Allspring

Doing LDI Well in 2023 and Beyond

+ Best practices in LDI are ever evolving. This paper reflects our latest thinking on design and implementation.
+ The improvements sought are more efficient and effective hedges, improved cash flow management, more diversified risk, awareness of climate transition, improved yield, and higher expected alpha.
+ The key tenets can be embraced in simpler structures for smaller plans as well as more sophisticated structures for larger plans.

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Executive summary

A good liability-driven investing (LDI) portfolio blends the positive characteristics of being a good hedge to liabilities with good diversification of risk, yield, alpha, and income. This might sound obvious, but in practice, we believe investors can often make meaningful improvements on both fronts by incorporating the latest thinking on design and implementation as best practices evolve.

DESIGN

We believe that hedge ratios—covering both Treasury yield and credit spread risk factors—are superior to the customary asset allocation approach because they are more deliberate and controllable. For more sophisticated plans, this consideration of hedge ratio targets should extend across key rates.

We advocate for higher hedge ratios than we typically see implemented across U.S. pension plans, particularly in terms of Treasury yield hedging. Capital-efficient tools, such as Treasury STRIPS (Separate Trading of Registered Interest and Principal of Securities) and futures, allow for both hedging and return-seeking exposures to be achieved concurrently.

For mature plans, the integration of cash flow–driven investment (CDI) may improve efficiency by better managing liquidity needs.

IMPLEMENTATION

Good design must be implemented effectively to deliver its true potential. Success in portfolio construction provides for targeting multiple sources of yield, efficient diversification of risk, and the facilitation of diversified alpha, all within a level of complexity befitting the specific investor.

Key top-down themes such as climate transition should be brought to bear in order to recognize the long-term change process that is underway in the economy, the long investment horizons involved in LDI portfolios, and the integrated benefits to the plan and plan sponsor.

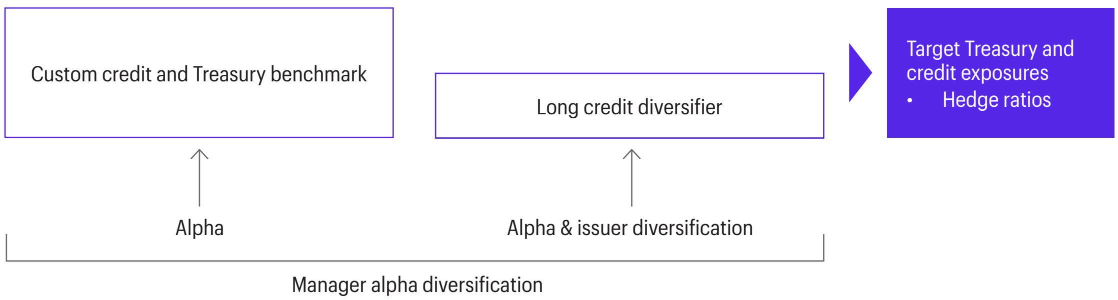
LDI portfolio illustration

To illustrate how the various parts of a portfolio can come together effectively, we show two example model LDI portfolios for pension plans: one for a smaller/low governance scenario (Example 1) and another for a larger/more sophisticated implementation (Example 2). Both have 50% of their capital in return-seeking assets.

EXAMPLE MODEL LDI PORTFOLIO 1: REDUCED COMPLEXITY

- Target hedge ratios: Treasury 70%, credit 35%

This LDI portfolio can be achieved with as few as two managers, using conventional investment-grade benchmarks and no derivatives.

