 7, 2009. It shows a 29.46% increase over the last year:

Fed Reserve Credit = \$2,120,267 (in \$ millions)
Increase from 10/08/08 = \$624,827 (29.46%)

In a statement on September 23, Federal Reserve officials announced that it has extended its purchase of mortgage-backed securities and agency debt into the first quarter of 2010. An important observation here, is the amount of Government securities owned by Foreign banks. According to the Fed H.4.1 release foreign banks own 34.9% more Treasuries and Agencies debt than the Fed. How these key foreign banks behave (mainly Bank of China and Japan) will have a serious impact on our interest rate levels and shape of our yield curve. They too increased their holdings of U.S. Treasury securities by 27.17% over the last 12 months.

Federal Reserve Chairman Bernanke announces Recession is Over

Federal Reserve Chairman Ben Bernanke said that the recession has ended. At a conference at the Brookings Institution, Bernanke said "from a technical point of view, the recession is very likely over at this point." He also alluded to the fact that there is a risk that labor markets will remain weak through 2010 because growth will be too anemic to create jobs.

Barney Frank backs Rep. Ron Paul's Audit Bill

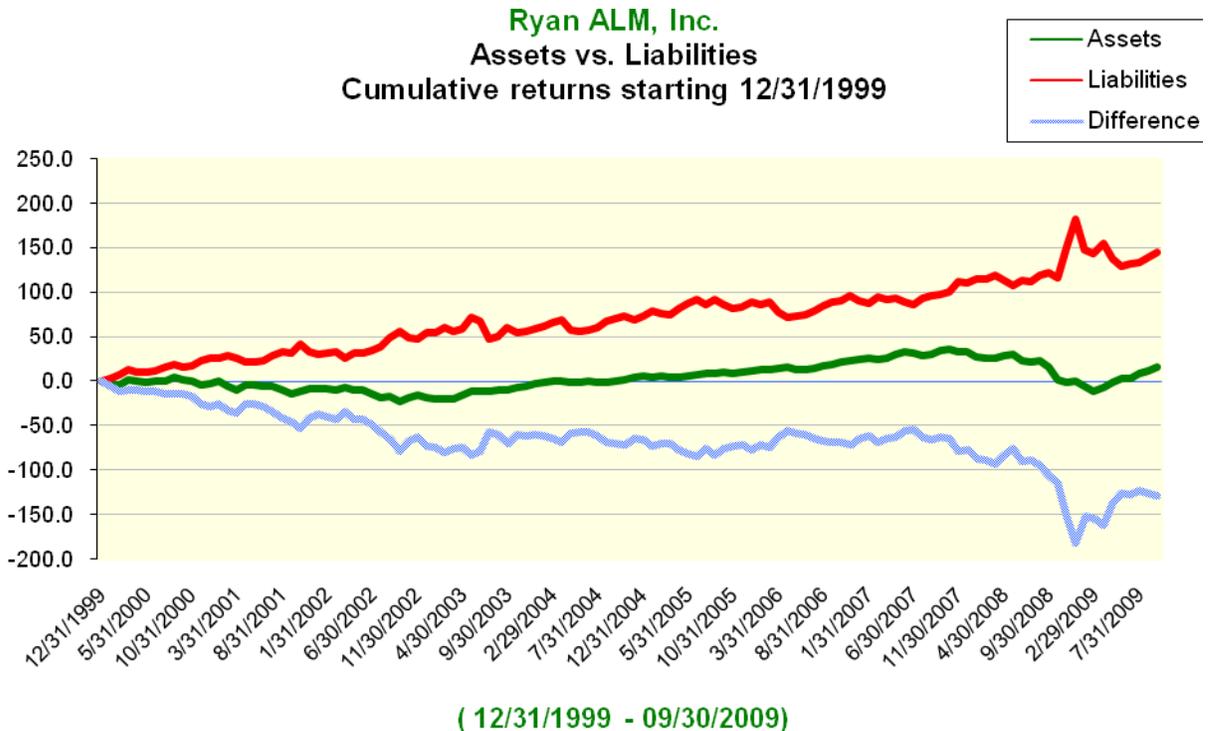
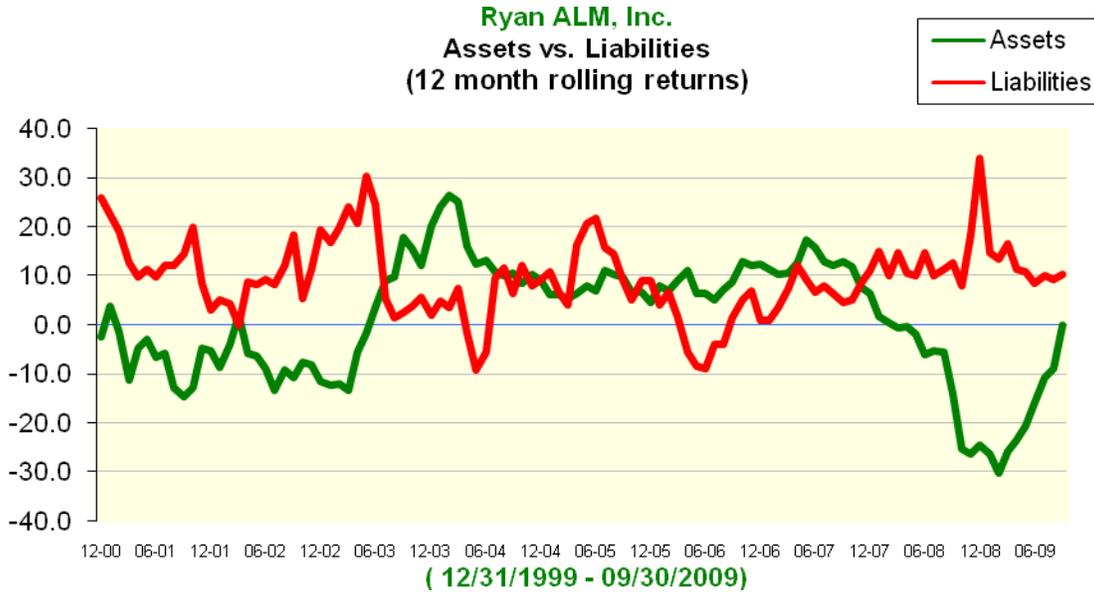
