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Perspectives

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Hibernation: Managing a Sleeping Bear

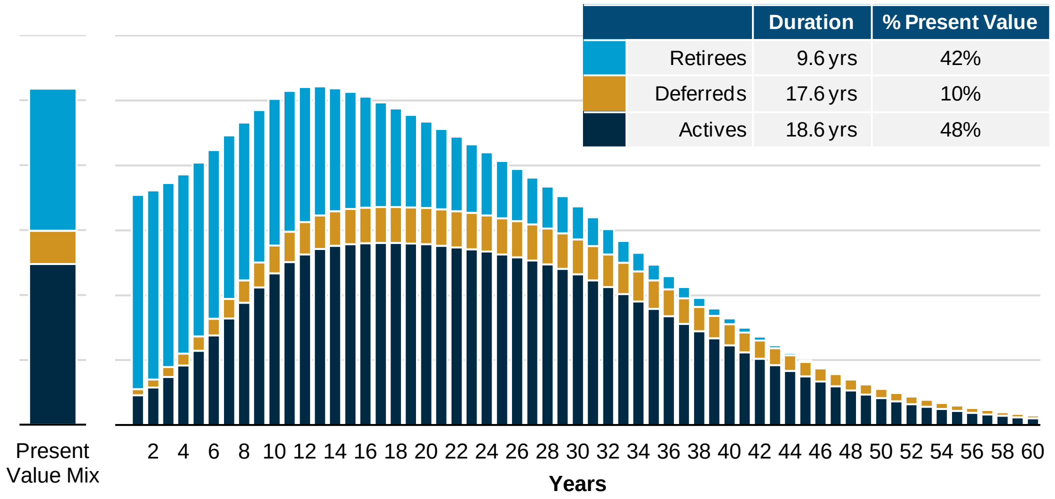
Many asset managers today advocate that plan sponsors consider a risk-reduction strategy called "hibernation" with promises that sponsors can then sleep soundly. Hibernation is a liability-driven investment (LDI) strategy which aims to achieve the same risk reduction as a pension plan buyout by selling risk assets and buying bonds that match the interest rate risk of the pension plan's liabilities.

But just as glidepaths don't always "glide" (these last few years have been more of a rollercoaster), we believe hibernation is a sleeping bear that needs to be carefully watched. In this paper, we consider how a pension plan's risk profile evolves over time, and how the interplay between a smarter hibernation strategy and different de-risking tools can allow a plan to slowly wind down in both size and risk.

Start by Segmenting the Liabilities

Every pension plan has different populations of participants, each with its own needs and characteristics. These characteristics change over time as the plan ages and need to be actively monitored. Three populations are particularly important in building a risk-reduction strategy—retired, deferred vested, and active employees.

The graphic below illustrates the Projected Benefit Obligation (PBO) of a sample closed plan. By segmenting the participant populations, we see that the duration of the liabilities for retired employees is about half that of the other population segments (~10 years vs. ~18 years). Not surprisingly, these different durations often drive plans away from a simple duration-matching strategy to more customized-matching strategies that capture the specific interest rate risk of each segment, and not simply the average risk of the plan as a whole.



		Duration	% Present Value
🟦	Retirees	9.6 yrs	42%
🟧	Deferreds	17.6 yrs	10%
■	Actives	18.6 yrs	48%

Liability of a sample plan closed to new members

Source of data: Prudential Retirement, Prudential Fixed Income. Liability is measured as the projected benefit obligation as of December 31, 2014. For informational purposes only. There can be no assurance that the projections will be achieved.

EACH POPULATION SEGMENT HAS A UNIQUE PROFILE

Consider Both Duration-Matching *and* Risk-Transfer Strategies for Each Segment

In addition to duration-matching strategies, plan sponsors should also evaluate the appropriate *risk-transfer strategy* for each population segment. A robust pension risk playbook needs to incorporate not just shifts in portfolio strategies, but *actively anticipate* the use of risk-transfer techniques.

If we consider the retiree segment, for example, a key risk transfer vehicle is an annuity buyout. For deferred vested participants, a lump sum offer is often best. And for current employees, a full plan termination is the most viable transfer option—although patiently waiting may well be better, as we will see below. Each transfer strategy also comes with a different cost, which must be weighed against the ongoing portfolio management and administrative costs of the plan, including the costs of both LDI and hibernation strategies.