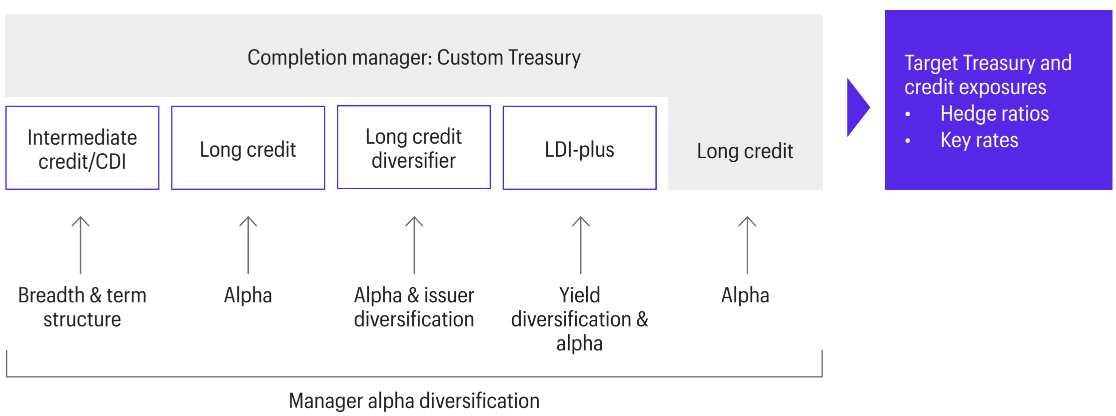


For illustrative purposes only. This hypothetical model is not representative of any product or strategy managed or offered by Allspring Global Investments.

EXAMPLE MODEL LDI PORTFOLIO 2: MORE SOPHISTICATED

- Target hedge ratios: Treasury 100%, credit 45%

This fairly sophisticated approach uses capital efficiency to achieve a more impactful liability hedge, source more yield and diversification, and target more alpha.



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Building a good liability hedge and a good asset portfolio

Above, we illustrated two hypothetical model LDI portfolios that may look quite different on paper. These are bespoke solutions to match a set of specific circumstances, so this result is expected. Yet, these models are united by a common principle—each effectively blends the hallmarks of a good liability hedge with those of a good asset portfolio.

- A good liability hedge identifies and accesses the optimal Treasury and credit spread exposures (duration and key rate duration).
- A good asset portfolio uses portfolio construction to optimize diversification of yield and credit risk (by issuer/sector) and alpha (by source/manager).

The ability to build a portfolio that embodies both attributes requires careful consideration of a number of elements. Let's start with the most important **design** considerations below and then move on to the key aspects of **implementation**. We hope this discussion will add useful context to your own efforts at building a better LDI solution.

Design

01. WHOLE PLAN

LDI portfolio design must include understanding of the non-liability hedging pension assets, also known as return-seeking assets. Due to the expected correlation between equities and credit spread returns, higher return-seeking allocations lead to lower credit spread hedge ratios being needed. These crosscurrents are a smaller consideration in choosing the Treasury hedge since return-seeking assets rarely show any meaningful or reliable correlation to Treasury yield changes. Other factors include the size of the return-seeking asset portfolio as well as the overall funded ratio, which can affect the capital available to facilitate the LDI hedge.

02. HEDGE RATIOS

Portfolio design should move beyond the concept of the "amount of assets" invested in bonds to a recognition of the "amount of hedging" that is desired. Asset allocations indicate a quantity of bonds, but bonds can have vastly different duration and credit risk. The new paradigm of dollar duration in your bonds enables clearer visibility of what actually matters—the impact of investing in bonds. This translates to a focus on hedge ratios to the liability, split into Treasury hedging and credit spread hedging targets. Such an approach not only helps with controlling overall pension plan risk over time and along a glide path, it also aids return attribution, thus helping keep all stakeholders informed.

03. QUANTITY OF HEDGE

The most important dimension of the LDI hedge is generally its raw size. It's helpful to consider this from both strategic and tactical perspectives. We've summarized our current thinking on this in the table below.

	STRATEGY CONSIDERATIONS	TACTICAL CONSIDERATIONS
Treasury yield hedging	• Treasury yield hedging is the most defensive risk exposure the plan can take on. In times of business, economic, and investment stress, Treasury yields tend to fall. Think in terms of a hedge, not an investment. • Treasury hedge is more important if the rest of the portfolio is invested in volatile assets and if the plan sponsor's business is economically cyclical. • Treasury volatility is normally higher than credit spread volatility and thus is the more important risk to hedge. • Extending duration with an upward-sloping yield curve adds to expected return.	• Treasury yields vary around their long-term levels; over a market cycle, they can be seen to be mean-reverting. Investors should consider whether they have a view that is different from the implied forward rate in the market. • Central banks are large and influential actors in the rates markets—and have become even more so in recent years. Anticipating actions and the path of inflation can inform portfolio positioning.
Credit spread hedging	• Credit spread exposure should be considered alongside the rest of the portfolio (especially equities). Large equity allocations diminish the size of the credit spread hedge desired. • Credit spread hedging is not defensive in risk-off environments. • Credit spreads are a rewarded risk over market cycles and provide a good source of alpha opportunity.	• A key fundamental tactical determinant is whether one believes credit spreads offer sufficient compensation for any anticipated recession risk. • Credit markets can also suffer from non-fundamental drivers of supply, demand, and illiquidity, which can lead to transitory mispricings and views of attractiveness.

