



Cash Flow Matching

Pension Objective	Fund benefits in a cost-efficient manner with prudent risk
Pension Needs	Liquidity to fund benefits Reduce Contribution costs Reduce Volatility of Funded Status
Strategy	Cash flow match liability cash flows (benefits + expenses)
Value in Bonds	Certainty of cash flows (only asset class with such value) Maturity selection = yield curve (term structure) Cash flows every month as portfolio
Methodology	Ryan ALM creates a Custom Liability Index (CLI) <ul style="list-style-type: none">• Provides all calculations needed for ALM• Based on actuarial projections of B+E• Discount rates = ASC 715 and ROA Ryan ALM creates Liability Beta Portfolio (LBP) <ul style="list-style-type: none">• Cost Optimization Model• Investment grade bond portfolio• Target area of liabilities to fund <i>chronologically</i>• Cash flow matches + duration matches liabilities
LBP Benefits	Fully funds B+E and secures benefits with certainty Reduces funding costs by 2% per year (1-10 years = 20%) Eliminates cash sweep of growth assets (Alpha assets) Buys time for Alpha assets to grow unencumbered Reduces volatility of funded ratio/status Outyields liabilities creating alpha Enhances funded status and ROA Reduces Contribution costs Mitigates interest rate risk Hedges pension inflation Low fee

Note:

LBP does not change any accounting, actuarial and asset allocation (AA) actions.

LBP is a less risky & less costly alternative to active bond management.

LBP is a best fit to the true pension objective.



Interest Rate Risk (IRR)	Biggest and dominant risk on bonds present values (PV) Benefits + expenses = future values (FV) B+E are not interest rate sensitive LBP funds Benefits + Expenses LBP mitigates IRR
Pension Inflation	Actuarial projections unique to each pension plan Inflation assumptions \neq CPI
Generic Bond Indexes	Not a proper benchmark Do not represent pension liabilities Liabilities are like snowflakes, unique to each plan sponsor Only a Custom Liability Index could measure/monitor liabilities
Value Added	Ryan ALM offers clients a series of synergistic values: Experience Model Educators Indexes Focus Team Fees Expertise More than 160 years with more than 40 years in cash flow matching Proprietary cost optimization model unique in the bond business Wealth of fixed income research produced over the last 50 years Separate division to create Custom Liability Indexes (CLI) Dedicated to only one asset management product Four asset managers working as a team Very low at 15 bps (includes CLI) Award winning bond expertise
Awards	Gold Medal Winner – <i>The U.S. Pension Crisis</i> book of the year Bernstein, Fabozzi, Jacob Levy – Research Paper of the year William F. Sharpe Index Lifetime Achievement Money Management Letter Lifetime Achievement Capital Link – Most Innovative ETF IMN - ETF of the year