PENSION DE-RISKING GLIDE PATHS

DEFINING A PLAN FOR PENSION PLAN END GAMES

RUSSELL INVESTMENTS RESEARCH / VIEWPOINT

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Pension de-risking glide paths: Defining a plan for pension plan end games

A brief history of glide paths

De-risking glide paths first appeared around 2008. Our 2009 paper, "Liability-Responsive Asset Allocation,"[1] was (as far as we are aware) the first formal documentation of the concept of a de-risking glide path.

These types of policies emerged due to a combination of concurrent factors. Some of these are interrelated.

- The Global Financial Crisis in 2008 left many sponsors underfunded, in need of a plan to get fully funded and stay there
- New accounting and funding standards that emphasized mark-to-market funded status
- Plan freezes became much more common, leading sponsors and their advisors to consider endgame strategies
- The regular monitoring of funded status required for successful implementation of glide paths became more feasible and common. Before then funded status was typically only calculated once a year.

Following its arrival on the corporate DB scene around 2008, the concept of de-risking glide paths spread remarkably quickly. Although pension plans are often seen as conservative and slow to adopt new ideas, de-risking glide paths were widely embraced almost immediately.

The typical U.S. pension plan experienced an improvement in funded status from 2010 to 2013 of 10% to 25% (depending on contribution policy and other factors). Hence, most plans that had adopted a glide path hit a number of trigger points over that period, the result being a general move away from return-seeking to liability-hedging assets. The pace of de-risking slowed with falling interest rates through but has recently seen a resurgence through a combination of higher rates and strong equity performance.

We have reached the point where most frozen pension plans have adopted a de-risking glide path, and it is those who have not done so that find themselves in the minority.

Why (and when) de-risking glide paths makes sense

To understand the rationale for glide paths, it is best to begin with the case of a frozen pension plan (i.e., one that is no longer providing any new benefit accruals). The two highest-level categories to which the plan's assets are allocated are liability-hedging assets (investment grade fixed income) and return-seeking assets (the largest component of which is public equities). The division of assets between those two categories is based on a risk/return trade-off. This trade-off may be expressed, for example, in terms of how the

allocation decision is expected to affect the funded status and the contributions that the sponsor will be required to make in future years.

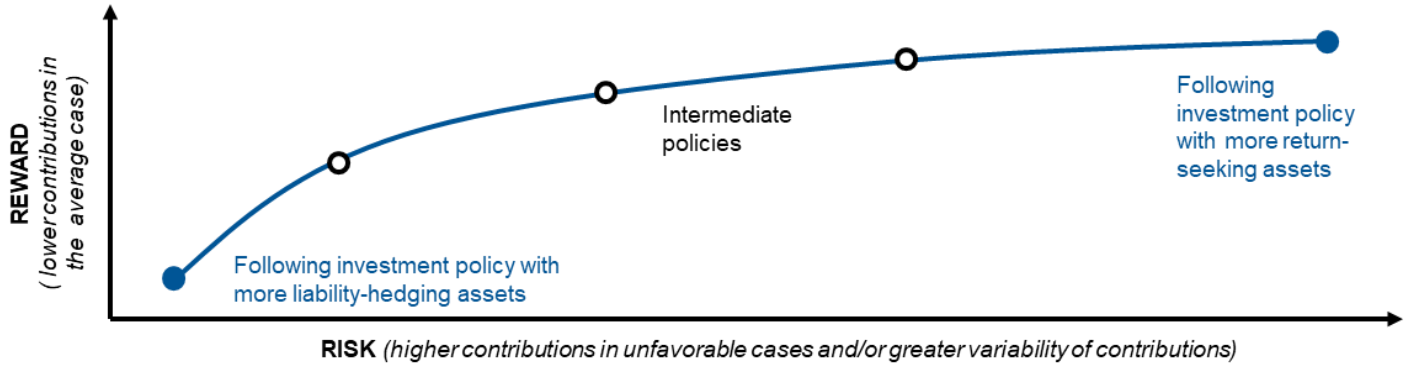
Exhibit 1 is a generic representation of the typical risk-reward trade-off. Higher reward in this case means lower expected plan sponsor contributions on average, while higher risk means greater variability and/or higher contributions in less-favorable scenarios.