04. KEY RATES

Although less important than the raw level of hedging, the details of the hedge design matter. Key rate hedging is good risk management discipline and can generally be done without adding much complexity and cost. This is especially true in the Treasury hedge space. Custom Treasury benchmarks and overlay mandates keyed off liability characteristics have become more commonplace across the industry. Key rate hedging in the credit spread space is less precise, but some advanced LDI investors are seeking to target specific profiles for credit spreads, notably focusing on the very long end of the curve where liability exposures exceed normal market benchmark exposures, and also adding intermediate credit as their liabilities mature.

05. CAPITAL EFFICIENCY

In order to achieve the desired liability hedge, capital-efficient instruments may be required. Treasury rates are the natural starting point since they have the simplest, cheapest, and most effective hedging tools: STRIPS, futures, and swaps. Further, these tools can also be used to tune the key rate durations. Credit spreads are generally better sourced in the physical credit market, compared to a less-developed and more-complex credit derivatives market. Leveraged credit spread exposure is, however, possible using equity option strategies to deliver relevant corporate bond-like returns above Treasuries and is a strategy that is recently starting to find favor among some sophisticated pension plans. If more capital efficiency is needed, we look to the return-seeking portfolio. For example, passive equity can be replicated with futures to fund more credit spread assets. This discussion underscores the importance of considering the entire pension portfolio (hedging and return-seeking) and that leverage is not a bad thing, especially when it's being used, as outlined here, to reduce overall risk and enhance implementation efficiency.

06. ROLL-DOWN AND DISTRIBUTING

Most standard market benchmarks and mandates involve fixed-term specifications (for example, > 10 years to maturity) and reinvestment of coupons. Yet, as pension plans mature, their liability horizons age and benefits eventually must be paid. This suggests benchmarks should ideally age alongside the liabilities they are matching and pay out proceeds (coupon and ultimately principal) when they occur or are wanted to meet benefit payments. Both of these objectives can be fulfilled with the advent of so-called cash-flow-driven investing (CDI). CDI is starting to become more prevalent, particularly among mature and well-funded plans. The goal simplifies to one of structuring a portfolio of diverse-yielding assets directly against expected liability payments over a specific term. In many applications, a blend of traditional and CDI portfolios can be used, with the CDI portfolio being organized around, say, the next seven years of benefit payments and then being topped up as needed when contributions and/or portfolio reallocations are appropriate (for example, as steps are taken along a de-risking glide path).

07. REPORTING

Finally, the logic of the design of the LDI approach and custom benchmark should flow through into regular investment performance monitoring and asset-liability performance attribution. As noted above, desired hedge ratios can be readily used to scale the liability return into an expected hedge return and demonstrate its efficacy. This is a simple step to take, and doing so helps keep the focus on liability risk mitigation and management while fully appreciating sources of risk and return.

Implementation

01. LIABILITY BENCHMARKING

Given the goal of achieving a hedge to the liabilities of the desired size and detail (hedge ratio and key rate profile), it's clear that no standard market issuance-based benchmark can deliver with any degree of precision. Also, over time, the aging of liabilities and churn in market benchmarks from new issuance and composition rules mean the hedging relationship is ever changing. Hence, it is preferable to build a custom blend of market benchmarks designed to afford a better liability hedging representation. The underlying index components and how they work together to deliver on the plan's hedging goals, diversification, and opportunity can be straightforward or more sophisticated as suits the situation. The calibration of this fit and recalibration over time are important implementation controls that should be managed either by the plan sponsor or a suitably resourced LDI partner.

One practical approach to this task is to simply pass over the task of matching and beating the implicit liability return to the chosen LDI manager(s). It is then the manager's task to correctly interpret and structure the portfolio to suit. Care is needed in this approach, however, to ensure that understanding of, and appropriate responsibility for, the nuances of changes in liabilities over time. Several unhedgeable and idiosyncratic changes to liabilities occur, such as actuarial reestimation, and these items must be accounted for in assessing LDI manager performance.

