How Bonds Can Enhance the ROA

by
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Given the volatility and uncertainty of the financial markets today not to mention an inflationary trend to higher interest rates, bonds can provide a solution through the certainty of their cash flows. Most pensions focus on earning the return on asset (ROA) assumption as the goal of asset allocation. Because bonds yield less today than the ROA (7.00% average) the asset allocation to bonds tends to be low, if not very low. But the bond allocation could enhance the ROA. Here's how:

1. **Cash Flow Matching** – if bonds were used to cash flow match and fund net liabilities (after contributions) *chronologically* they would produce the liquidity needed to fully fund such net liabilities. Cash flow matching works best with longer coupon bonds where you use semi-annual interest income to partially fund liabilities. A 10-year bond has 20 interest cash flows + one principal cash flows all priced at a 10-year yield. This would eliminate the need to do a *cash sweep* of other asset classes which is a common liquidity procedure. According to S&P data, the S&P 500 has 48% of its historical returns from dividends and reinvestment since 1940 on a 10-year rolling period basis. Wouldn't you want to reinvest dividends back into growth assets rather than spend it on funding benefits + expenses? By using bonds as the liquidity assets, the growth assets are left unencumbered to grow. The longer the cash flow matching period, the more time the growth assets have to compound their growth. This could significantly enhance the ROA.

2. **Yield on Bonds** – the asset allocation models forecast the return of each asset class in the model, then weight each asset class to get the derived ROA for total assets. The ROA for most asset classes is based on the historical returns of each asset class index benchmark except for bonds. The *current yield* on the bond index benchmark(s) is usually used as the forecast for bond returns. The Bloomberg Barclay Aggregate is most favored as the bond index benchmark. This index and almost all bond index benchmarks were designed at Lehman Bros. by me (Ron Ryan) when I was the head of Fixed Income Research & Strategy from 1977 to 1982. The Aggregate is a very large and diversified portfolio of bonds with the following summary statistics as of March 31, 2022:

# of issues	**9,982**	Treasury	**39.76%**	AAA	**68.92%**
YTM	**2.92%**	Agency	**4.04%**	AA	**2.92%**
Duration	**6.58 yrs.**	Mtg. Backed	**29.91%**	A	**11.16%**
Avg. Maturity	**8.78 yrs.**	Corporates	**26.29%**	BBB	**15.38%**

As a result, most asset allocation models would have a ROA for bonds of about **2.90%**. If you can build a bond portfolio that outyields the Aggregate index, by definition, it should

enhance the ROA for total assets. Ryan ALM Advisers, LLC has created a cash flow matching product we call the **Liability Beta Portfolio™ (LBP)**. The LBP is a cost optimization model that cash flow matches liability cash flows chronologically at the lowest cost from a corporate bond portfolio skewed to A/BBB bonds. Based on the actuarial projections of each client we initially build a Custom Liability Index (CLI) to calculate **net liabilities** ((benefits + expenses) – contributions) chronologically. The CLI provides all the data needed for the LBP to function efficiently. Based on the allocation to the LBP will determine how far out the LBP can fully fund net liabilities. Usually, a 15% allocation to the LBP can fund 1-7 or 1-10 years of net liabilities. The longer the term structure of the LBP, the higher the yield. The LBP will outyield the Aggregate index by 50 bps (1-5 years) to over 100 bps (1-10 years) based on the LBP term structure. If the LBP outyields the AGG index by 50 to 100 bps, asset allocation can afford to overweight the bond allocation and still meet the target ROA for total assets. A 15% allocation to a yield of 4.00% is 60 bps value added to the ROA while 15% at 3.00% is only 45 bps. Said differently, you would need a 20% allocation to a bond total return focus versus the Aggregate to equal the same ROA value as a 15% allocation at a yield of 4.00%.

3. **Higher Interest Rates –** bonds are interest rate sensitive as to their market value (present value). This may or should cause negative returns. However, cash flow matching is focused on funding B + E which are future values. Future values are not interest rate sensitive. Bonds are the only asset class with the certainty of cash flows (future values). That is why bonds have always been used as the methodology for defeasance (cash flow matching) of liabilities. Moreover, if interest rates trend upward any reinvestment of cash flow can buy future value at a lower cost. As a result, cash flow matching sees higher interest rates as an opportunity to reduce funding costs.

4. **Cash** – many pension plans have a cash allocation of around 3% to 5%. Cash is the lowest yielding asset. Since the LBP becomes the liquidity assets to fully fund benefits + expenses chronologically, there is little need for cash to fund B+E. Cash might be needed for capital calls on Private Equity and Alternative Investments. The LBP should significantly increase the yield margin versus cash since the LBP is using coupon income from all maturities of the LBP. With the LBP fully funding B+E, the cash allocation can be reduced to around 1%. Replacing most of the cash allocation to fund B+E with the LBP allocation is another ROA enhancement… it all adds up.

"Where is the knowledge we have lost in information"
T.S. Eliot