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# The Ryan ALM Pension Letter™

March 31, 2015

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| Index                                | Returns<br>YTD 2015 | Weights      |
|--------------------------------------|---------------------|--------------|
| <b>Pension Liabilities:</b>          |                     |              |
| Market (Tsy STRIPS)                  | 4.27%               | 100 %        |
| ASC 715 (FAS 158)                    | 3.60                |              |
| PPA (MAP 21 = 3 Segments)            | 1.80                |              |
| PPA (Spot Rates)                     | 7.31                |              |
| GASB /ASOP (8% ROA)                  | 1.92                |              |
| <b>Pension Assets:</b>               |                     |              |
| Ryan Cash                            | 0.07 %              | 5 %          |
| Barclay (Lehman) Aggregate           | 1.61                | 30           |
| S&P 500                              | 0.95                | 60           |
| MSCI EAFE Int'l                      | 5.04                | 5            |
| <b>Asset Allocation Model</b>        | <b>1.38 %</b>       | <b>100 %</b> |
| <b>Pension Assets – Liabilities:</b> |                     |              |
| Market                               | -2.89%              |              |
| ASC 715 (FAS 158)                    | -2.22               |              |
| PPA (MAP 21 = 3 Segments)            | -0.42               |              |
| PPA (Spot Rates)                     | -5.93               |              |
| GASB/ASOP (8% ROA)                   | -0.54               |              |

William F. Sharpe  
Lifetime Achievement Award

Money Management Letter  
Lifetime Achievement Award

Capital Link  
Most Innovative ETF Award

IMN  
ETF of the Year Award

Bernstein Fabozzi/Jacobs Levy  
Research Paper of the Year Award



Using the Asset Allocation above, the difference in pension asset growth vs. liabilities in 2015 was: **-2.89%** (market valuation STRIPS), **-2.22%** (ASC 715), **-0.42%** (PPA 3 segment rates), **-5.93%** (PPA-Spot Rates) and **-0.54%** (GASB/ ASOP). Such valuations show the significant difference in not using *market* valuations. Most pension funds enjoyed a funded ratio surplus in 1999 but **pension asset growth has underperformed liability growth since by an estimated -190.56%** on a compounded index basis starting at 100 on 12/31/99!

|             | 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 | 19.43   |
| Liabilities | 25.96   | 3.08    | 19.47   | 1.96    | 9.35    | 8.87    | 0.81   | 11.76  | 33.93  | -19.52  |
| Difference: |         |         |         |         |         |         |        |        |        |         |
| Annual      | -28.46  | -8.48   | -30.89  | 18.08   | -0.43   | -4.44   | 11.44  | -4.94  | -58.40 | 38.95   |
| Cumulative  |         | -37.60  | -73.40  | -60.08  | -66.13  | -76.75  | -64.60 | -77.50 | -181.5 | -106.94 |
|             | 2010    | 2011    | 2012    | 2013    | 2014    | 2015    |        |        |        |         |
| Assets      | 11.89   | 3.27    | 11.79   | 19.04   | 9.74    | 1.38    |        |        |        |         |
| Liabilities | 10.13   | 33.77   | 4.46    | -12.59  | 24.35   | 4.27    |        |        |        |         |
| Difference: |         |         |         |         |         |         |        |        |        |         |
| Annual      | 1.76    | -30.50  | 7.33    | 31.63   | -14.61  | -2.89   |        |        |        |         |
| Cumulative  | -115.67 | -195.73 | -194.30 | -120.74 | -177.14 | -190.56 |        |        |        |         |

### **Multiemployer Pension Reform Act of 2014**

A provision in the \$1.1 trillion spending bill that passed in the last days of Congress could be an omen of bad days ahead for union pension beneficiaries initially and perhaps Social Security beneficiaries eventually. This Act creates the possibility that current and future retirees could have their pension benefits reduced by as much as 60%. This Act only applies to multiemployer union pension plans. There are about 1,400 such plans covering about 10 million employees. This new ACT allows for a “clawback” where benefits already paid may be required to be paid back in part as a reduction of future benefits except for people over 80. The PBGC has announced that by 2025 there is a 90% chance that it will not have enough funds to guarantee benefits for non-solvent multiemployer pension plans that have collapsed and turned over to the agency. Several factors led to this pension crisis which I outline in detail in my book “**The U.S. Pension Crisis**” (see next page) especially inappropriate accounting rules and asset allocation.

### **Impact of New Mortality Tables on Pensions**

On October 27, 2014 the Society of Actuaries (SOA) released their final version of the new mortality tables for defined benefit pension plans (RP-2014). They show life expectancy for males has increased by 10.4 years and females by 11.3 years from the 2000 tables. As life expectancy increases so do the pension benefit payments. The SOA predicts that pension liabilities could grow from 4% to 8%. Such an increase in liabilities can also result in higher Pension Benefit Guaranty Corp. (PBGC) variable rate premiums. The IRS is expected to adopt these new mortality tables for 2016.