The pattern shown in **Exhibit 1** is what might intuitively be expected: an increased allocation to return-seeking assets results in a lower contribution being required on average, but there is greater volatility and/or greater uncertainty associated with that outcome.

In other words, a return-oriented portfolio leads to higher expected reward but also to higher risk. This is a familiar pattern for investors of all types.

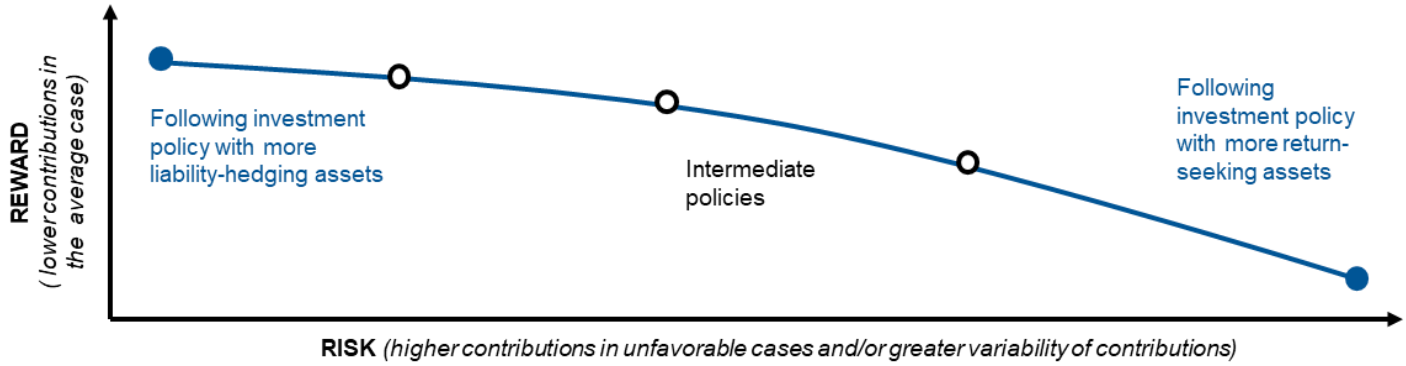
> *In other words, a return-oriented portfolio leads to higher expected reward but also to higher risk.*

Exhibit 1: Example of a typical risk-reward trade-off



For illustrative purposes only.

Exhibit 2: Example of well-funded risk-reward trade-off



For illustrative purposes only.

However, a different pattern results when the analysis is run for a plan that is well funded. Now the trade-off may look more like what is shown in **Exhibit 2**.

In this case (**Exhibit 2**), the return-oriented investment strategy continues to lead to higher risk, but it no longer compensates for that risk with a better expected outcome. The assumption that the plan is fully funded and no new benefits are accruing means that, in average and favorable conditions, required contributions are expected to be small or zero no matter what the investment strategy. There's little to gain by taking risk in pursuit of extra

returns in this scenario. (We'll come back in a moment to what happens when we remove the assumption that no new benefits are accruing.)

Thus, while an underfunded frozen plan may well choose to follow a return-oriented investment strategy in order to close a funding gap, the case for doing so weakens as funded status improves. This relationship can be embedded in the asset allocation policy by tying the strategy to variations in funded status over time. Rather than simply setting the allocation based on the current funded status, a schedule can be produced that specifies what the allocation would be at various funded levels.

The de-risking glide path is intended to take the plan from an initially underfunded state (with some risk being taken in the investment policy) to a fully funded state with minimal risk.

In practice, such a schedule might look something like this:

Exhibit 3: Sample de-risking schedule

FUNDED STATUS TRIGGER	LIABILITY-HEDGING FIXED INCOME ALLOCATION	EQUITY OR RETURN-SEEKING ALLOCATION
Below 85% (initial position)	35%	65%
85%	45%	55%
90%	55%	45%
95%	65%	35%
100%	75%	25%
105%	85%	15%

For illustrative purposes only.

We describe in more detail later in this paper the steps involved in creating a de-risking glide path.

