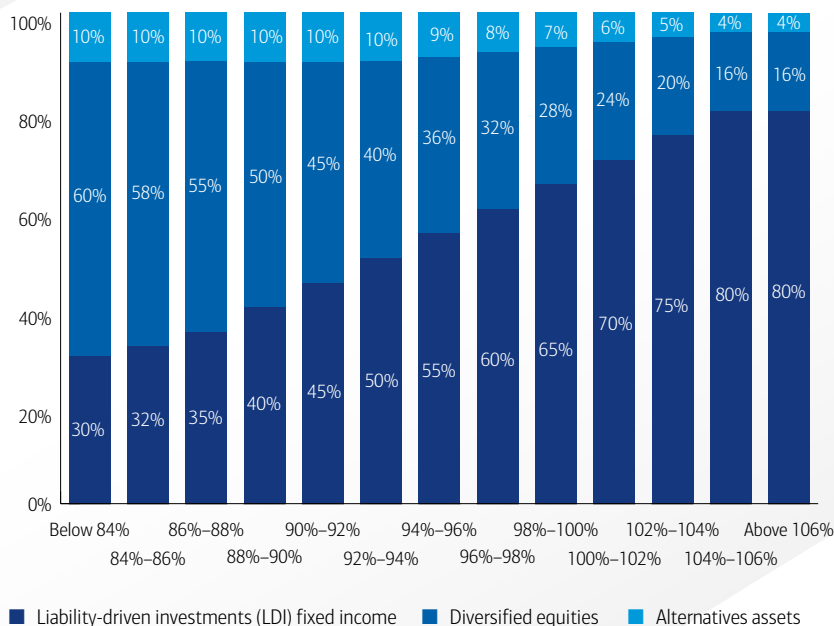


Demystifying de-risking glide paths for pension plans

De-risking glide paths has been a core component of the investment strategy for most sizable pension plans for at least the last decade. However, the reasons glide paths can be effective aren't always obvious. This paper will demystify the core concepts underlying glide paths — what they are, why they're commonly used for pension plans, and how a customized glide path should be designed for a given plan.

Hypothetical de-risking glide path



The funded ratio of a pension plan is the value of the assets divided by the liability. Pension plans can be overfunded with funded ratios that exceed 100%.

The hypothetical example above is for illustrative purposes only. It is not intended to serve as investment advice, since the availability and effectiveness of any strategy are dependent upon individual facts and circumstances.

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What is a glide path?

A glide path is a dynamic pension investment strategy centered on de-risking a plan's asset allocation as the plan's funded status improves. This is generally accomplished by gradually shifting from growth assets to liability-hedging assets.

At a high level, glide paths are used to:

- Meet fiduciary obligations without constant committee oversight by establishing a long-term framework for future de-risking at set trigger points.
- Set strategic asset allocation targets that will be appropriate for the plan as its funded status evolves.
- Protect investment gains and funded status improvement from backsliding.
- Control risk and volatility while retaining upside by avoiding excessive risk-taking.

While these points begin to show why glide paths are commonly used by pension plan sponsors, we'll go deeper on the rationale for glide paths in the following pages. Then, we'll explore the plan-specific factors that must be considered in developing an appropriate customized strategy.

Why are glide paths used by pension plans?

The fundamental reason glide paths are so commonly used by pension plans is that the appropriate investment policy for a pension plan is often heavily dependent on that plan’s funded status. Pension plan sponsors are unique investors because the assets are being invested to satisfy a complex long-term liability. The single most important financial metric for a plan is how well funded it is. A plan’s funded status influences cash contribution requirements, accounting expenses, Pension Benefit Guaranty Corporation (PBGC) premium levels and asset return needs.

Let’s examine why funded status improvement may imply de-risking is appropriate through three different lenses.



Time horizon

Time horizon

Glide paths are particularly important for frozen pension plans with no benefit accruals because their time horizons are typically a function of their funded status. Open and ongoing plans have exceptionally long time horizons with no real end in sight — whether they’re well funded or not. Frozen plans, however, are in many cases targeting an eventual termination, which represents the end of the time horizon for a pension plan. Plan termination requires the settlement of all plan liabilities, which requires being fully funded on a settlement basis. A poorly funded plan is probably a long way from being able to terminate, but a well-funded plan is considerably closer to the finish line. Therefore, funded status improvement for a frozen plan implies that its time horizon is shrinking, which calls for a more conservative funding policy.

