Ryan ALM, inc.

Asset/Liability Management

The Solutions Company

Ronald Ryan, CEO, CFA

The Ryan Pension Letter

September 30, 2012

Index	Returns YTD 2012	Estimated Weights
Liabilities :		
Market (Tsy STRIPS)	4.98 %	100 %
FAS 158 (AA Corporates)	8.72	
PPA (3 Segment)	13.03	
PPA (Spot Rates)	15.19	
GASB / ASOP (8% ROA)	6.06	
Assets :		
Ryan Cash	0.09 %	5 %
Lehman (Barclay)Aggregate	4.00	30
S&P 500	16.44	60
MSCI EAFE Int'l	10.57	5
Asset Allocation Model	11.60 %	100 %
Assets – Liabilities		
Market	6.62%	
FAS 158	2.88	
PPA (3 Segment)	-1.43	
PPA (Spot Rates)	-3.59	
GASB / ASOP (8% ROA)	5.54	

Using the Asset Allocation above, the difference in asset growth vs. liabilities in 2012 was: **6.62%** (market valuation STRIPS), **2.88%** (FAS 158), **-1.43%** (PPA rules-3 segment rates), **-3.59%** (PPA-Spot Rates) and **5.54%** (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 liabilities by about -196.30% since 1999** on a compounded index basis starting at 100 on 12/31/99!

(see **Pension Scoreboard on page 7**)

Total Returns	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Assets	-2.50	-5.40	-11.41	20.04	8.92	4.43	12.25	6.82	-24.47	19.43	11.89	3.27	11.60
Liabilities	25.96	3.08	19.47	1.96	9.35	8.87	0.81	11.76	33.93	-19.52	10.13	33.77	4.98
Diff: Annual	-28.46	-8.48	-30.89	18.08	-0.43	-4.44	11.44	-4.94	-58.40	38.95	1.76	-30.50	6.62
Cumulative		-37.60	-73.40	-60.08	-66.13	-76.75	-64.60	-78.38	-181.57	-106.94	-115.67	-195.73	-196.30

Happy Birthday! Social Security Hits 77 Years Old…will it survive?

Social Security (SS) was enacted into law on August 14, 1935. It has become a cornerstone of America's culture and economic standard of living. Today there are over 61 million recipients of SS. However, the SS foundation has gradually been weakened by demographic trends and economic events which threaten the solvency of this national treasure. Many experts estimate that SS is going bankrupt with a gigantic deficit of around $10 trillion and that the fiscal cliff when the SS Trust Fund is depleted is near (around 2023). 2010 was the first year benefits exceeded revenues. In June of each year, the Social Security Trust Fund (SSTF) invests in new special issue Treasury Securities with a 15-year maturity. The interest rate on these securities is based on a formula set way back in 1960. The formula was designed to protect SS from the vagaries of interest rates by averaging market based bond yields over a three-year period. Each year maturing bonds are reinvested into these new bonds at the single formula rate. Bruce Krasting (hedge fund manager) has calculated that $135 billion matured in 2012 that were earning an average rate of 5.64% and were rolled over into new Treasuries with a yield of only 1.375%. That's a reinvestment cost or opportunity cost of $5.757 billion annually times 15 years = $86.4 billion. Bernanke and the Fed have made it clear that they will keep interest rates low for at least two more years (ZIRP or zero interest rate policy). Bruce has estimated that $543 billion of securities with an average yield of 5.6% will be coming due during the Fed's ZIRP window through 2014. That's another $23.2 billion in annual potential reinvestment loss times 15 years = $347 billion in additional potential reinvestment cost. Originally, SS was a voluntary program with a tax deductible premium of 1% of the first $1,400 of income and benefits were tax exempt. Today, Americans pay 7.65% of their first $90,000 of income with no tax deduction and with benefits taxed as income. When the SS trust fund is depleted (Govt. estimates 2033... Bruce estimates 2023) then the law requires an immediate 25% cut in SS payments since FICA and tax revenues should pay an estimated 75% of the benefit payments.

Closer Look at New Pension Relief Law (MAP 21)… Going Down the Wrong Road!

