Ronald Ryan, CEO, CFA

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

The Ryan ALM Pension Letter

June 30, 2014

Index	Returns YTD 2014	Weights
Pension Liabilities:		
Market (Tsy STRIPS)	11.82%	100 %
ASC 715 (FAS 158)	11.57	
PPA (MAP 21 = 3 Segments)	3.32	
PPA (Spot Rates)	12.13	
GASB / ASOP (8% ROA)	3.89	
Pension Assets:		
Ryan Cash	0.08 %	5 %
Barclay (Lehman) Aggregate	3.93	30
S&P 500	7.12	60
MSCI EAFE Int'l	5.21	5
Asset Allocation Model	5.75 %	100 %
Pension Assets – Liabilities:		
Market	-6.07%	
ASC 715 (FAS 158)	-5.82	
PPA (MAP 21 = 3 Segments)	2.43	
PPA (Spot Rates)	-6.38	
GASB / ASOP (8% ROA)	1.86	

Using the Asset Allocation above, the difference in pension asset growth vs. liabilities in 2014 was: **-6.07%** (market valuation STRIPS), **-5.82%** (ASC 715), **2.43%** (PPA 3 segment rates), **-6.38%** (PPA-Spot Rates) and **1.86%** (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 -146.24%** on a compounded index basis starting at 100 on 12/31/99!

Total Returns (Market Values)

	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	-181.57	-106.94

	2010	2011	2012	2013	2014
Assets	11.89	3.27	11.79	19.04	5.75%
Liabilities	10.13	33.77	4.46	-12.59	11.82%
Difference:					
Annual	1.76	-30.50	7.33	31.63	-6.07%
Cumulative	-115.67	-195.73	-194.30	-120.74	-146.24

“The Pension Crisis” Book Wins IPPY Gold Award for Finance

My new book on The 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. My book will be released from the printer by the end of July. If you are interested in purchasing, please email us at **Contact@RyanALM.com**.

2014… Poor Start for Pensions

2013 proved to be the second best year in pension history (since 1987) with assets outgrowing liabilities by 31.63% (Ryan ALM estimate) using market or economic valuations. 2014 is starting out as a correction year as assets underperformed liability growth by **-6.07%** (see 1st page). We estimate pension asset growth of about **5.75%** based on the asset allocation on the first page and liability growth of **11.82%** based on the Ryan Liability Benchmark Index (using Treasury STRIPS). The ***Ryan ALM Pension Funded Ratio*** stands at **57.19%** starting at 100.00 in 12/31/99 (see graphs on page 4).

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**.

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.

Illinois Teachers Reduces ROA to 7.50% from 8.0%

On June 24, the Illinois Teachers Retirement System (TRS) Board of Trustees cut their estimated rate of return (ROA) to 7.50%. The executive director, Dick Ingram, said: the assumed rate of return greatly influences the financial future of TRS. Reducing the rate from 8 percent to 7.5 percent is a prudent move that balanced expected future reality with the needs of TRS members.” The immediate consequence of this move is that it increases the present value of liabilities which increases the TRS deficit and contributions about $500 million for next fiscal year. Public plans need to understand that using the ROA as the discount rate for liabilities means that only thru contributions can a plan make up a deficit… wrong answer! I urge Mr. Ingram and the TRS Board of Trustees to read my research paper “How the ROA Created the Public Pension Crisis” (go to www.RyanALM.com/research). The prudent approach and focus of any public pension board should be the funded ratio (assets/liabilities) and not the ROA. Pensions should be a *relative* return business not absolute returns (i.e. ROA). In the 1990s when most public plans had surpluses, why didn’t their asset allocation respond to this fully funded status by immunizing liabilities? This would have secured their victory and de-risked the pension plan. Instead asset allocation was directed to achieve the ROA. This became a static asset allocation methodology referred to as strategic asset allocation. Asset allocation needs to be *responsive* to the funded ratio. Unfortunately, most public pension plans don’t even know their true economic funded ratio but once a year usually six months delinquent. De-risking pensions seems to be a hot topic but how could you employ de-risking tactics if you have the ROA as your focus of asset allocation? Strategic asset allocation will not allow for any major shift to bonds… a fatal flaw totaling about $4 trillion in pension deficits! Installing a Custom Liability Index (CLI) should be the first step in prudent asset/liability management. The CLI calculates all the critical information (present value, duration, cash flow structure, growth rate and interest rate sensitivity) for the Board of Trustees, consultant and asset management to work in harmony focusing on the funded ratio. The moral of this story is: **given the wrong objective… you will get the wrong risk/reward behavior!**