02. LDI COMPLETION

Not all managers employed to implement the LDI portfolio need to deliver customized portfolios. For multi-manager implementations, there is room for individual components of the LDI portfolio to be fairly standard—that is, some components can be managed against normal market benchmarks. But, in order to make more customized solutions come to life, it can be worthwhile to use one LDI completion manager to take stock of all asset exposures against the liability-hedging goal and make their portfolio square the proverbial circle. We recommend the standard managers focus on credit benchmarks to diversify credit selection and reduce cost. The completion manager is given a broad government and credit portfolio mandate to be able to adjust the overall exposures to the liability across all dimensions: Treasury duration, key rates, credit spreads, and liquidity. The completion mandate can also be used to manage across the glide path (funded ratio monitoring, surplus performance attribution reporting, and dynamic changes) and also explicit tail risk mitigation strategies, such as equity option overlays.

03. ALPHA

The LDI portfolio has the potential to deliver good alpha, especially in the credit markets. Long-duration credit markets offer inefficiencies, and active managers have shown dexterity in capturing them. There is a fair body of theory and empirical evidence to suggest good risk-adjusted alpha is available net of fees. And, indeed, most LDI investors invest credit actively.

For larger portfolios, where more than one manager is feasible, a manager structure engineered to generate more efficient overall alpha makes sense. This should involve careful assimilation of the diversifying characteristics of the different active managers—seeking complementary investment styles, approaches, and sources of alpha. For example, a manager that derives a significant portion of its expected alpha from security selection and active rotation could complement other managers that focus on deriving value from macro-driven or buy-and-hold strategies.

04. CREDIT DIVERSIFICATION

As more assets are invested in credit, and especially long-duration credit, how that portfolio is constructed matters more and more. The natural benchmark—the Bloomberg U.S. Long Credit Index—is quite concentrated, as it is dictated by market issuance. For example, about half of the benchmark is exposed to only 70 or so issuers. Large LDI managers also routinely heavily weight these large issuers for their own liquidity needs. We believe a benefit can be gained by complementing mandates focused on this index with mandates that are designed to diversify holdings by focusing on the remaining 650 or so issuers that occupy the smaller end of the issuer spectrum. Not only can these bonds provide desirable issuer diversification, they can be beneficial sources of yield and alpha and are typically underexposed in many LDI portfolios.

05. BREADTH OF YIELD SOURCES

Long corporate bonds are a natural first port of call for LDI mandates as they key off the same basic yield used in the valuation of pension liabilities and have broadly comparable duration. As a result, most LDI mandates have sought to gain exposure to long-dated U.S. investment-grade bonds. But, there are other sources of yield that might also be worth considering to deliver a broader, more diversified, and ultimately potentially higher-returning portfolio over time.

Such opportunities include:

- Long-duration high-yield bonds
- Certain parts of the structured product market (for example, agency commercial mortgage-backed securities)
- Intermediate U.S. credit
- Currency-hedged non-U.S. corporate bonds
- Taxable municipal bonds
- Private credit
- Synthetic corporate bonds (for instance, using equity options and Treasury bonds in tandem)

Each of these individually can offer some beneficial and complementary risk, return, diversification, and liquidity benefits. In combination, they can be quite powerful.

These extended exposures are starting to be explicitly considered either by virtue of looser guidelines for LDI managers to dip in and out of on an opportunistic basis or via amendments to benchmarks that include slices of these markets. The first of these approaches might be termed LDI-plus, while the second is a further expression of custom benchmarking. We note that such an approach to portfolio construction has, for years, been commonplace across the life insurance industry, which has faced a not-dissimilar task as that facing pension LDI investors.