Return needs: Hurdle rate analysis

Additionally, glide paths can be useful for pension plans because their return needs are usually tied to the plan’s funded status. Let’s introduce the idea of a plan’s “hurdle rate.” We define the hurdle rate as the asset return necessary for a plan to maintain its current funded status. The plan’s liability continues to grow due to accrued interest, any benefit accruals, and expenses to be paid from the trust. For a plan to maintain its funded position, the assets must grow by an amount equal to the liability growth.

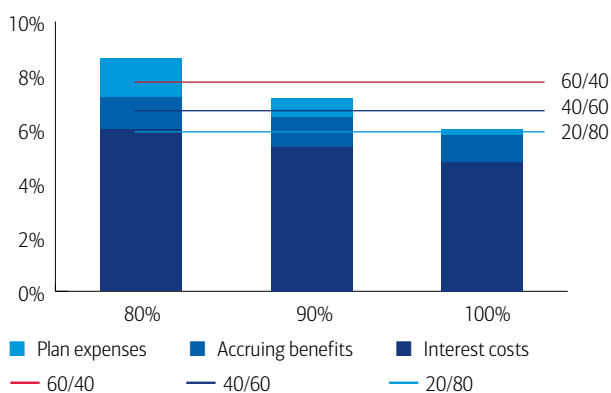


Return needs

An overfunded plan has a larger asset base and will have an easier time matching that liability growth, while a plan with fewer assets will need to achieve a higher rate of return to grow the assets by the same amount of money. Therefore, well-funded plans will generally be able to maintain their funded status more easily with a more conservative asset allocation. Poorly funded plans will need to take more risk to generate higher long-term returns if they hope to maintain or improve their funded status without significant cash contributions.

Consider the following exhibit, with bars showing hurdle rates for a hypothetical plan under various funded statuses. Overlaid are lines that represent the hypothetical expected returns associated with various asset allocations. Where a more growth-oriented 60/40 allocation may be assumed to generate returns at about 8% long term, a more conservative 20/80 allocation may be assumed to generate returns around 6% long term. As shown, at higher funded ratios, more conservative allocations may be effective in meeting returns needs.

Hypothetical hurdle rates by funded status



Asymmetric risk profiles

Pension plans are often confronted with asymmetric risks when considering how investment choices may result in either funded status improvement or deterioration. We say risks are asymmetric because they're often lopsided, with the potential reward associated with funded status improvement dwarfed by the potential costs associated with funded status deterioration. This is most evident for plans approaching being fully funded.

Consider three different pension metrics:

Metric	Implications of being fully funded on the relevant basis	Reward if funded status improves	Costs if funded status worsens
Funding requirements	Minimum required contributions are low or \$0	Minimum required contributions can't be less than \$0, so no reward	Cash funding requirements could increase significantly
PBGC premiums	PBGC premiums are low, with no variable-rate premium	The variable-rate premium can't be less than \$0, so no reward	PBGC variable-rate premiums could jump considerably, increasing the cost to maintain the plan
Termination optionality	Liabilities can be settled with little or no excess assets	Excess assets could be subject to significant taxation	Termination may no longer be an option if the plan is poorly funded

Achieving a 100% funded ratio is a significant milestone for a pension plan, and thus it shouldn't be surprising that risks associated with either funded status improvement or deterioration aren't symmetric at that point. With regard to PBGC premiums, there's another critical level at which risks are asymmetric. The PBGC variable-rate premium (VRP) is capped at \$652 per participant for 2023 plan years. Many poorly funded plans are now subject to that VRP cap, meaning VRPs cannot increase if the plan's funded status deteriorates. However, if a capped plan sees significant funded status improvement, its PBGC VRP can certainly decrease. This asymmetry creates an incentive for more risk-taking at those lower-funded ratios.

Of course, the precise measurement of a plan's funded ratio can be somewhat murky. In the metrics outlined above, there are likely different liability measures for funding purposes, PBGC premium determinations, and settling liabilities through a plan termination. Despite that added complexity, the fact remains that, for many plans approaching a 100% funded ratio on one basis or another, there's generally more to be lost if the funded status falls significantly than there is to be gained if it rises significantly. This implies that taking steps to reduce funded status volatility through de-risking may be appropriate.

How can you customize a glide path?