PA Governor Refuses to Sign State Budget without Pension Cuts

Pennsylvania's (PA) governor Tom Corbert refused to sign the $29.1 billion state budget plan because it did not include pension cuts. According to the governor, state pension costs consume more than 60% of the budget. PA unfunded pension liability is set to grow by 38% to $65 billion by 2018. The Public School Employees Retirement System was 59% funded as of Dec. 31, 2013 and the State Employees Retirement System was 66.3% funded as of June 30, 2012.

GASB Promotes Transparency of OPEB Liabilities in Exposure Draft

On June 16, GASB published two proposed statements intended to significantly improve financial reporting of OPEB liabilities for city/state entities. GASB will host public hearings on the exposure drafts on Sept. 10–12. These proposals replace GASB 45 to be consistent with GASB 67/68. This allows the discount rate on OPEB liabilities is to be the ROA until assets are exhausted and then a 20-year high quality muni bond yield for the unfunded liabilities.

PBGC Estimates Its Future Financial Position

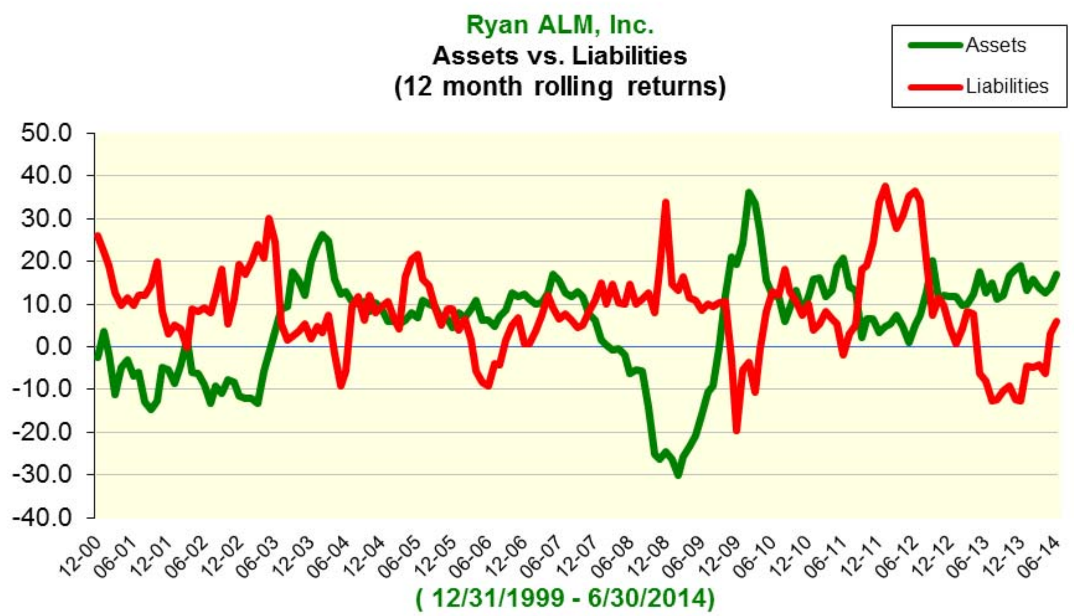
On June 30, the Pension Benefit Guaranty Corp. (PBGC) projected a sharp decrease in its single-employer deficit position but a bigger deficit in its multiemployer pension plan insurance program. PBGC forecasts its single-employer deficit will shrink to $27.4 billion, a $7.6 billion reduction, by 2023. However, multiemployer pension plan insurance program's deficit will widen to $49.8 billion from $8.3 billion last year and become insolvent within 10 years. The single employer improvement is mainly due to the new MAP-21 legislation which increases PBGC insurance premiums. MAP-21 raised the PBGC premium from $49 per participant to $57 in 2015 and $64 in 2016. MAP-21 also raised the variable-rate premium on underfunded plans to $24 per $1,000 of deficit in 2015 and $29 per $1,000 of deficit in 2016 (currently at $14 per $1,000 of underfunding). These significant premium increases are not in the CPI. Remember that MAP-21 was labeled as pension reform. It allows corporations to raise their discount rate on liabilities using a 25-year moving average of AA corporate interest rates. This would lower liabilities and contribution costs. However, it raises corporate profits which are taxed. The federal government forecasted $9.394 billion in new tax revenues over the next 10 years. MAP-21 should have been labeled as increased government taxes not pension reform.

