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™

December 31, 2014

Index	Returns YTD 2014	Weights
Pension Liabilities:		
Market (Tsy STRIPS)	24.35%	100 %
ASC 715 (FAS 158)	20.60	
PPA (MAP 21 = 3 Segments)	6.79	
PPA (Spot Rates)	16.51	
GASB / ASOP (8% ROA)	8.00	
Pension Assets:		
Ryan Cash	0.14 %	5 %
Barclay (Lehman) Aggregate	5.97	30
S&P 500	13.66	60
MSCI EAFE Int'l	-4.23	5
Asset Allocation Model	9.74 %	100 %
Pension Assets – Liabilities:		
Market	-14.61%	
ASC 715 (FAS 158)	-10.86	
PPA (MAP 21 = 3 Segments)	2.95	
PPA (Spot Rates)	-6.77	
GASB/ASOP (8% ROA)	1.74	

Using the Asset Allocation above, the difference in pension asset growth vs. liabilities in 2014 was: **-14.61%** (market valuation STRIPS), **-10.86%** (ASC 715), **2.95%** (PPA 3 segment rates), **-6.77%** (PPA-Spot Rates) and **1.74%** (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** **-177.14%** 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	9.74%					
Liabilities	10.13	33.77	4.46	-12.59	24.35%					
Difference:										
Annual	1.76	-30.50	7.33	31.63	-14.61					
Cumulative	-115.67	-195.73	-194.30	-120.74	-177.14					

2014… BAD YEAR for Pensions!

Although assets performed better than the expected ROA (@ 8.00%), they underperformed liability growth significantly (**-14.61%** on a market basis and **-10.86%** on an ASC 715 basis). This will reduce the funded ratio and raise contribution costs. The ***Ryan ALM Pension Funded Ratio*** stands at **53.37%** starting at 100.00 in 12/31/99 (see graphs on page 4).

Best Asset Class Performance in 2014… Long Treasury STRIPS!

According to the Ryan Treasury Index series, long Treasuries, especially long STRIPS, had stellar performance in 2014… their fifth best calendar year returns in history. Since pension and OPEB liabilities behave like long zero-coupon bonds, most pensions have experienced dramatic growth in their liabilities present value last year:

Ryan 30-year Treasury Index (auction issue) = 30.50%
Ryan 15-year Treasury STRIPS Index = 24.73%
Ryan 20-year Treasury STRIPS Index = 34.79%
Ryan 25-year Treasury STRIPS Index = 42.88%
Ryan 30-year Treasury STRIPS Index = 48.42%

"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.**

New Jersey Shocked by GASB 67 Pension Deficit Calculations

New Jersey is the first state to disclose their pension funded status under the new GASB 67 standards which bifurcate the discount rate used to price pension liabilities. The return on asset assumption (ROA) is used until assets are exhausted and then liabilities are priced at a 20-year muni rate. The ROA used was 7.9% and the 20-year muni rate was 4.29%. This significantly lowers the average discount rate which significantly increases the present value of liabilities. In aggregate, the seven state pension funds had an average funded ratio of 32.6% as of June 30, 2014 including a 27.9% funded ratio for public employees and 34.1% for teachers. In contrast, the June 30, 2012 valuation (last data reported) was 49.1% and 59.3% respectively for a funded ratio decrease of 43.2% and 42.5%. Worst is the fact that depletion dates were forecasted when assets are expected to be exhausted… 2024 (employees) and 2027 (teachers). Fitch rated New Jersey's GO bonds "A" with a negative outlook which represents the second lowest rating for a state GO. GASB 67 also requires the use of the more conservative entry age normal cost method which increases pension liabilities. Most states follow this method… except New Jersey.

Judge Rules Illinois Pension Reform Law is Unconstitutional

On November 21, Judge John Belz of the Sangamon County Circuit Court ruled that the pension reform law passed in 2013 is unconstitutional because it violates the state's constitutional clause that pension benefits "shall not be diminished or impaired". The law was intended to save $160 billion over the next 30 years. Attorneys for the state argued that pension benefits could be altered in such crises. The state plans to appeal this decision.