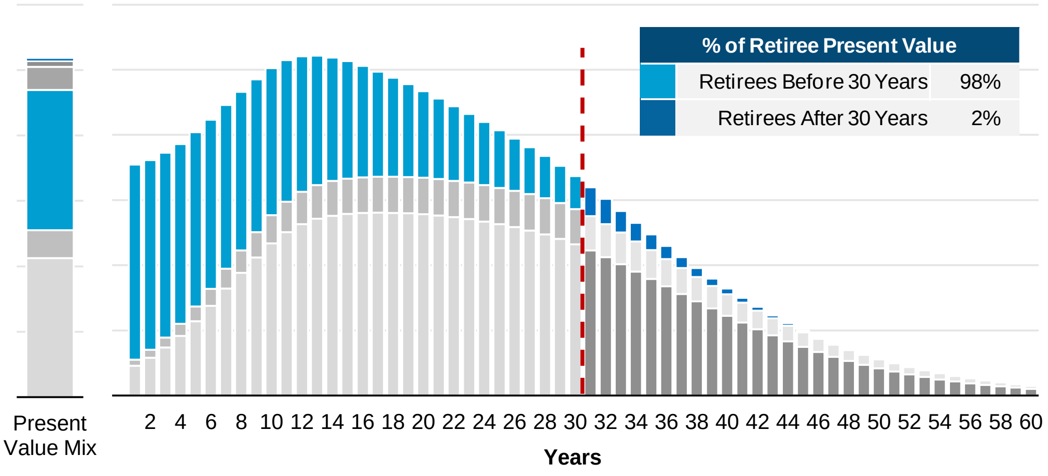
Beyond a traditional glidepath, all plans need a good risk playbook that considers the various types of risk-transfer strategies available for each population segment and highlights when a specific strategy makes good financial sense to pursue.

Retirees Can Now Transfer Efficiently

U.S. corporate defined benefit plans typically lag market expectations for increasing life expectancies and, once a decade or so, they scramble to catch up. Now is such a time. With the Society of Actuaries' recent release of a new mortality table and improvement scale (RP-2014 and MP-2014), defined benefit plans are now writing up their liabilities to values closer to insurance market expectations than they have been in years. This lagged historical approach to longer lifespans means that many plans may have under-hedged their liabilities for quite some time. Now, LDI hedges are being re-struck as increased lifespans push durations out longer.

Many firms are now also considering a risk transfer of their plan's retiree segment. The ease of transferring retiree liabilities to an insurer follows from the fact that the low-risk, *all fixed income hibernation strategy* for the retiree segment is very similar to the investment strategy most insurers use to match similar liabilities.

MOST RETIREE LIABILITIES FALL WITHIN THE BOND MARKET INVESTMENT WINDOW OF 30 YEARS



Liability of the retiree population for the sample plan

Source of data: Prudential Retirement, Prudential Fixed Income. Liability is measured as the projected benefit obligation as of December 31, 2014. For informational purposes only. There can be no assurance that the projections will be achieved.

Insurers are limited to investing their assets principally in investment grade corporate bonds. Since retiree liabilities mostly fall within the bond market's cashflow window, the lowest risk strategy is much the same—closely matching liabilities with high quality corporate bonds (98%), with just a small reliance on growth assets (2%) for very long-dated payment obligations.

Non-Retiree Segments are Inefficient to Transfer

In contrast, we believe the active and deferred vested liability segments of the plan, which have a greater percentage of their future cashflows *outside* of the bond market window (>30 years), are best supported by a larger allocation to growth assets—allocation levels that highly-rated insurers generally cannot support. Rather than over-invest in fixed income, plan sponsors should seek to preserve growth asset allocations for cashflows that are both uncertain and far away.

We believe this makes the non-retiree segments of a plan prime targets for smarter hibernation strategies that include both fixed income and growth components.

Costs are also a key consideration, and the active and deferred vested segments of a plan generally have higher transfer costs than the retiree segment. But even these costs can fluctuate, and may decline. Additionally, the apparent transfer costs for these liability segments would be based on the insurer's mortality assumptions, which are generally more detailed and up-to-date than the published tables. These factors should move plans to regularly monitor the risk-transfer price of each segment versus their current asset management strategy. (This segment-specific monitoring is widely available, just ask an actuary!)