06. CLIMATE TRANSITION

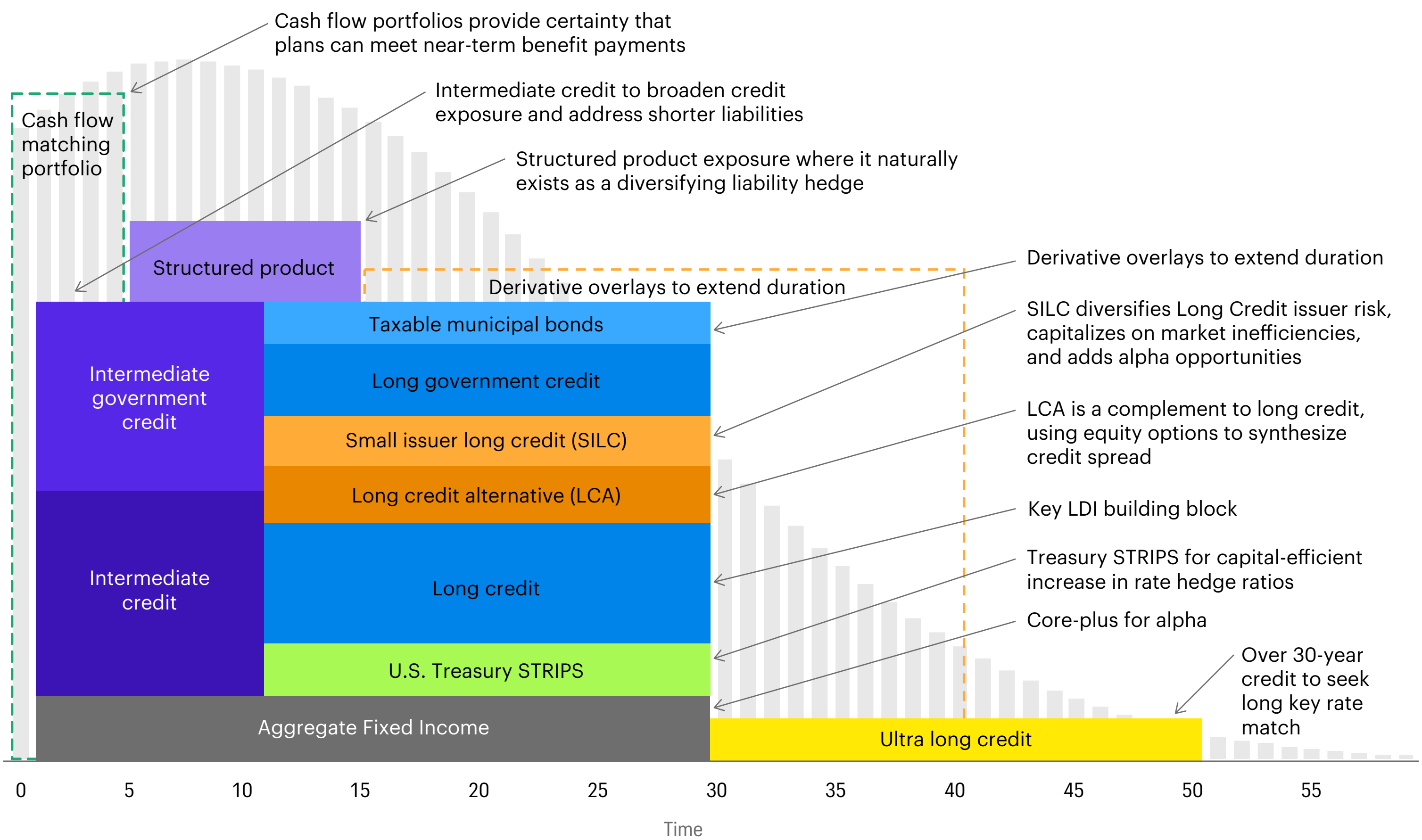
A notable top-down and long-term trend that affects both plan sponsors and LDI portfolios is climate transition. Long credit issuers are generally heavy CO2 emitters due to the prevalence of certain industries within the standard benchmarks. For a variety of reasons, plan sponsors are increasingly focusing on specific climate-transition-aligned LDI strategies in order to:

- Identify and manage emerging risks—both physical and transition related—that are congruent in timescales to the terms of their LDI portfolios
- Seek to invest on the right side of change—identifying and benefiting from credit performance of tomorrow's winning companies
- Reduce coincident climate-related risks between their core business operations and their pension investments
- Proactively position their investment stance alongside business missions in order to appeal to various stakeholders, including staff, customers, investors, and rating agencies

Conclusion: Bringing LDI portfolio components together

There are many parts of the fixed income market that can and should be jointly considered when building an LDI portfolio. The illustration below outlines these elements in a stylized form overlaid on a sample pattern of liability cash flows. Some of these components are well known and widely used. Some are relatively new and are only now finding favor among some of the more progressive LDI investors.

While this can look overwhelming at first, not all plans desire to directly allocate to all elements, and indeed practical mandate construction can bring the benefits of the different aspects together in straightforward and practical LDI portfolios. In our experience, the art and the science of successful LDI portfolios is finding the right ways of tapping into all these good ideas and bringing them together into a sensible, integrated, and manageable whole. The good news is that this can be readily achieved—as many of the leading LDI investors have shown.



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For further information

We want to help clients build for successful outcomes, defend portfolios against uncertainty, and create long-term financial well-being. To learn more, investment professionals can contact us.

Contact details

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