Pension relief was passed as an amendment to the Highway Construction and Student Loan Act… **Moving Ahead for Progress in the 21st Century Act (MAP-21)**. One might question the relevance of pension relief to highway construction and student loans? The answer is… it will pay for it thru higher taxes by reducing pension contribution costs which enhance earnings. Then one might question what is the true economic relief here? That's a better question. Under the pension funding stabilization provisions of MAP-21 corporations may choose discount rates within a corridor around the PPA 3-segment pension liability discount rates whichever is the closest to the 3-segment rates. Under MAP-21, the current corridor of 90% -110% will expand by 5% each year and stay fixed at 70% - 130% after 2015. Also under MAP-21, the PPA 3-segment discount rate option (there is also a Spot Rate option) corporations will use a 25-year moving average of each segment rather than the previous 24-month moving average discount rates to price liabilities. It is expected that the 2012 25-year average discount rates will be 140-170 basis points higher than the 24-month moving average. This would reduce liabilities by 14% to 26% initially and artificially enhance the Funded Ratio for contribution calculations. For example, a 150 bps. increase in the discount rate could lower the present value of liabilities by $150 to $225 million for each $1 billion of liabilities (based on a 10-year and 15-year average duration). By lowering liabilities, the Funded Ratio improves, contribution costs reduced and earnings enhanced. Under the disguise of providing pension relief from the current 12-year trend of growing contribution costs by lowering the present value of liabilities thereby raising the Funded Ratio, **this law actually increases corporate taxes**… since contributions are tax deductible and hurt tax revenues. The federal government estimates that the MAP-21 legislation will bring in **$9.394 billion in new tax revenues over 10 years**. Moreover, MAP 21 takes funds away from securing the pension fund (contribution) and gives it to the government (taxes). This law also raises the PBGC fixed premium from $35 per participant to $42 in 2013 (20% increase), $49 for 2014 (additional 16.7% increase) and then inflation adjusted thereafter. The variable premium (for unfunded plans below 70% Funded Ratio) will increase from $9 per $1,000 unfunded vested liability to $14 in 2014 and $19 in 2015 (more than double the current rate). The federal government estimates that MAP-21 will bring in **$10.375 billion in new PBGC premiums over the next 10 years**. Please note that the extra taxes and higher PBGC premiums are not included in the CPI inflation calculation but certainly will be an added cost in doing business. Please email us at **Ryancontact@RyanALM.com** for more details on MAP 21.

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

Ryan ALM produces pension discount rates in conformity with ASC 715 (FAS 87/158) by manufacturing an AA corporate zero-coupon bond yield curve since FAS 158 became effective in 2006. We make our discount rate curves available to any corporate plan sponsor, consultant, accounting and actuarial firm usually by the third business day of each month. Our discount rate yield curve is monitored and approved by a major accounting firm. If you have an interest in subscribing to our data, please contact us at… **RyanContact@RyanALM.com.** Moreover, Ryan ALM 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 *daily index* report that calculates: Present Value, Term Structure, Growth Rates (Returns), Summary Statistics (YTW, MDuration, Average Price (Cost)) and Interest Rate Sensitivity.

Public Pension Crisis

Based on the new GASB 66 and 67 accounting rules that bifurcate the discounting of pension liabilities, Moody's estimates that the public pension deficit would be revealed at $2.2 trillion. GASB's new rules require that the fully funded portion of liabilities is discounted at the ROA and the unfunded portion of liabilities is priced at a 20-year AA municipal discount rate. However, based on several experts, (Professors Robert Novy-Marx and Joshua Rauh) if marked to market using Treasury STRIPS (risk-free discount rates) the pension deficit would be over $4 trillion. Moody's has warned that the new GASB discount rates rules would mean bond rating downgrades and increased borrowing costs.

Public Debt Crisis

State Budget Solutions' released its third annual State Debt Report in August showing escalating debt levels. These numbers illustrate that without serious and immediate reforms, lawmakers will be forced to drastically raise taxes and slash services. The highlights of this report are:

1. **States combined debt > $4.6 trillion**
2. Alaska has highest debt per capita at $31,141 per person
3. Alaska, New Jersey, Hawaii, Connecticut Illinois are the highest debt per capita
4. Nebraska, Tennessee, Indiana, Florida and Idaho are the lowest debt per capita
5. Nebraska is the lowest debt per capita at $4,249 per person
6. Highest Debt/GDP = Hawaii (79.21%), New Jersey, Ohio, New Mexico, and Alaska

Cities Bankruptcy Watch!