Illustrative Risk Transfer Prices

% of Liability Value to Transfer to an Insurer
Retirees ~ 103%
Deferreds ~ 117%

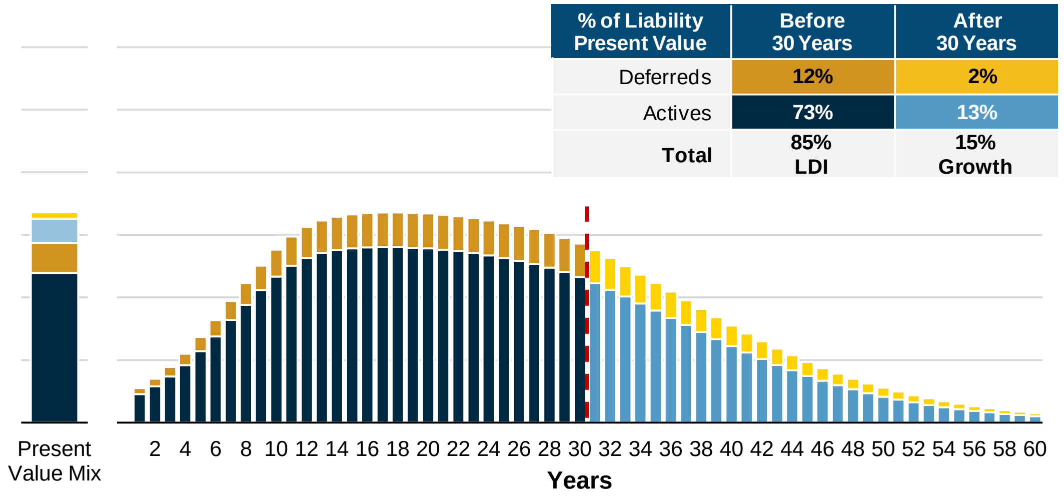
Source of data: Prudential Retirement. Liability is measured as the projected benefit obligation as of December 31, 2014. For informational purposes only. There can be no assurance that the projections will be achieved.

Implementing a Smarter Hibernation Strategy

As we saw above, a traditional hibernation strategy is a good match for the retiree liabilities. Implementing a smarter hibernation strategy on non-retiree liabilities is quite different from the strategies common along a traditional LDI glidepath. The reason is that the liabilities that remain after a retiree transfer have longer durations *and* a larger proportion of their liabilities lie outside the bond market window. As illustrated below, the sample plan's non-retiree segment would have approximately 15% of its liabilities outside the bond market window, compared to just 2% of the retiree-only segment, and about 9% of the entire plan.

We believe a smarter hibernation strategy should focus on two key factors: 1) creating and managing a risk-efficient *growth portfolio*, and 2) maximizing the hedge effectiveness of the remaining bond allocation. For those liabilities within the bond market window, matching with corporate bonds, as in traditional LDI, still makes good sense.

AFTER A RETIREE BUYOUT, MORE CASHFLOWS ARE OUTSIDE THE BOND MARKET INVESTMENT WINDOW



% of Liability Present Value	Before 30 Years	After 30 Years
Deferreds	12%	2%
Actives	73%	13%
Total	85% LDI	15% Growth

Liability of the sample plan immediately after a buyout of the retiree population

Source of data: Prudential Retirement, Prudential Fixed Income. Liability is measured as the projected benefit obligation as of December 31, 2014. For informational purposes only. There can be no assurance that the projections will be achieved.

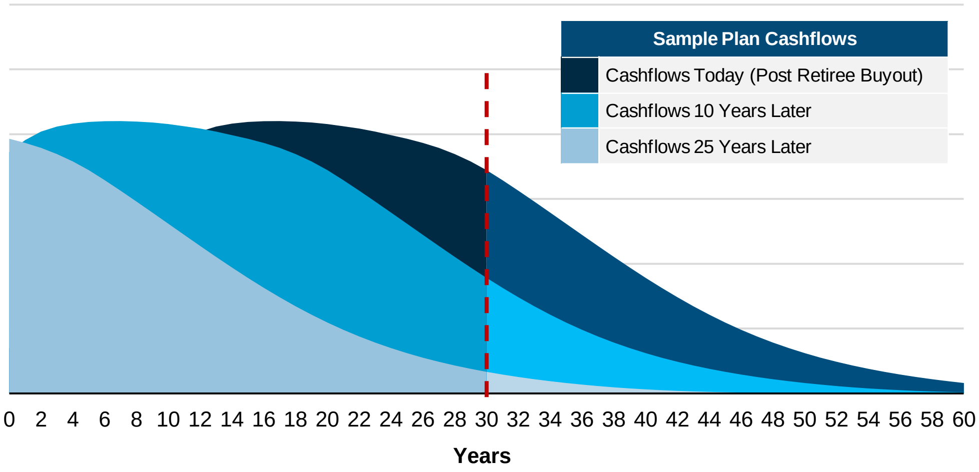
The Role of Interest Rate Derivatives

Since the long-dated benefit flows, supported with growth assets, will still move a plan sponsor's balance sheet due to current financial statement valuation methods, an interest rate derivative strategy can be an essential ingredient in a smarter hibernation strategy. Interest rate derivatives can efficiently hedge the residual duration risk *without sacrificing the extra return from the growth assets*. This means a retiree risk transfer transforms a traditional LDI strategy to one that relies more on excess returns from growth assets and incorporates a larger role for interest rate derivatives, but also allows for hibernation.

