A DYNAMIC APPROACH TO PENSION GLIDE PATHS

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Introduction

Many US corporate pension plans use long-duration investments—generally fixed income—to hedge some portion of interest rate risk. Plan sponsors broadly agree that over time, as a plan moves from being under-funded to well-funded, risk, relative to liabilities, should reduce, and liabilities should be largely or fully hedged.

Plans generally achieve this objective through a systematic, deliberate and gradual shift away from riskier return-seeking strategies, which are typically weighted toward equities, and move to less risky, long-dated fixed-income securities. The trajectory or the 'glide path' maps these changes to the asset mix.

Glide paths have become very popular with corporate defined benefit plan sponsors. They create an asset allocation mix that reduces risk when the pension plan hits certain pre-determined thresholds. The benefits of having a glide path in place include an orderly de-risking through altering the asset mix, capturing gains from positive market events and preserving these, while moving toward the goal of a fully-funded or over-funded plan. The efficient and active implementation of a glide path can help better match assets to liabilities, increase funded status and eliminate risks that are under-compensated or uncompensated.

At NEPC, we believe there is a significant opportunity to meet objectives more efficiently and successfully along the glide path. To this end, we take a more nuanced and diversified approach. We work closely with our clients to develop a customized portfolio glide path with a dynamic approach to asset allocation. It is critical to us to understand the objectives of our clients and the investment goals they are trying to accomplish. At the same time, we also study their constraints, if any, on investments, for instance, around the use of derivatives. Our strategy provides frequent to continual monitoring of plan assets and liabilities to help lock in and preserve gains from improvements in the funded status of a pension plan, while limiting portfolio risk and volatility over time.

Glide Path: A Catchphrase in the Pension World

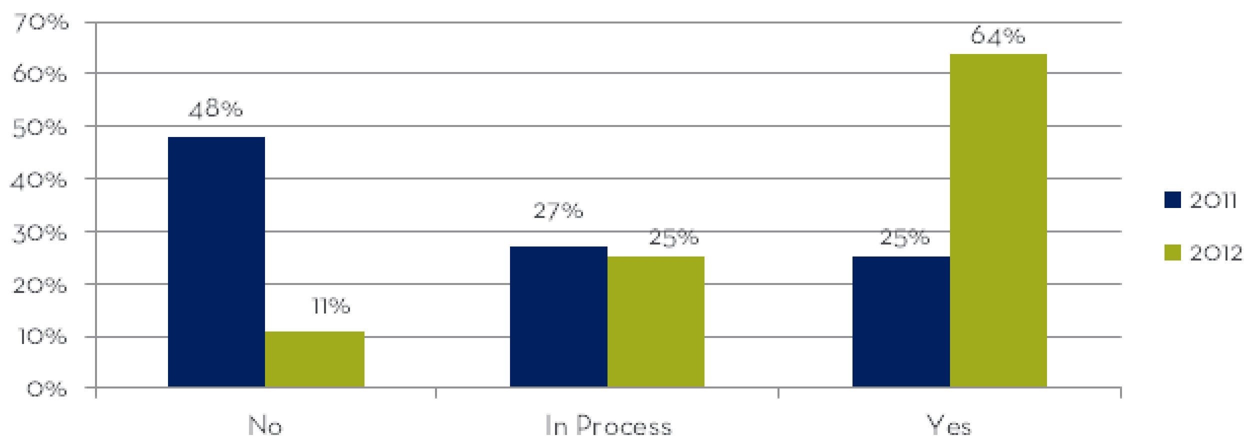
There are times a phrase catches on, quickly becoming part of the lexicon. The idea of managing risk along a glide path has taken US corporate pension plans by storm, displacing liability-driven investment, or LDI, as the term used for de-risking.[1] At NEPC, we date the prevalence of the phrase 'glide path' to 2012 (Exhibit 1), based on the historical results of our annual Corporate Pension Plan Trends survey.

It is not that many plans changed policies in 2012, but rather most renewed their focus on pension risk management, according to a close examination of survey responses. This is why being on a glide path works for many plan sponsors and investment committees:

- For those that have de-risked, it gives a name for strategies already employed
- For those that plan to de-risk in the future, it provides a plan and destination
- The idea of a glide path can appease members on seemingly opposing sides—the total return camp and the de-risking faction.

