Pension Solutions

Synergy of:

ASC 715 Discount Rates
+
Custom Liability Index
+
Liability Beta Portfolio™

Ryan ALM provides three synergistic products that when combined produce a turnkey system that will reduce pension costs and risks. All of these proprietary products are unique in the pension industry and best comply with accounting standards and fiduciary goals.

Ryan ALM, Inc.

The Solutions Company
1-561-656-2014
www.RyanALM.com

ASC 715 Discount Rates

Objective

Provide discount rates to price liabilities in compliance with ASC 715 (formerly FAS 158) for GAAP accounting balance sheet purposes.

Methodology

Ryan ALM provides *four distinct discount rate yield curves* that best conform to GAAP requirements. Each curve is comprised of hypothetical AA corporate zero-coupon bonds from 0.5 -30+ years to maturity:

High End Select	**(top 10% yielding bonds)**
Top 1/3 Curve	**(top 33% yielding bonds)**
Above Median Curve	**(top 50% yielding bonds)**
Full Curve	**(all 100% yielding bonds)**

In addition, Ryan ALM provides a ***cash flow matching*** discount rate yield curve as a *custom* discount rate based on the unique liability cash flows of each pension plan. This discount rate methodology should provide the highest yields and lowest liability valuation.

Yield curves derived from actual AA/AAA corporate bonds placed into 8 maturity bands:

1.01 - 3.00 years	**7.51 – 9.50 years**	**24.01 – 27.00 years**
3.01 – 5.00 years	**9.51 – 17.00 years**	**27.01 + years**
5.01 – 7.50 years	**17.01 – 24.00 years**	

Parameters of Eight (8) Maturity Bands:

Ratings	AA+
Minimum Issue	$100 million
Currency	U.S. Dollar Denominated
Coupon	Non-zero, fixed coupon bonds
Maturity Type	Option Free (Non putable or callable)
Issue Type	Publicly traded U.S. Corporate bonds
	Private placements with 6 months seasoning
	No Foreign Agencies, Govt. or Supranationals
Pricing	Excludes bonds priced outside $55 - $145 range
Yields	Excludes YTM >2.0 STD from the average YTM

Highlights

Price Waterhouse Coopers is a subscriber to our discount rates as well as actuarial firms.

Benefits

1. Ryan ALM discount rates consistently higher than Citigroup
2. Offer four distinct discount rate yield curves in conformity to ASC 715
3. ***Cash flow matched*** discount rate that should produce highest discount rates
4. Ryan ALM discount rates used by Price Waterhouse Coopers and actuarial firms

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Custom Liability Index (CLI)

Creation **1991 by Ronald J. Ryan, CFA**

Objective

To measure and monitor *monthly* the risk/reward behavior of each client's unique liability cash flow schedule based on the actuarial projected benefit payment schedule and projected future contributions. The CLI is the proper **pension benchmark index**.

Methodology

The CLI starts with the client's actuarial projected benefit payment schedule. The CLI will then calculate:

1. **Present Value** using an assortment of Discount Rates:
   - **GASB 67** = ROA until assets exhausted and then 20-year muni
   - **AA Corporates** = conforms to ASC 715, rates Moody uses for Credit Rating
   - **Market** = Treasury STRIPS (risk-free)

2. **Present Value with and without projected Contributions.** CLI will use projected or frozen Contributions based on client's target cost. Contributions are a future asset and should be included in Funded Ratio/Status. Contributions fund liabilities initially such that current assets fund ***net*** liabilities.

3. Series of ***monthly*** reports:
   - **Structure** = shows vital statistical summaries (PV, YTW, MDuration, etc.)
   - **Performance** = calculates month, quarter, year and cumulative growth (return)
   - **Interest Rate Sensitivity** = calculates projected growth + ending present value based on four interest rate scenarios

Benefits

1. Calculates Present Value to update Funded Ratio / Status monthly
2. Calculates Net Liabilities after Contributions
3. Asset Allocation should be responsive to Funded Ratio
4. Asset Management needs CLI to manage assets vs. liabilities
5. Performance Measurement needs CLI to measure asset growth vs. liability growth
6. Provides *economic books* recommended by Society of Actuaries to calculate the true economic Funded Ratio
7. CLI shows significant difference between accounting and economic valuations
8. CLI shows great difference between gross and net liabilities (after Contributions)

Highlights

Ronald J. Ryan, CFA was the former Director of Research at Lehman Bros. where he designed most of the popular Lehman bond indexes. In 2007, he won the prestigious ***William F Sharpe Index Lifetime Achievement Award***.

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<u>Liability Beta Portfolio™ (LBP)</u>

Creation 2010

Objective

To **de-risk** the pension gradually and reduce Contribution costs. The LBP will match and fund liabilities at the lowest cost and risk to the pension plan.

Methodology

The LBP is a **cash flow matching** product. Our LBP is a **cost optimization model** that searches and calculates the lowest cost portfolio that will match and fund the projected liability benefit payment schedule. This requires numerous iterations. The LBP model buys longer maturities with much higher yields whose cash flows (interest income) will fund shorter liability benefit payments at lower cost. Longer maturities + higher yields = cost savings. **Cost savings estimated at 8% to 12%** (back tested since 12/31/09) of present value of liabilities.

Requires projected benefit payments schedule
Universe = A/BBB corporate bonds
No credit > 3% of LBP model
Skewed to longer maturities

Benefits

The LBP model will produce significant and numerous benefits to the pension plan:

Outyield liabilities by @100 bps (vs. AA corporate discount rates)
Ryan ALM fee 50% to 75% less than active bond management
Outyield active bond management… enhances ROA
Reduces Contribution costs (@ 8% to 12%)
Reduces Volatility of Funded Ratio/Status
Reduces Interest Rate Risk

Note

Duration matching and LDI strategies are *not* cost efficient strategies. They usually fund each liability with a bond with the same duration. A five-year liability funded with a five-year duration bond will cost 4% more than using the LBP model to cash flow match liabilities. Since there are no zero-coupon corporates and corporate coupon bonds durations peak around 16 years this requires Treasury STRIPS to fund liabilities thereafter. The **LBP model is 26% less costly than Treasury STRIPS and 8% -12% less costly than long AA corporates**.

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