

In Focus

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Liability-Driven Investing: PIMCO's Innovative Approach to Custom Solutions

Liability-driven investing is, by nature, a custom endeavor. Essentially, the aim of a liability-driven investment solution is to customize a portfolio that will hedge the fundamental risk characteristics of an institution's liabilities. Because no two institutions have the same liabilities, no two liability-driven investment solutions will be exactly the same.

While liability-driven investment (LDI) solutions are necessarily unique, nearly all share the same fundamental objectives. First, the performance of an LDI portfolio should be benchmarked against the institution's liabilities. Second, an LDI solution should be flexible enough to adjust to changes in liability assumptions/forecasts in an efficient and cost-effective manner. Third, an LDI solution should incorporate the potential for alpha, or returns in excess of those needed to meet liabilities, which is what distinguishes an LDI approach from rigid cash-flow matching that relies on numerous and often imprecise assumptions.

These fundamentals underlie PIMCO's approach to creating custom LDI solutions for those clients seeking a separate account. PIMCO's approach begins with a thorough analysis of our client's liabilities and the risk factors associated with the liabilities. Based on this analysis, we construct a preliminary custom benchmark. The initial benchmark is then optimized to mirror the risk profile of the liability structure, minimize the mismatch in risk factors and quantify acceptable tradeoffs. PIMCO then works with each client to agree on a custom benchmark, which will be used by the portfolio manager to construct and actively manage the portfolio with the goal of enhancing returns while managing portfolio volatility relative to the benchmark. Finally, PIMCO works with the client on an ongoing basis to monitor the LDI benchmark and portfolio for any necessary fine-tuning.

In this article, we explore each of the steps in PIMCO's LDI approach in more detail and how this process results in a flexible LDI solution that can adjust to changing liabilities while also incorporating the potential for alpha.

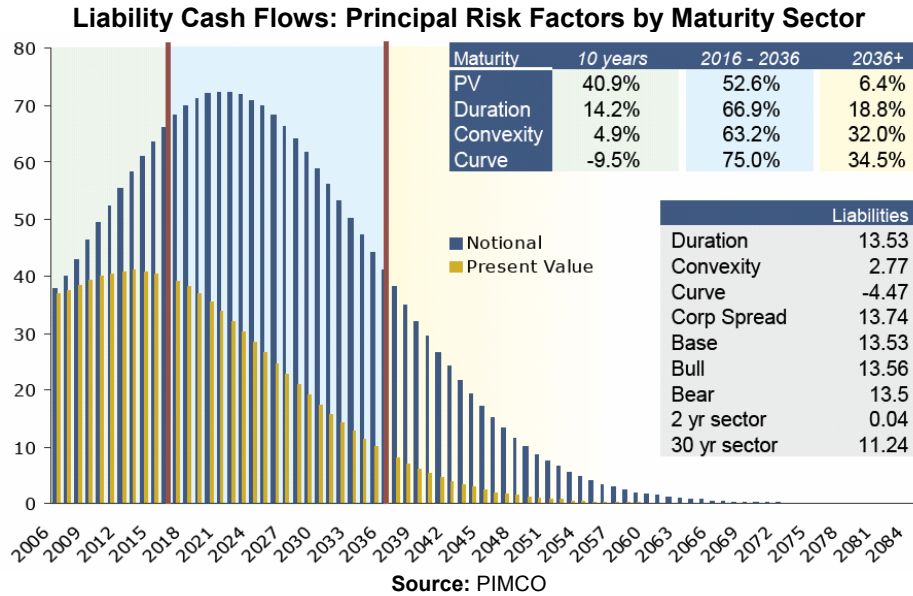
Liability Analysis: Cash Flows as a Security

The first step in PIMCO's LDI approach is to analyze our client's liability cash flows as if they were a security or portfolio of securities. We enter liability cash flow data into our proprietary "Optimizer" tool to determine the sensitivity of the cash flows to a range of market variables, such as yield curve shape, currency, inflation and credit spreads (see the illustration below for a hypothetical example of PIMCO's analysis of liability cash flow risk factors for a relatively mature pension plan using the "Optimizer"). We also conduct a series of "stress-tests" to evaluate the risk characteristics of the liability cash flows across a variety of market scenarios.

In analyzing liabilities, we employ the same tools and risk measures we use on a day-to-day basis to monitor securities in the firm's existing accounts and indices. Thus, our analysis of liability cash flows is consistent with the analysis of security cash flows we

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employ later in the process when we construct the custom LDI benchmark to match the risk profile of the liabilities.



Building the Custom Benchmark

Once we have analyzed the risk profile of the liability cash flows, PIMCO's analytics team uses Optimizer to build a preliminary benchmark of liquid fixed income securities and/or indices to reflect the liability cash flow characteristics. It is important that the securities or indices chosen are liquid as these will be updated daily in PIMCO's risk management system. Illiquid securities may provide inaccurate results and higher tracking error of the benchmark to the liability stream.

When constructing the preliminary benchmark, we can set parameters around risk tolerance on specific risk measures such as duration, yield curve sensitivity and convexity. For example, we can specify that Optimizer seek a benchmark that exactly matches the duration of the liabilities, while allowing some latitude on other risk measures, such as curve sensitivity or convexity, to allow for a benchmark with a desired credit profile or a benchmark with a slightly higher yield.

Next, we fine-tune the benchmark in an effort to correct any mismatches between the preliminary benchmark and the liability stream. Using Optimizer, we can substitute specific securities in the benchmark and instantly calculate the effect of each risk measure until we obtain a relatively close match between the benchmark and liabilities. The number of securities or common indices included in the client's customized benchmark is directly related to the number of risk measures we are attempting to optimize and the individual liability cash flows. Obtaining an ideal solution for some liability streams may require short positions or derivative securities, such as swaps and "STRIPS" (Separately Traded Registered Interest and Principal Securities, or bonds

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that pay no interest because they have been “stripped” of their coupon, also known as zero-coupon bonds). In these cases, client guidelines will determine the degree of precision achievable or desired.

Continued Monitoring and Active Portfolio Management

PIMCO’s optimization process produces a benchmark that closely reflects the risk profile of the liabilities and is flexible enough to adapt to changes in liabilities. We work closely with our clients to regularly update the benchmark to reflect changes in the payment stream and preserve the match between the benchmark and the liabilities.

Once the benchmark is established, PIMCO’s portfolio managers construct a portfolio with risk characteristics similar to the benchmark. PIMCO actively manages this portfolio in an attempt to capture available market opportunities and add alpha, employing the same investment process and strategies we use in managing other portfolios to outperform a benchmark subject to client guidelines and risk tolerance.

Conclusion

PIMCO’s approach creates a flexible LDI solution that can help institutions hedge the risks associated with liabilities while retaining the potential for alpha. Focusing on liability risk factors allows us to easily adapt an LDI solution to changes in cash flows and avoid the spurious precision associated with attempting to exactly match liability cash flows.

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