Mystery of the PBGC Deficit

The Pension Benefit Guaranty Corp. (PBGC) annual report released Nov. 17 showed a record deficit of $61.7 billion in 2014. The single-employer deficit actually was reduced from $27.4 billion to $19.3 billion. However, the annual report revealed a $42.4 billion deficit in the PBGC's multiemployer plan program… an increase of more than 5 xs since last fiscal year's deficit of about $8 billion! Without legislative help, the PBGC multi-employer program will run out of funds by 2025. Given a decent stock market, how could this happen over the course of one fiscal year. Blame it on WOODY, the pension pencil (featured in my book: The U.S. Pension Crisis) and how pension funding is calculated. The PBGC ran 500 economic simulations on how plans might look under different market and funding scenarios. Under no scenario will the multiemployer program enjoy a surplus. In more than 73% of the scenarios funds would be depleted in less than 10 years. A significant issue is the withdrawal liability where employers withdrawing from the plans must pay a share of the unfunded liability. This withdrawal liability has made it difficult to attract new employers who would inherit their pro-rata share of this liability.

PBGC Increases Maximum Benefit for Single-Employer Plans

The annual maximum benefit guarantee by the PBGC will increase to $60,136 in 2015 from $59,318 in 2014. Congress mandated this increase but it will not be retroactive. This increase is due to the new premium increases that were enacted under MAP-21 legislation (see my research paper on MAP-21: Friend or Foe on our web site www.RyanALM.com/research). Multi-employer plans tend to get lower benefits guaranteed by PBGC since it is based on years of service not age. A retiree in a multiemployer plan is guaranteed only $12,870 after 30 years of service.

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.**

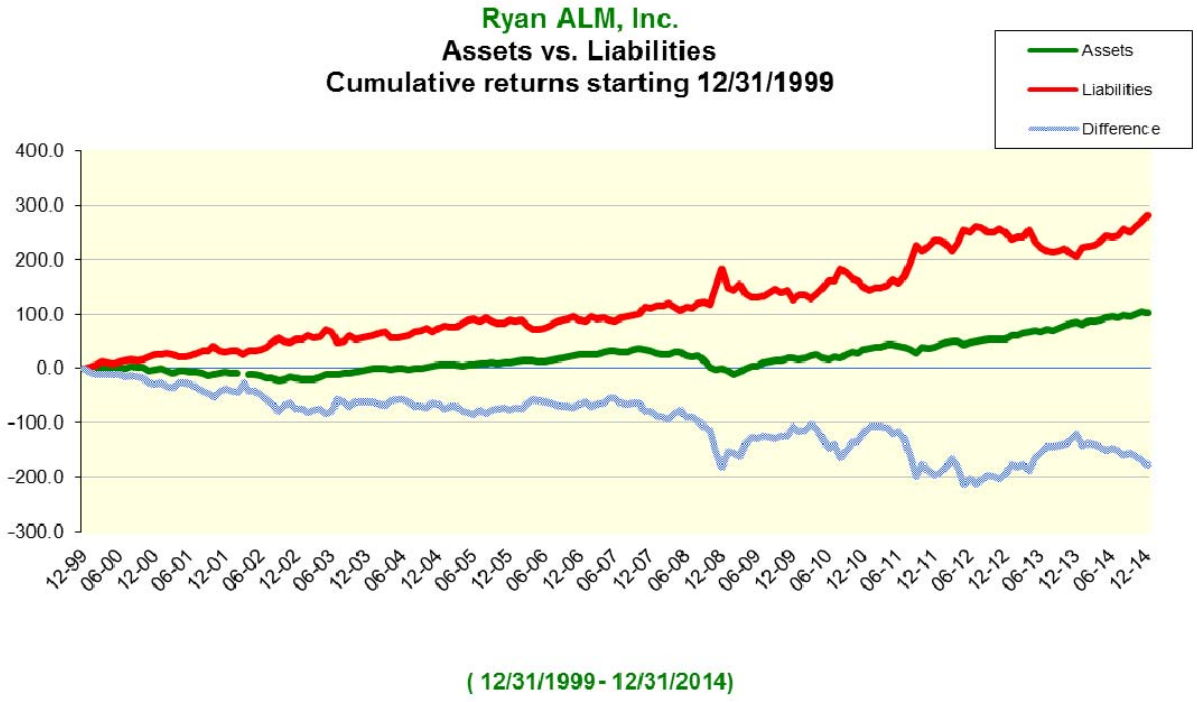
Ryan ALM also creates **Custom Liability Indexes (CLI)** as the proper benchmark for liability driven objectives based on FASB, PPA, GASB and market discount rates. Our CLI is a *monthly index* report that calculates: Present Value, Term Structure, Growth Rates (Returns), Summary Statistics (YTW, MDuration,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

