LDI Benchmark

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I often read pension research that says the first step in LDI or asset liability management (ALM) is to **install a LDI Benchmark**… we agree. The research will usually promote the firm's customized LDI solution. Often the research will compare their LDI strategy to a generic long duration corporate bond index… we disagree.

Pension assets need to know what they are funding. In truth it is ***NET*** liability cash flows defined as (Benefits + Expenses) – Contributions or (B+E) – C. Since contributions are the first source to fund B+E, assets are funding the net liability cash flows. Actuaries do not calculate these net liability cash flows. This is solved through the creation of a **Custom Liability Index (CLI)**. In 1991, the Ryan team designed our CLI as the proper pension benchmark. The CLI is the best fit for what assets need to fund since it is specific to that plan's unique liabilities. The CLI can be further customized to calculate total net liabilities or just net Retired Lives or a chronological piece of total net liabilities or Retired Lives (i.e. 1-10 years).

LDI Benchmark Requirements

Transparency	Assets need to know what they are funding = monthly net liability cash flows. This has to be calculated based on the client's actuarial projections (customized) since actuaries do not provide this calculation.
Discount Rates	Liabilities should be priced as zero-coupon bonds based on market value (MV) not actuarial valuations… just like assets. Best choices are ASC 715 and Treasury STRIPS as discount rates. This allows for the proper comparison of assets vs. liabilities.
Monthly	Benefits and expenses are paid monthly so the LDI benchmark needs to recognize and show monthly net liability cash flows. It is also helpful if the benchmark is produced as monthly reports (just like generic indexes) so you can compare and monitor the risk/reward behavior of assets vs. liabilities.
Statistics	In order to have an effective LDI or ALM asset management, the assets need to know several statistics. Such statistics should include: Interest Rate Sensitivity test Monthly Future Values Term Structure % Growth Rate

A common LDI strategy is duration matching where asset managers try to match the *average* duration of liabilities to immunize the pension plan from interest rate sensitivity. This strategy fails to realize that liabilities are a term structure and yield curve. You need to match all the liabilities (term structure) to correctly immunize the plan. Having the above mentioned statistics is critically important in this process.

Solution: Custom Liability Index (CLI)

Economic Books The Society of Actuaries (SOA) released a research paper titled "Principles Underlying Asset Liability Management (ALM)" in 2004 that said: "A consistent ALM structure can only be achieved for economic objectives. Accounting measures can sometimes *distort* economic reality and produce results inconsistent with economic value. Because ALM is concerned with the future asset and liability cash flows, the natural *focus of ALM is economic value*."

Translation: Pension plans need to create a set of "*economic books*" so ALM can function effectively. A *Custom Liability Index* is the method to create economic books.

Discount Rates The best fit to calculate economic value is to price the net liability cash flows at market value. ASC 715 (FASB requirement) and Treasury STRIPS are the best choices as discount rates. Ryan ALM is an **ASC 715 vendor** since FAS 158 became effective in 2008 providing four yield curves in conformity to ASC 715 monthly.

Growth Rate The Ryan ALM **CLI** calculates the growth rate of liabilities so performance measurement can be ascertained (if needed). Ryan ALM will produce a companion report (Performance Attribution Report or PAR) that compares assets vs. liabilities with 14 measurements of relative risk/reward behavior.

Statistics The CLI will calculate all the statistics needed for efficient LDI or ALM to fund net liability cash flows.

Monthly The Ryan ALM Custom Liability Index (CLI) is a monthly report.

WARNING: Pension liabilities are like snowflakes… you will never find two alike. Generic bond indexes could never replicate these unique net liability cash flows and should **never be used as a LDI benchmark**.

"Given the wrong index benchmark… you will get the wrong risk/reward behavior"
Confucius