There is an ugly and unfortunate trend in America of our cities filing for bankruptcy under Chapter 9, Title 11 of the U.S. Bankruptcy Code. This crisis has developed due to unaffordable budgets mainly due to spiking pension contribution costs. For most cities, the annual pension contribution cost is equal to 100% of their budget deficit. Many states are worst but supposedly cannot file for bankruptcy. The moral here is: "Fix the pension costs and you fix the budget costs". Please read my research paper **"The Public Pension Crisis"** by emailing us at **RyanContact@RyanALM.com** which explains in detail how the Public pension crisis happened. There have been 7 filings so far in 2012, 13 in 2011, 6 in 2010, 12 in 2009. The most recent and most notable are:

July 10, 2012 = San Bernardino, CA
June 28, 2012 = Stockton, CA (largest city to file for bankruptcy)
April 14, 2012 = Mammoth Lakes, CA
2011 = Jefferson County, AL (largest bankruptcy = $4 billion in debt)
2008 = Vallejo, CA
1994 = Orange County, CA

WARNING! Capital Appreciation Bonds

In an effort to finance schools and other projects at the least budget expense, some municipalities have issued capital appreciation bonds. These long-term bond offerings are similar to zero-coupon bonds where the principal and interest is paid at maturity. As a result, there is no expense until maturity which could be many times the size of the offering. California school authorities have issued these instruments. Oceanside Unified borrowed $30 million and will repay $280 million, Escondido borrowed $27 million and will repay $247 million and San Diego Unified borrowed $164 million and will repay $1.2 billion. Unless these costs are escrowed or defeased there will be a moment of repentance when these payments come due.

Bankruptcy Denied by Judge

Northern Marianna Islands (U.S. possession) filed for Chapter 11 bankruptcy protection in April due to $642.6 million pension deficit. Judge Robert Faris denied the case because the pension fund was a "governmental unit" not eligible for bankruptcy relief. He ended the case by citing the trustees "should be praised, not criticized for commencing this case."

If Elected President

Given that we are now in the stretch run of an election year, I thought I would offer some ideas for the candidates. Hopefully, you find them entertaining and even useful. I would appreciate any critiques sent to **rryan@ryanalm.com** :

1. Rank Golden Parachutes as Debt in Bailouts/Mergers – Golden parachutes that award key executives with incredible severance packages should be positioned as junior debt of the firm. This means that they get paid *after* senior creditors. This would provide discipline and incentive for these executives to take care of all senior creditors.

2. Give the President a Line Item Veto - Many, if not most, Bills presented before Congress get amendments added ("earmarks") to promote and fund pet projects of our congressmen. These amendments usually have nothing to do with the topic of the Bill being passed but wise politicians realize that they can get their special interests funded if the Bill is favorable to the House and Senate. The President should be allowed to cut the fat and excessive spending by vetoing any of these line item amendments.

3. Quit Stealing from Social Security – The federal government consistently borrows the so-called Social Security surplus each year and spends it on general budget expenditures. Congress has borrowed over $2 trillion over the years and plans to borrow over $200 billion this year. According to a new book "Stop the Raid" by Dennison Smith and Peter Ferrara, they estimate that taxpayers will pay an additional $6 trillion from 2017 to 2041. Art Linkletter writes in the foreword, "What was a much-needed means of social security in the 1930s has become an ATM machine for Congress rather than securing and guaranteeing a portion of our retirement".

4. Reduce Our U.N. Costs – The U.N. was a well-conceived idea that has gone sour for America and other Nations over the 59 years of its existence. The central purpose of the United Nations is to preserve peace. Under the charter, member states agree to settle disputes by peaceful means and refrain from threatening or using force against other States. America bears the burden for a great portion of the U.N. costs (@ 30%) but we only have equal vote with the other 192 nations. There needs to be a more equitable sharing of costs. The site of UN headquarters consists of 18 acres owned by the UN not America!