House Financial Services Committee Chairman Barney Frank said he backs legislation introduced by Rep. Ron Paul that would require the Government Accountability Office to audit how the Federal Reserve implements monetary policy and examines every aspect of the Fed, including how much it has lent and will lend to specific banks as part of its bank bailout program. The legislation introduced by Paul requires approval by the House Financial Services Committee before it comes to a vote by the full House has 295 supporters.

Gold Hits Record of \$1,058 per Troy Ounce

Since we left the Gold standard many decades ago, there is no economic reason to hold this commodity. Given the fact that Gold is now at an all time high price (\$1,058 per troy ounce as of 10/12/09) and our economy needs a stimulus (other than raising taxes) this might be a proper strategy and certainly good timing. As of October 7, 2009, the U.S. owned 11,041 tonnes of Gold (Germany has 3,418, China = 600 and the UK = 310). There are 32,551 troy ounces in each tonne. This would value our Gold reserves at \$380,240,535,278. Such a new found wealth could shore up the Social Security and Medicare trust fund which is the next big financial crisis that all Americans will pay for in higher FICA taxes. Put the sale proceeds in a lock box and only use the interest income when you start to run SS deficits in future years. This way we would have an interest earning asset rather than the reverse situation which we have today (a cost center not a profit center).

Pension Scoreboard

The graphs below show asset vs. liability rolling 12 month and cumulative growth since 1999. The cumulative growth difference is **- 129.07%** 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 (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.