Greek Stock Market Suffers Worst Day in History

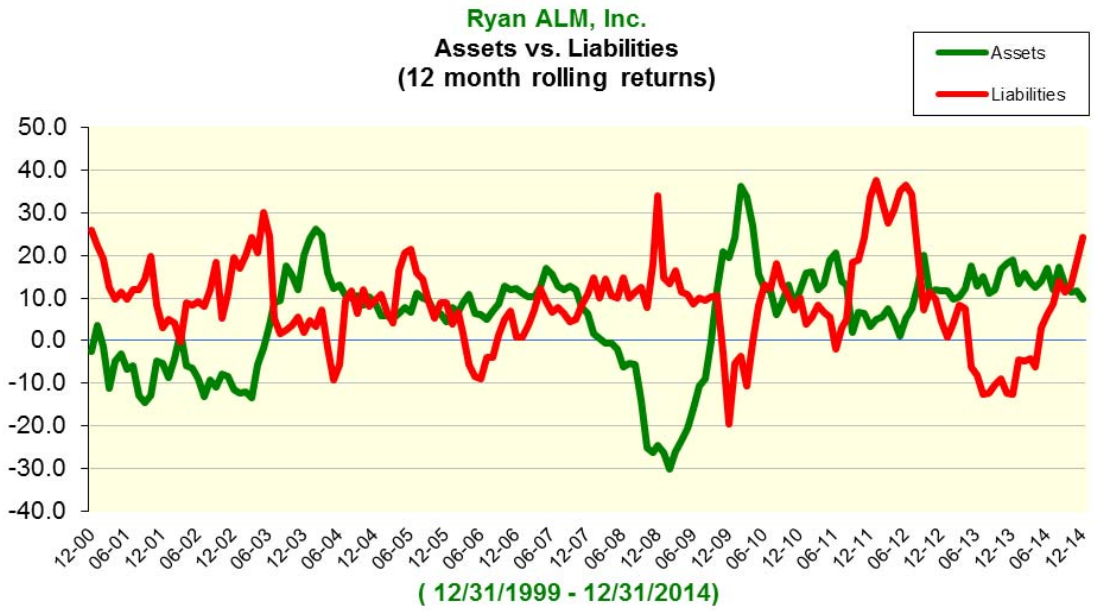
The "Athex" (Greek stock market) dropped -12.78% on December 11. The crash was 32% greater than the 9.7% drop suffered on October 24, 2010. Greece was about to default on its debt at that time. Then it agreed to accept $308 billion in relief from the European Central Bank, the International Monetary Fund (IMF) and other European countries. This time the panic is due to fear of Greece pulling out of the Eurozone which could lead to a rapid dissolution of the entire European Union.

Ryan ALM Pension Scoreboard

The graphs below show asset vs. liability rolling 12 month and cumulative growth since 1999. Ryan ALM Benchmark Liability Index = **279.90%** growth while pension assets = **102.76%** growth for a difference of **–177.14% suggesting any pension Funded Ratio below 187.36% in 1999 has a deficit today on a *market weighted* basis. The Ryan ALM Pension Funded Ratio = 53.37%.**



(12/31/1999 - 12/31/2014)



(12/31/1999 - 12/31/2014)

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

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.