5. Require Less Dependence on Foreign Oil - Given the escalating and high cost of oil we continue to feed these foreign oil exporting countries with great wealth, some of whom are considered our enemy (i.e. Venezuela). We need to reduce our dependence on foreign oil. We need to be self-sufficient on such a dependent commodity. We need to allow more exploration in our own oil deposits (i.e. Alaska and off shore Florida). We need to promote other sources of fuel as a replacement for oil, especially flex-fuel (alcohol based fuel). We need to find a replacement for the internal-combustion engine. After 100 years, can't we find a more energy efficient and cost effective alternative to run our cars and trucks (i.e. CNG)? Congress needs to act quickly to promote the proper incentives plus place penalties (taxes) where companies do not behave in the best interests of the American economy (i.e. gas guzzling cars). Most of these foreign oil export countries have built a Sovereign Wealth Fund of incredible size. This is most commendable to these countries as they save and invest during their good times (surplus) protecting and ensuring their future. Where is America's Sovereign Wealth Fund? Why don't we ever run a Surplus economy? What role do oil lobbyists play in our energy demise?

6. Increase IRA Allowance – As we prepare for a Social Security crisis, American taxpayers should be allowed to provide for their retirement. The IRA has been a great invention but limited. We need to allow our citizens to provide for their own retirement. We need to raise the limits on what taxpayers can allocate to their IRA plan. At current IRA allowances plus Social Security benefits, most Americans would be hard pressed to meet retirement costs. Why not allow a 20% + allocation to an IRA. The government still gets paid in taxes. The only question becomes are taxes paid upfront (Roth IRA) or deferred.

7. Make Healthcare Assets Tax-Exempt - We are currently facing the largest financial disaster in America's history: how to pay for Healthcare benefits (OPEB). Pensions were given an incentive to prefund pension liabilities by making them tax-exempt. However, healthcare assets do not have the same tax treatment. As a result, employers are reluctant to prefund. Instead of funding these future liabilities at 50 to 60% cost thereby saving 40 to 50% most institutions (corporate and Public) have chosen a pay-as-you-go strategy which funds such liabilities at 100% cost. Treat OPEB assets the same as pension assets … make them tax-exempt!

8. Reduce Taxes – If our Declaration of Independence is correct that all men are created equal then perhaps we should treat our citizens the same way. Robbing the rich to give to the poor may be a Robin Hood value but does not work in a capitalist system. We need to motivate the rich to live and work in America. A FLAT INCOME TAX would be a fair system which would eliminate much cost of preparing those arduous tax forms and generate as much revenue as the government gets today with great cost savings. We also need to reduce the corporate income tax which is now the highest in the world to attract and keep corporations in America. We need to create an environment that motivates the most productive people and companies to live, build and work here. In this way, they will in turn hire more people and spend more in our economy. We should also make permanent the lower capital gains tax rates and eliminate double taxation of dividends to motivate economy activity.

9. Find and Buy Low Cost Manufacturing - America has steadily lost its manufacturing to the rest of the world due to our higher labor costs and taxes. We need to find a way to produce our goods cheaper where the production facilities are on our soil. It's time we become more self-dependent, especially on any critical goods and services. As we see with oil, any dependence on foreign goods here can be harmful to our economy. Why not buy a less developed country to be a low cost provider where we send our intellectual property to teach a low cost labor force. We do not want them to come to America where they would have to be paid at least our minimum wage, move away from family and live a life style they are not used to or perhaps want. Remember, most of America's land mass was purchased! Our key cities and environmental resources were purchased (Manhattan, Louisiana Purchase, Alaska, etc.). I would think that Haiti is an ideal candidate. It is close to our shores with the third largest land mass in the Caribbean. I would think that we could buy this undeveloped country for a lot less than the Iraq war costs. I am sure that the Haitians would welcome becoming a U.S. possession that would upgrade their way of life. U.S. possessions can work too (i.e. Puerto Rico, Samoa) which have become entitlement areas that are a drain on the U.S. economy… put them to work thru private capital incentives!

10. Bring back Investment Tax Credit - We are losing our manufacturing steadily to the rest of the world for many years now. We need incentives for corporations to do the right thing for America. Build plant and equipment here in America, hire more Americans! Create tax incentives for companies to build plant & equipment (i.e. jobs) in America. The ITC has always worked … we need a strong *corporate* America.