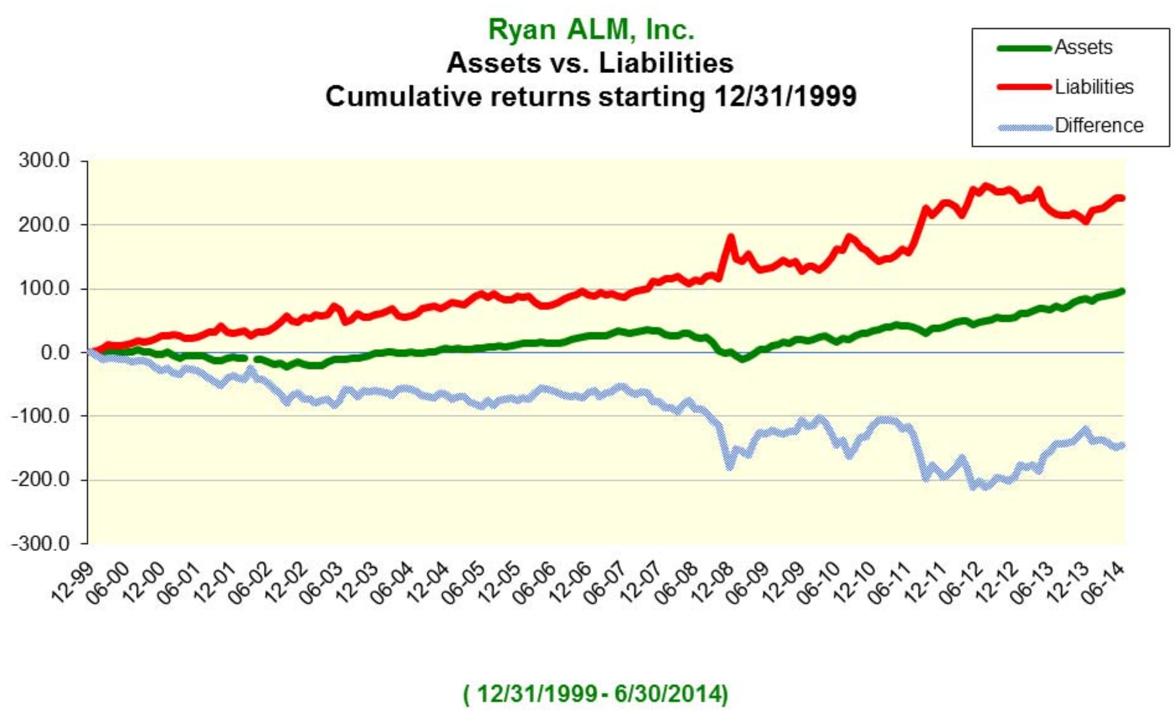
S&P 500 Must Revert to the Mean?

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 20% would have to be counter balanced by a negative growth year(s) to revert back to the mean (20-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 14.88% annualized return (year to date 2014), 32.36% return (2013) and 15.88% return (2012). If the 20-year average return is 9.76% what does that suggest will be the future return for the next few years?

Ryan ALM Pension Scoreboard

The graphs below show asset vs. liability rolling 12 month and cumulative growth since 1999. Ryan ALM Benchmark Liability Index = **241.63%** growth while pension assets = **95.39%** growth for a difference of **–146.24% suggesting any pension Funded Ratio below 174.85% in 1999 has a deficit today on a *market weighted* basis. The Ryan ALM Pension Funded Ratio = 57.19%.**





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 (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 (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

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)

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 (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 thereby reducing the cost and volatility of contributions.