Glide paths replace a static asset allocation policy with a dynamic one. The dynamism is not, however, in response to any change of opinion regarding the nature of the asset class opportunities faced by the plan.[2] Rather, it is dynamic only in response to the plan's circumstances. Specifically, the allocation responds to changes in funded status and to the impact of those changes on the risk-reward trade-off inherent in the asset allocation decision. It fits into the category of strategies described as long ago as 1990 by Bill Sharpe as "intended to better adapt long-run results to an investor's objectives, without attempting to time the market."[3]

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Asymmetric surplus risk

The reason that the risk-reward trade-off varies in our example is that at 85% funded, additional returns serve to reduce the shortfall and hence save the plan sponsor money; whereas at 105% funded (for a frozen DB plan), additional returns have little or no impact on the level of required future contributions or on PBGC variable rate premiums (which are based on funded level). The extra money has less utility within the plan.

This relationship makes the plan's surplus risk asymmetric. Or in other words, once a plan is fully funded, the risk of having to pay future contributions or PBGC variable rate premiums exceeds to potential benefit of having excess assets.

This is not to say there are no uses for excess capital. The funding of future benefit accruals is the most obvious and important purpose. But excess capital just may not be a compelling pursuit for sponsors keenly interested in maintaining their funded level.

Excess assets can have utility, such as for improving benefits, bolstering balance sheet assets or expected returns on income statement, but these do not necessarily resonate with sponsors. If they do, a different end point to the glide path may make sense.

If it were possible to return surplus assets without penalty to the plan sponsor, this may not be a consideration, and the pursuit of extra return would be as worthwhile for the sponsor of a 110% funded plan as it is to the sponsor of a 70% funded one. However, there are practical barriers to the return of plan surplus, including a significant tax penalty, so the effective value of an extra dollar in the plan is less at higher funded levels.

A plan that is closed to new entrants but still accrues new benefits for existing members is in a similar, but not identical, situation. For a plan closed to new entrants, extra returns serve to offset the cost of new benefit accruals. Capital would only become trapped after all future benefit accruals are fully funded. For this reason, de-risking strategies for closed plans that have not frozen all benefit accruals may consider the present value of all future benefits (PVFB) funding metric rather than just the projected benefit obligation (PBO) when designing a de-risking glide path.

In the case of an open pension plan, glide paths have a more limited application. Typically, the pattern of the trade-off between risk and return does not vary a lot as funded status changes for open plans. De-risking strategies are therefore less common among these plans.

Design considerations

At its core, a glide path is simple and intuitive. It replaces the traditional asset allocation policy (consisting of a fixed mix of assets) with a dynamic strategic policy that depends on the funded status of the plan.

In practice, there are a number of elements that go into the design of a de-risking schedule. These include:

1. The liability metric that is used

It is most common to base the glide path on the PBO calculated for corporate accounting purposes, since this is the most objective measure of marked-to-market liabilities that is easily available and it is directly related to how the plan affects the corporate balance sheet. As noted previously, PVFB may be used for a plan that is closed to new entrants but has not frozen new benefit accruals. Accumulated benefit obligation (ABO) may also be used.

2. End goal funding objective

The point at which surplus in a pension plan becomes less useful is somewhere above the 100% funded position, generally at least 105% for a frozen plan (or 105% of PVFB for a closed plan). If the intention is to move quickly to a full plan termination, then a target of 110% or higher may be adopted in order to ensure that sufficient funds would be available for the fully loaded cost of transferring all liabilities to the insurance sector.

3. End goal asset allocation

The end goal asset allocation is the policy associated with the end goal funding objective, the highest funded status in the de-risking glide path. This might be designed to mirror the liability characteristics as precisely as possible (e.g., with a bond portfolio based on matching the key rate durations to the expected liability cash flows). A small, diversifying allocation to return-seeking asset classes is often retained, however, since this may help to minimize the expected variability of the plan surplus.

4. Initial asset allocation policy

This is the asset allocation policy appropriate for the current funded status, typically established via a strategic asset allocation review.[4]

At its core, a glide path is simple and intuitive. It replaces the traditional asset allocation policy (consisting of a fixed mix of assets) with a dynamic strategic policy that depends on the funded status of the plan.

5. Permit re-risking? (one-way or two-way policies)

Although glide paths are primarily intended to define what happens when funded status increases, they also need to be clear on what happens when funded status falls. Should a plan move back to a higher-risk asset allocation policy when this happens?