Hibernation is *Not* an End State—It Evolves with the Liabilities

Just as a hibernating bear tosses and turns as it sleeps, so too does a liability hibernation strategy—it is far from passive. Each year, benefits must be paid out and cashflows will roll in, shortening the liabilities' duration and moving a bit of the long-dated liabilities into the bond market window. This means a plan sponsor may slightly reduce overall portfolio risk each year by rebalancing—selling some growth assets and buying some long duration, high-quality corporate bonds as more liabilities roll inside the bond market window.

AS THE PLAN AGES, THE % OF CASHFLOWS INSIDE THE BOND MARKET WINDOW GROWS



Evolution of the liability of a sample plan following a buyout of the retiree population

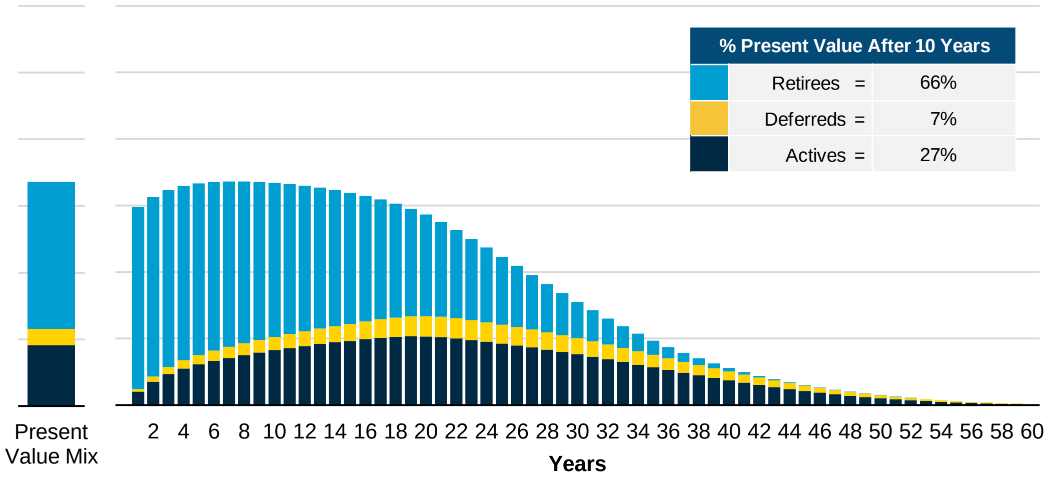
Source of data: Prudential Retirement, Prudential Fixed Income. Liability is measured as the projected benefit obligation as of December 31, 2014. For informational purposes only. There can be no assurance that the projections will be achieved.

Another factor to consider is that if the participants' lifespans increase more than the new projections, smart hibernation may require occasional rebalancing in the *opposite* direction—selling long corporate bonds to buy more growth assets to support the now-larger benefit flows to these long-lived participants (and adjusting the small derivative hedge).

Patiently Wait on Future Retirees

Most importantly, *more participants will retire*. As the plan builds up a new population of retirees, the plan sponsor may wish to consider a future retiree transfer to move the new retirees to an insurer when the size and price of the transfer become appropriate.

OVER TIME, THE RETIREE SEGMENT GROWS AGAIN



Liability of the sample plan 10 years after a buyout of the retiree population

Source of data: Prudential Retirement, Prudential Fixed Income. Liability is measured as the projected benefit obligation as of December 31, 2014. For informational purposes only. There can be no assurance that the projections will be achieved.

Over time, we believe a plan following an approach which combines traditional LDI, smarter hibernation, and risk-transfer tools will shrink in size and fall in volatility. Eventually, it may sleep soundly.

Conclusion

What do we believe the future holds for plan sponsors?

Markets will shift. People will live longer. Employees will retire. Minimum funding rules will change. Regulatory burdens may increase. In such an uncertain environment, a one-size-fits-all pension risk management strategy cannot exist.

What can plan sponsors do today?

Sponsors can segment their liabilities to closely align both investment strategies (e.g., matching bonds to cashflows and retaining enough risk assets), and apply risk transfer tools to their plan's current liability structures. They can also examine future changes in the mix of participants to see how investment strategies, including an actively-monitored smarter hibernation strategy, can allow the plan to slowly wind down in both size and risk over time.

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