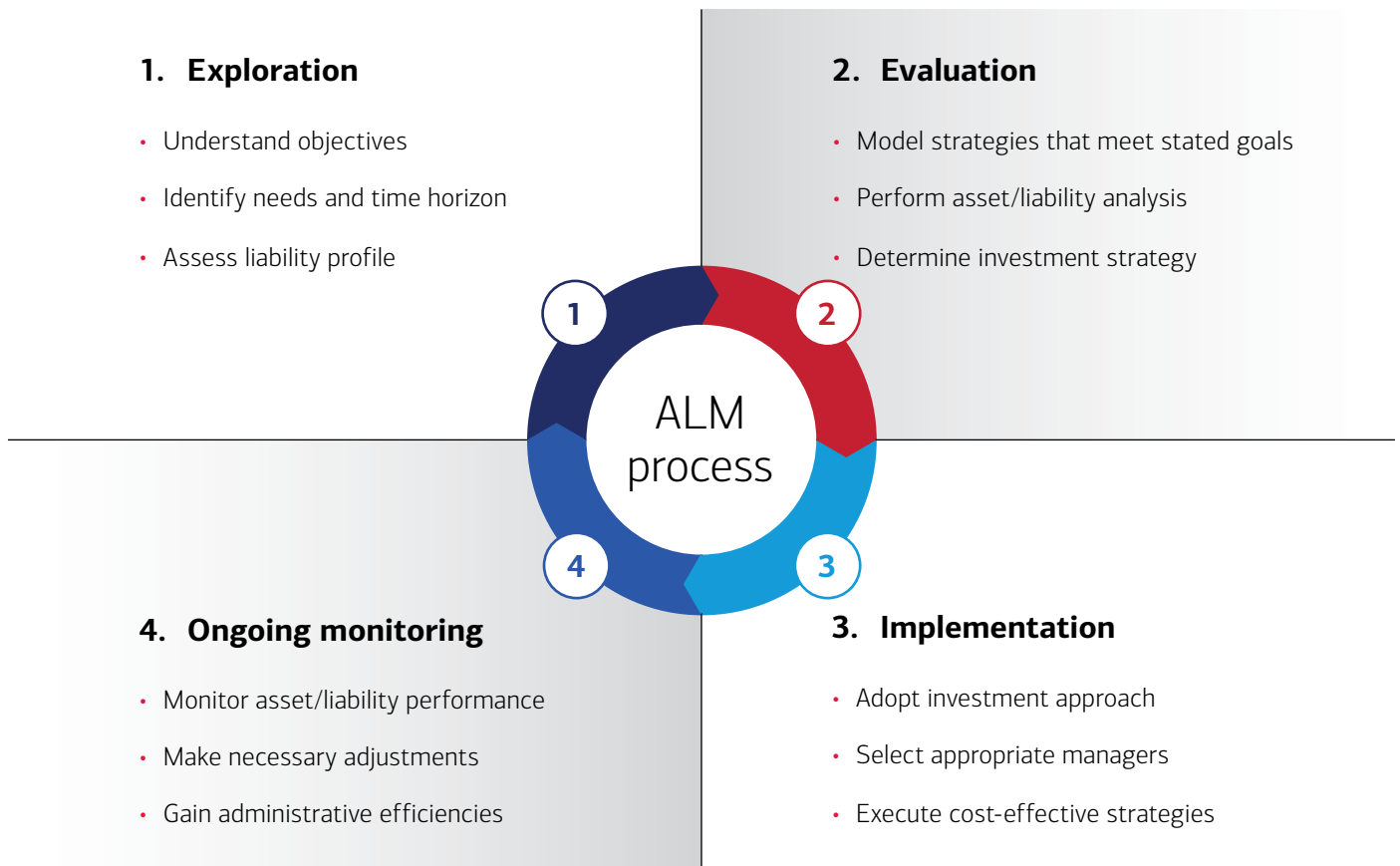
Designing a customized glide path for a given pension plan requires a careful evaluation of the plan's time horizon and return needs, as well as an understanding of the plan sponsor's objectives and risk tolerance. To achieve this understanding, having a structured conversation with the plan sponsor focused on open-ended discovery questions is helpful.

From there, we believe that a comprehensive stochastic Asset Liability Management (ALM) study is the best way to evaluate various glide paths and to explore trade-offs between different policies. A stochastic ALM study relies on projecting all key plan financial measures and their underlying drivers (for example, asset returns and interest rates) in thousands of randomized but internally consistent trials. The study should forecast multiple years to develop a range of likely and unlikely results for the plan under each policy to be considered. For example, Bank of America ALM studies commonly use 5,000 scenarios over a 10-year time

horizon, though this may vary depending on the time horizon for the plan. With such a structure, dynamic glide path policies can be explicitly modeled, with de-risking actions assumed to occur within each scenario as dictated under the policy. We believe this is the best way to fully understand the range of possible results under dynamic investment policies and the inherent trade-offs between risk and reward involved.