[1] *To be fair, glide path has already become the term used for the de-risking of defined contribution target date funds. To be even fairer, pilots used the term first.*

Exhibit 1: The Use of Glide Paths (Based on NEPC Survey Results)



Source: NEPC Annual Survey

Even with some conceptual uses of the term glide path, it is clear that significant de-risking is happening. An increasing number of corporations are disclosing glide paths in their pension footnotes. In addition, investing by pension plans is having an impact on long-term interest rates. Every rise in interest rates within the past 10 years has been short-lived as many plans have de-risked by buying long bonds (along with selling equities), the classic glide path action. As more and more pension programs use glide paths, this market impact may serve to keep long-term rates low, even if short-term rates rise as expected. This is a cautionary observation for any plan trying to de-risk tactically or informally. NEPC believes that glide path management is an important tool for overseeing pension objectives, and that a glide path strategy should extend beyond the conventional "sell stocks, buy bonds" mantra.

The Conventional Glide Path

The dominant risks for most corporate pension plans are interest rates (as lower rates increase liabilities) and exposure to risky assets.[2] Risk management needs to address both of these factors. Glide paths directly address these risks by increasing asset interest rate sensitivity (duration) and reducing equity exposure over time. While the ultimate goal or the endgame of de-risking along a glide path can be a fully funded plan with a long-term matched bond portfolio (dedication or immunization), it is more commonly termination and defeasance through lump sums and insurance company annuities.

Contribution and accounting rules provide lower estimates of liabilities than insurance companies which use more conservative assumptions and investments; however, the recent change in mortality to RP-2014 has narrowed the gap. US accounting rules set forth by the Federal Accounting Standards Board still use expected return assumptions and significant smoothing, which can make de-risking a 'cost' on the company's income statement. The typical US plan is underfunded and will improve funded status through some combination of contributions, higher interest rates, and excess returns from risky assets and active management.

Before delving into details of NEPC's methods, we outline the standard approach to glide paths as follows (Exhibit 2):

- The glide path starts at a relatively low (<85%) funded status
- At the beginning, 60% or more of the assets are invested in equities, globally diversified and encompass all capitalization sizes
- The LDI or hedging assets consist of long bonds, with some combination of government/ credit and corporate bonds
- The glide path defines trigger points to sell stocks and buy bonds

[2]*When a sponsor amends a plan to become closed to new entrants (soft freeze) or eliminates all benefit accruals (hard freeze), it truncates the future growth of the plan; yet, these financial risks remain.*

- These trigger points are based on improvements in funded status of as little as 0.5% or as much as 10%, but are usually between 2%-5%

Glide Path: The NEPC Way

At NEPC, we distance ourselves from the one-size-fits-all approach (Exhibit 3). Instead, we work with each client's individual objectives, developing what we believe are better, more flexible and dynamic glide paths that can be customized using the following enhancements: (i) expanded liability hedging toolkit, (ii) expanded and diversified risky assets, and (iii) dynamic de-risking (and re-risking).