### **Corporate Pension Contributions to Stabilize in 2015**

After two years of reduced contributions, Towers Watson & Co. estimate that 2015 should be about the same as 2014. These are still historically high pension contribution costs. Some of the more notable pension contributions and funded status are:

|                 | <b><u>Contribution</u></b><br><b><u>(\$ millions)</u></b> | <b><u>Funded</u></b><br><b><u>Ratio</u></b> | <b><u>Deficit</u></b><br><b><u>(\$ billions)</u></b> |
|-----------------|-----------------------------------------------------------|---------------------------------------------|------------------------------------------------------|
| AT&T            | \$735                                                     | 76%                                         | \$14.3                                               |
| Exxon Mobil     | \$560                                                     | 67%                                         | \$ 7.6                                               |
| Conoco Phillips | \$300                                                     | 82%                                         | \$ 1.1                                               |
| Sears Holdings  | \$275                                                     | 62%                                         | \$ 2.2                                               |
| AIG             | \$173                                                     | 64%                                         | \$ 3.7                                               |
| Coca-Cola       | \$ 90                                                     | 86%                                         | \$ 1.5                                               |

### **Chicago Has More Police & Fire Retirees than Workers**

The Chicago Police annual pension report for 2013 shows 12,161 active police versus 13,158 retirees/survivors. The pension funded ratio is around 30%. The Chicago Fireman annual pension report for 2013 shows 4,685 active vs. 4,642 retired. The pension funded ratio is about 24%. Such a huge unfunded status will be harder and harder to fund given the upside down ratio of active to retired. The crossroads is at hand in Chicago... raise taxes or cut expenses or both. My vote is that they will do both in time.

### **Unions Win... Municipalities Lose in Pension Reform Fight**

The recent flare up over public pension reform has subsided for the moment. Detroit which filed for bankruptcy in 2013 got a ruling from the judge that pensions were contracts and could be broken or changed although the state constitution said the pension promises were sacred sync. So far pensioners have only seen their cost-of-living increases (COLA) rolled back not a

reduction in pension benefits. Stockton, CA emerged from bankruptcy in February 2015 after filing for protection in 2012. Although the judge ruled they could cut pension obligations, the city has decided not to. Stockton bondholders took a hit as much as 83% while pension costs rose 21% in the 2015 budget.

### **Reversion to the Mean?**

The S&P finished the best 6 years since 1999 and 1929 with an average annual return of **17.69% from 2008 to 2014**. If the historical average annual return of the S&P 500 is **11.29% (25 years)** and **11.40% (50 years)** does that suggest that the next 4 years would be dismal returns... if there is a reversion to the mean? Most asset allocation models use historical averages to estimate the future returns of an asset class. What they fail to do is live by their own statistical rules. Revert to the mean is a common acceptable premise such that a 10% average (mean) would suggest that a one year 21% + return would have to be counter balanced by a negative growth year(s) to revert back to the mean (25-year average return). Said differently, one should not expect a 10% consistent return if you just experienced a 20%+ return year(s). Well, the S&P 500 has just experienced a 17.69% annualized return (calendar year 2014), 32.36% return (2013) and 15.88% return (2012). If the 25-year average return is 11.29% what does that suggest will be the future S&P 500 returns for the next few years?

### **British Pension Deficits at Record High**

The London Telegraph reported that British pension deficits are at a record high causing soaring contributions which threaten to choke business. The number of companies facing pension deficits rose to a new high of 5,175 in January according to data compiled by the Pension Protection Fund (PPF). The cumulative pension deficit increased to £367.5 bn versus £45.4 bn just a year earlier. Noteworthy is that six companies in the FTSE 100 had pension liabilities larger than their equity market value. Many economists blame the Bank of England's loose monetary policy which has reduced bond yields to historically low levels. This increases the present value of pension liabilities causing larger deficits. Sounds familiar... sounds like Fed policy in America for the last 20 years.

### **"The U.S. Pension Crisis" Book Wins IPPY Gold Award for Finance**

My new book on The U.S. Pension Crisis was just honored with the top IPPY award for an independent publisher on finance. The IPPY awards were launched in 1996 as the first awards program exclusively for independents. This year's competition had 5,240 entries. If you are interested in purchasing, please email us at [Contact@RyanALM.com](mailto:Contact@RyanALM.com) or visit our web site for purchase info [www.RyanALM.com](http://www.RyanALM.com).