11. Legalize National Lottery - There are about 38 states that have a state lottery. For many states, this is the second or third largest revenue for that state. We need to find ways to finance and support Social Security and Medicare without taxing our citizens. A National Lottery with revenue dedicated to SS and Medicare would be a big help.

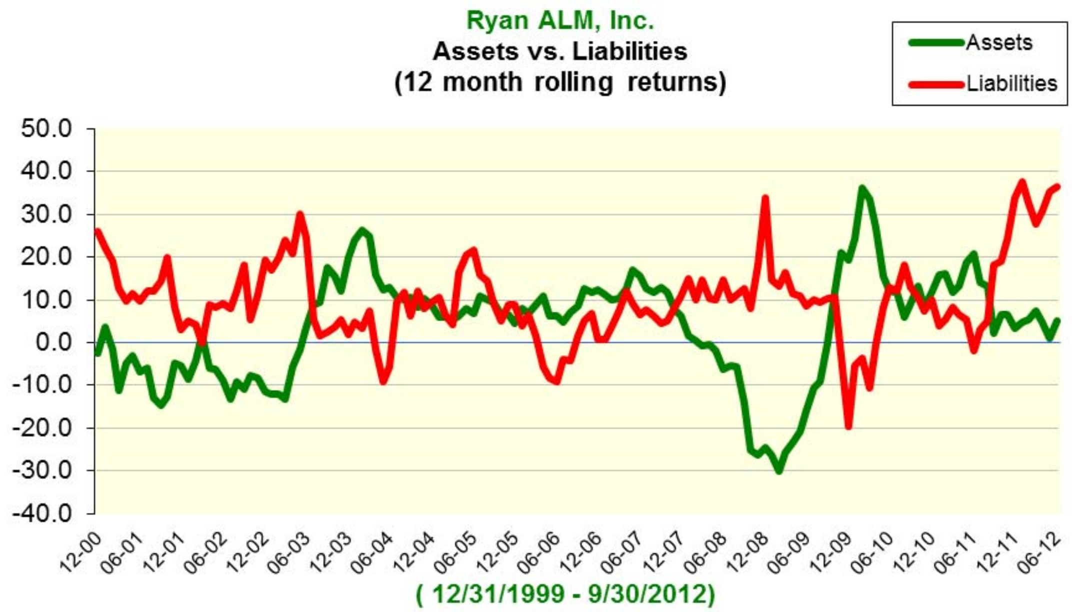
12. Sell our Gold – Since we left the Gold standard many decades ago, there is no economic reason to hold this commodity. Given the fact that Gold is now at an all-time high price ($1,571.90 per troy ounce) and our economy needs a stimulus (other than raising taxes) this might be a proper strategy and certainly good timing. As of August 30, 2011, the U.S. owned 8,133.5 tonnes of Gold (Germany has 3,412.60, IMF = 3,217.3, Italy = 2,451.8, France = 2,450.7, China = 600 and the UK = 310.3). There are 32,551 troy ounces in each tonne. This would value our Gold reserves at $416,166,118,606. Such a new found wealth could help 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).

13. Get rid of Electoral College - This antiquated system is in defiance of our Declaration of Independence which states that all men are created equal. Each American should get an equal vote in our elections. Anything less or more contradicts our heritage. In the history of the U.S. Presidential elections there were four moments when a candidate won the office by electoral votes but lost the popular votes:

1824 = John Quincy Adams beat Andrew Jackson (lost Popular votes by -10.44%)
1876 = Rutherford Hayes beat Samuel Tilden (lost Popular vote by -3.00%)
1888 = Benjamin Harrison beat Grover Cleveland (lost Popular vote by - 0.83%)
2000 = George Bush beat Al Gore (lost Popular vote by -0.51%)

Pension Scoreboard

The graphs below show asset vs. liability rolling 12 month and cumulative growth since 1999. The cumulative growth difference is **–196.30% suggesting any pension Funded Ratio below 226.69% in 1999 has a deficit today on a *market weighted* basis**



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/Mergent 1-30 year Treasury Maturity Ladder (PowerShares ETF = PLW)

On October 11, 2007 PowerShares launched a fixed income ETF **(PLW)** 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)

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.

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 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.