We generally recommend plans follow a one-way path (i.e., not to reduce liability-hedging allocations when funded status falls). This avoids excessive trading as funded status ebbs and flows, and it highlights the value that many plans place on glide paths as a practical means of finding a way to a desired end goal: full funding and minimal risk.

6. Confirm glide path

Having established a starting policy (applicable to the current funded status) and an end-goal policy (applicable to the funding objective), a simple glide path can be constructed by defining equal incremental changes to asset allocation policy as funded status hits each trigger point between the current and end objective funded status. Five percent intervals are common, but smaller trigger intervals may be desired in some circumstances, such as for very large plans (that desire smaller asset allocation shifts).

More complex approaches are possible, such as changing asset allocation policy more quickly as funded status moves up initially in order to get closer to the final policy goal. Such fine-tuning of glide paths is unusual, however.

If a two-way glide path is chosen, the schedule may be extended to specify asset allocations that apply at levels below the initial funded status.

More complex approaches are possible, such as changing asset allocation policy more quickly as funded status moves up initially in order to get closer to the final policy goal.

7. Establish tactical ranges (if desired)

Ranges may be established around the targeted glide path to permit discretionary variation of the asset allocation in order to implement tactical market views. For example, the policy ranges may specify that the actual allocation to return-seeking assets cannot be higher than the next-higher allocation on the glide-path schedule, nor lower than the next-lower allocation.

If the investment policy does not allow for tactical variation in the allocation, rebalancing ranges may be specified instead.

8. Define the return-seeking portfolio

The allocation of assets within the return-seeking portfolio may change as funded status increases. Of particular note here is the handling of illiquid assets; there may be little control over the pace at which these can be reduced so planning ahead is important to avoid over-allocation as the end goal funding objective is approached.[5]

9. Define the liability-hedging portfolio

Similarly, the liability-hedging portfolio may change as it grows. If the liability-driven investment (LDI) portfolio is much smaller than the liabilities being hedged, there is little to gain by fine-tuning to the specific liabilities of the plan. The portfolio may simply aim to achieve the maximum possible sensitivity to interest rates.[6] Once the portfolio is large enough, more precise hedging becomes possible.

10. Define the hedge ratio

An additional enhancement to a de-risking glide path is to define a target range for the interest rate hedge ratio. While not providing a specific LDI duration, hedge ratio target ranges can help guide and influence the composition of LDI assets. Early in a glide path, the sponsor may need to retain a higher LDI duration to achieve the desired hedge ratio, while later in the glide path the LDI will probably have a similar duration to the liabilities.

11. Other variables

Once the asset allocation policy is tied to funded status, plans may consider whether to tie it to other variables. A glide path may be made contingent on the level of interest rates, or to the passage of time (the latter goal, again, as a reflection of the intent to advance to the known end goal).

12. Implementation of policy changes

Glide paths are most effective if policy changes apply automatically once a funded status trigger is hit. In some cases, however, de-risking schedules are advisory rather than automatic (a "guide path," if you will), and changes in asset allocation require investment committee approval before being put into effect. This reduces the responsiveness of the policy and introduces an additional layer of administration. Advisory schedules should require, whenever de-risking triggers are not acted on, clear documentation of the conditions that led to the decision not to act. Those conditions ought to be subsequently monitored so that de-risking action can be taken when they no longer apply.

A de-risking glide path will lead, over time, to several changes in asset allocation. Procedures should be established to ensure those changes are made as efficiently and as cost-effectively as possible. This should include explicit procedures around the handling of plan-sponsor contributions. Specifically, if the contribution will cause the funded status to cross a trigger point, the investment of the new money should be based on the asset allocation applicable to the higher funded status.