### **ASC 715 (formerly FAS 158) Pension Discount Rates Available via Ryan ALM**

Ryan ALM produces four pension discount rate curves in conformity with ASC 715 (FAS 87/106/158) by manufacturing AA corporate zero-coupon bond yield curves since FAS 158 became effective in 2006. Our discount rate yield curves are used and accepted by a top four accounting firm. If you have an interest in our ASC 715 data, contact us at... [Contact@RyanALM.com](mailto:Contact@RyanALM.com).

Ryan ALM also creates **Custom Liability Indexes (CLI)** as the proper benchmark for liability driven objectives based on FASB, PPA, GASB and market discount rates. Our CLI is a *monthly index* report that calculates: Present Value, Term Structure, Growth Rates (Returns), Summary Statistics (YTW, MDuration, Average Price (Cost)) and Interest Rate Sensitivity.

## Ryan ALM Pension Scoreboard

The graphs below show asset vs. liability rolling 12 month and cumulative growth since 1999. Ryan ALM Benchmark Liability Index = **296.12%** growth while pension assets = **105.56%** growth for a difference of **-190.56%** suggesting any pension **Funded Ratio below 192.70% in 1999 has a deficit today on a market weighted basis. The Ryan ALM Pension Funded Ratio = 51.89%.**



( 12/31/1999 - 3/31/2015 )



( 12/31/1999 - 3/31/2015 )

## The World of 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, the Ryan Financial Strategy Group (RFSG) created the **1st STRIPS Index**. Based upon these Ryan STRIPS indexes we created the **1st Liability Index** as the proper Liability Benchmark for liability driven objectives. The Ryan team has developed hundreds of Custom Liability Indexes (CLI). Similar to snowflakes, no two pension funds are alike with unique benefit payment schedules due to different labor forces, mortality and plan amendments. Until a CLI is installed as the benchmark, the asset side is in jeopardy of managing vs. the wrong objective (market indexes). **If you outperform generic market indexes, but lose to the CLI ... the plan loses!**

### Ryan Treasury Yield Curve Indexes (Constant Maturity / Duration series)

In March 1983, the Ryan Financial Strategy Group (RFSG) created the **1st Daily bond Indexes (the Ryan Index)** as a *Treasury Yield Curve constant maturity* index series for each **auction** maturity series (from Bills to Bonds). In March 1985, the day after Treasury STRIPS were born RFSG created the **1st Treasury STRIPS indexes** as a *Treasury Yield Curve constant duration* series of 1-30 year maturities (30 distinct constant duration indexes + composite). The best way to measure interest rate risk is to use the Ryan Treasury Yield Curve Index series.

### RAFI Fundamental Weighted High Yield Index Series + RAFI Investment Grade Index Series (PowerShares ETFs = PHB + PFIG)

In January 2010, Research Affiliates announced the creation of a series of bond indexes based on the RAFI fundamental weights. These include a short, intermediate long and composite Investment grade series and a short and intermediate High Yield series. Ryan ALM was honored and chosen as the index designer and calculation agent. In August 2010 the RAFI 1-10 year High Yield Index was launched as a **PowerShares ETF (PHB)**. There is also a Canadian hedged version (**PFH\_CN**). In September 2011 the RAFI 1-10 year Investment Grade index was launched as a PowerShares ETF (**PFIG**). For more info on these ETFs and index, please go to:

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

### Ryan/Nasdaq 1-30 year Treasury Maturity Ladder (PowerShares ETF = PLW)

On October 11, 2007 PowerShares launched a fixed income ETF (**PLW**) based upon the Ryan/Nasdaq 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)

### Ryan ESG Bond Index Series (Global version)

In 2009 Ryan ALM launched the **1st ESG Global corporate bond index series** based upon the GSRA ESG ranking (G100 + G400 series) for the top ranked ESG Global companies. This index series includes a 1-30+ year index.

### Ryan ASC 715 (formerly FAS 158) Spot Rate Yield Curve Index

In 2006, Ryan ALM designed the FAS 158 yield curve index that prices any private pension liabilities in conformity to FAS 158 standards.

### Ryan Canadian Corporate Bond Index (Pro-Financial fund)

In 2012, Ryan ALM designed an investment grade index for Canadian corporate bonds. This index should help with the new IAS 19 discount rate accounting rules.

To view all Ryan Indexes data go to: [www.RyanIndex.com](http://www.RyanIndex.com)

*Ryan Index is a Registered Trademark of Ryan ALM, Inc.*

*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!***

## **Pension Solutions: Custom Liability Index and Liability Beta Portfolio**

*(Patent Pending)*

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

**Custom Liability Index** (Patent pending) - The first step in prudent pension management is to 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 (1<sup>st</sup> 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 thereby reducing the cost and volatility of contributions.