Even though a glide path is intended to result in appropriate asset allocations for years into the future, it's not intended to be a set-it-and-forget-it approach. Instead, a continuous process for decision-making should be employed. If the plan's design or its sponsors' objectives change, the strategy should be reevaluated.

Bank of America's continuous approach to decision-making is illustrated in the figure below. Our process is designed as a circle, with each stage leading to the next.

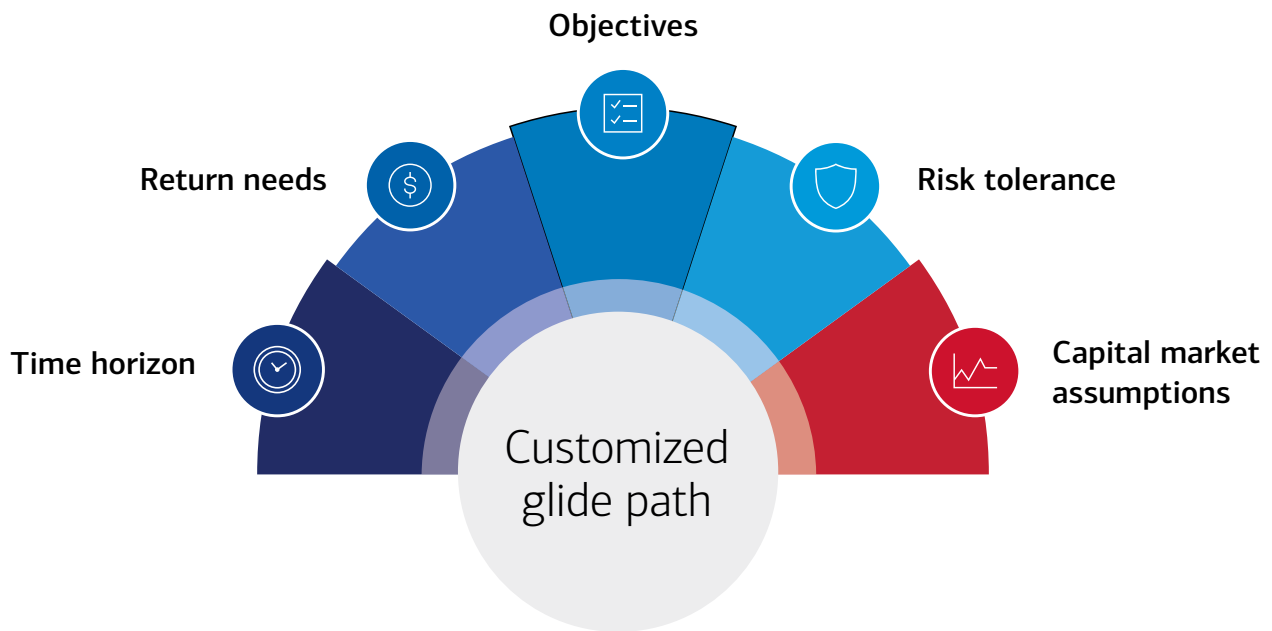


Conclusion

A well-designed glide path details strategic asset allocations that would be appropriate for a plan at various funded status levels and under various economic conditions. For most pension plans, it's appropriate to reduce risk as funded status improves at least somewhat, but the exact specifications could vary widely depending on the time horizon for the plan, the plan's hurdle rate, and the plan sponsor's objectives and risk tolerance. This is why we believe glide paths should always be customized for a plan after completing a thorough discovery process and should be tested through asset-liability modeling.

We also believe the asset-liability modeling process should be collaborative with the plan sponsor to ensure that the glide path is truly consistent with the plan sponsor's goals,

constraints and concerns for the plan. It's common for investment advisors to ask questions about a plan sponsor's risk tolerance, but those questions can be difficult to answer and even harder to interpret. What it means to be "aggressive" or "conservative" can often vary widely from one plan sponsor to the next. We believe a well-constructed ALM study can help plan sponsors more directly understand which glide path designs are most likely to help them achieve their goals while also illustrating the risk-reward trade-offs between different approaches. A goals-oriented asset-liability modeling process can help plan sponsors better understand their own risk tolerance and feel confident that they're selecting a forward-looking policy that's truly appropriate for their plan's circumstances.



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