(i) Expanded Liability Hedging Toolkit

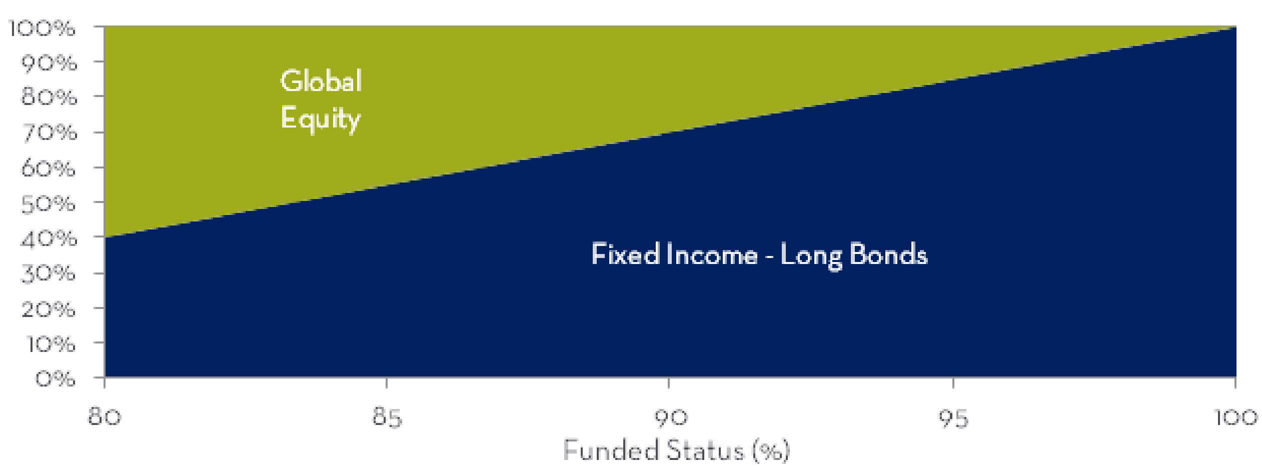
NEPC has consistently championed the use of duration assets beyond just long bonds. This is partly because of our observations of the UK and Netherlands when mark-to-market pension rules were adopted. There, pension plans first moved their bond portfolios into long duration. After finding that this shift did not make a significant difference to interest rate risk, they were moved into more capital-efficient duration vehicles. Capturing this knowledge for our clients in the US, NEPC expanded the LDI toolkit into US Treasury STRIPS (the acronym for Separate Trading of Registered Interest and Principal of Securities), futures, swaps and swaptions. We placed these investments in client hedging programs before Liability-Driven Investment was a popular term and well ahead of the Financial Crisis in 2008. While some clients have used these vehicles directly through an overlay manager, others have accessed them through commingled manager products.

The use of capital-efficient strategies offers several advantages for managing a glide path. Fundamentally, the hedge ratio throughout the glide path can be higher than an implementation with only long bonds. This allows less assets devoted to hedging, so sponsors can maintain robust expected return assumptions longer. Capital efficiency also allows objectives to be customized along the glide path to enable better matching of liabilities along the full yield curve, providing protection against shifts in interest rate. Transaction costs in these strategies are significantly lower than for long-corporate bonds; this is important given multiple trades along the glide path. Finally, since most plans have the bulk of future benefits beyond 30 years, these strategies allow targeted duration at the end of the yield curve.

NEPC's view also differs from the standard approach in that we don't think long-corporate bonds are a very precise hedge to liabilities. This is because:

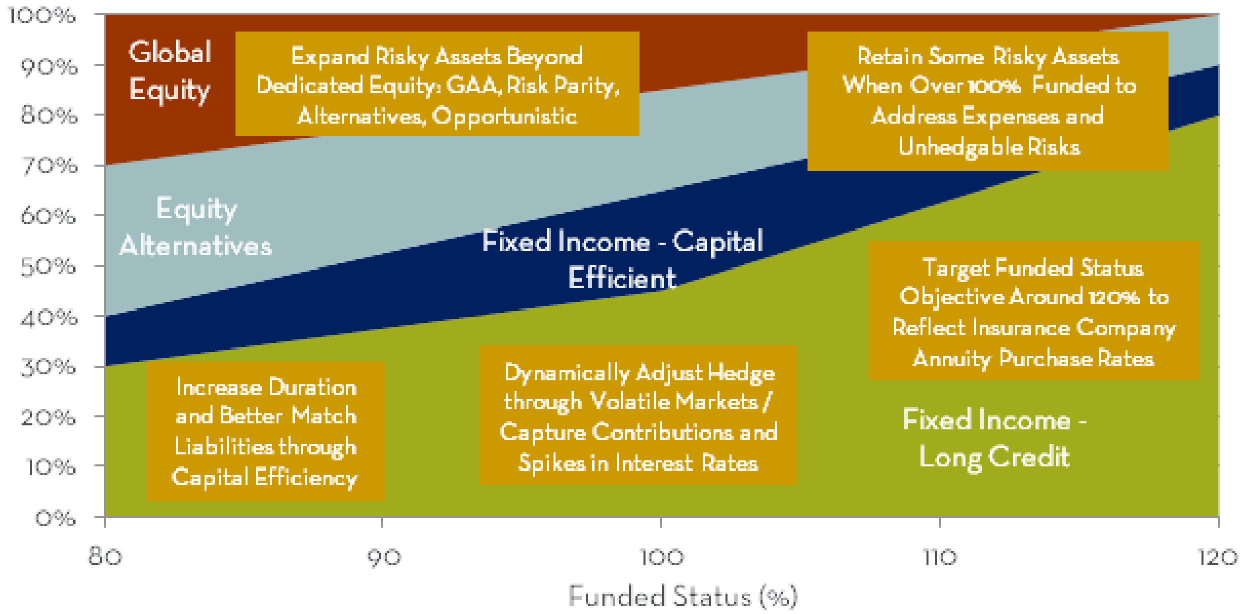
a) While liabilities are often discounted to corporate yield curves, these curves are not investable. When a bond is downgraded or defaults, it is dropped from the index, generally lowering the average yield and raising liabilities. In contrast, an investment in that same bond would experience a full loss. Long-corporate bonds are an important part of de-risking, but we would like our clients to minimize this mismatch risk as much as possible.