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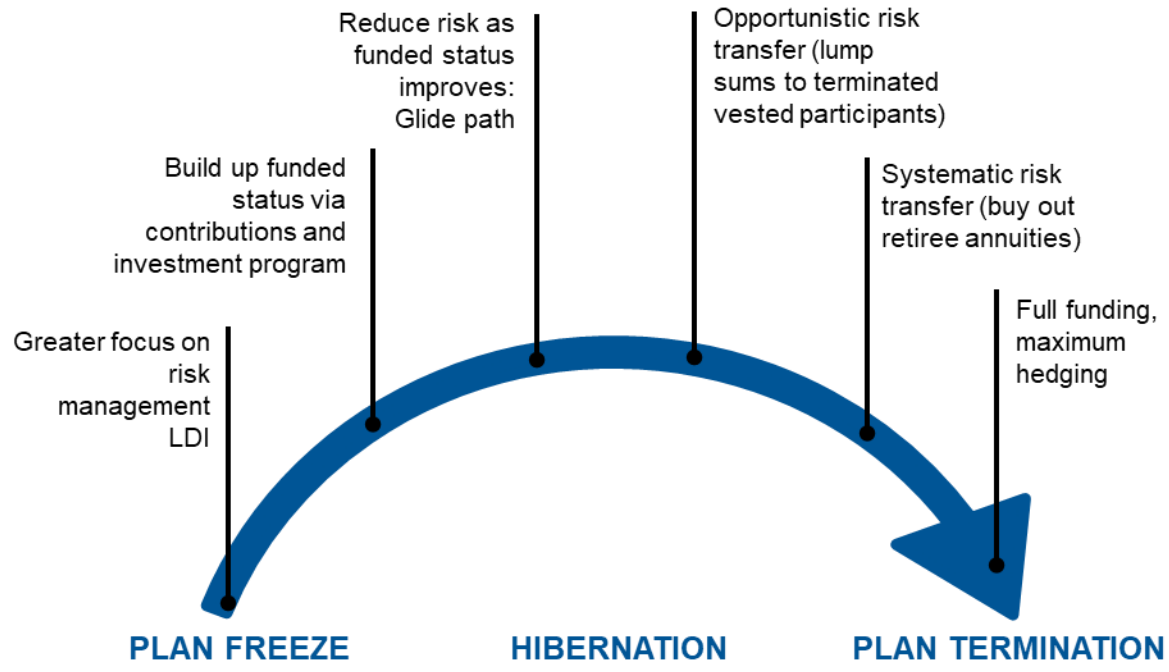
Exhibit 4: The typical lifecycle of a frozen pension plan



Source: Russell Investments

Conclusion: Keep the end in mind

De-risking glide paths have come to prominence against the backdrop of a maturing pension system. A substantial number of plans have now been frozen for 10 or more years, over which period the nature and the time horizon of the liability profile have evolved.[7]

Against this changing backdrop, glide paths should be seen as a transitional strategy, carrying a plan through the early stages of the frozen-plan lifecycle. As a plan approaches full funding, the focus on risk management intensifies. The end goal is to transfer all liabilities to participants and the insurance sector and to terminate the plan; making this move prematurely can be expensive, however, so there is generally a period – referred to as hibernation[8] – during which plan assets and liabilities are retained.

Exhibit 4 depicts the stages represented in the typical progression of a frozen plan. The pace at which any given plan will advance through this lifecycle depends on a number of variables. Interest rates are especially important. Funded status is also affected by the strength of the equity market and by plan-sponsor contribution policy; so these, too, will affect the pace of change.

Regulatory changes, developments in the pension risk transfer market or changes to the level of PBGC premiums potentially serve as a brake or a boost to the progression of pension plans through the various stages of the typical lifecycle shown in **Exhibit 4**. The widespread adoption of de-risking glide paths offer clear evidence that the U.S. retirement system is not static. Although we cannot say how quickly, the system is clearly moving toward a future in which DB will play a greatly reduced role.

[1] Gannon, J. and B. Collie (2009). "Liability-responsive asset allocation," *Russell Investments Viewpoint.*
[2] This statement is not intended to dismiss the possibility of responding to changes in the nature of asset-class opportunities. Rather, it is to note that it is not the subject of this paper.
[3] "Managing Investment Portfolios: A Dynamic Process," edited by John Maginn & Donald Tuttle. Chapter 7. (Second Edition, 1990. Warren, Gorham & Lamont.)
[4] See J. Owens (2020). "DB Strategic Asset Allocation Reviews"
[5] See Gannon, J. and K. Turner (2013) "Structural denominator effects and implications for private market investments in DB pension plans" *Russell Investments Practice Note.*
[6] See Phillips, D. & others (2014). "Hedge long first: an alternative approach to LDI." *Russell Investments Viewpoint.*
[7] PBGC Annual databooks http://www.pbgc.gov/prac/data-books.html
[8] See Owens (2023). "A guide to pension plan hibernation." *Russell investments Viewpoint.*

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