Exhibit 2: Conventional Glide Paths



Source: NEPC

Exhibit 3: NEPC Glide Path



Source: NEPC

b) The timing of coupon and principal payments of long bonds do not effectively match typical pension benefit payment projections. As noted above, capital-efficient strategies can be used along with a long-bond portfolio to match along the curve, but this is difficult or impossible to accomplish with physical bonds alone. Dedicated bond strategies can be used, but we find them most appropriate at the end of the glide path, as described in the following section. Investment managers that set up bond portfolios dedicated to track liabilities generally expect the tracking error to exceed 2%. This is certainly not the precision that would be expected if liabilities had a true hedge.

c) The credit spread component of long bonds is highly correlated with risky assets in general, and stocks specifically. This holds true especially at the start of a glide path, where higher equity exposure serves as a partial credit spread hedge. *(Note:* NEPC will publish a separate paper focusing on this aspect of pension risk management.)

d) Given the movement of credit spreads within a cycle, there are consistent opportunities for patient long-term investors to buy credit when spreads are high. We do think long bonds are part of the LDI toolkit, and are appropriate investments regardless of the credit cycle. Still, in our annual actions for corporate clients, we noted outsized credit opportunities in 2009 and 2012 as times to employ or add to long-credit portfolios. This dynamic approach to buying credit is akin to the logic of glide paths: as rates rise, capture higher yields and credit spreads.

(ii) Expanded and Diversified Risky Assets

The investments not used for hedging become the 'earning' or 'risky' assets pool, seeking higher returns than liabilities. While equities should be a significant component of risky assets, NEPC favors a diversified approach. In a glide path, instead of the typical use of global equities—which tend to go up and down with the S&P 500—we employ diversifying risky assets. These include assets used successfully by many NEPC clients, for instance, global asset allocation, risk parity and hedge funds. These assets provide additional diversification in terms of risks and returns alongside investing directly in equities. Earning asset pools can also include fixed-income investments such as high yield, emerging market debt, and multi-sector strategies, if these assets provide an adequate risk/ return profile.

Another area of differentiation for NEPC glide paths is that we are willing to consider investments that don't fit neatly in the hedging and risky -asset buckets. An example is 'dual beta' products that provide both liability hedging and exposure to equities. They work very well at meeting competing client objectives through capital efficiency, but they don't fit into the silos of hedging and earning assets. The solution, then, is to split the attribution reporting of these products into each beta exposure. By tracking the risky and hedging components of dual beta strategies independently, the positive or negative impact of each piece can be evaluated.

Some clients also incorporate limited use of illiquid investments, since the glide path time frame to full funding is often 5+ years in the future. These illiquid investments would not be a traditional seasoned private equity portfolio, but rather select opportunities with well-defined exits, such as distressed lending. There has also been a case of an insurance company accepting limited private equity for an annuity purchase.

(iii) Dynamic De-Risking (and Re-Risking)

Glide paths are designed to be dynamic: as funded status improves, less risk is taken, reducing the likelihood of falling back. Some NEPC clients have taken this a step further by looking at the source of improved funded status in the implementation of de-risking. Using this approach, a dynamic glide path:

- Puts contributions only into hedging assets and not risky assets
- Captures gains in risky assets by rebalancing along the glide path
- Captures drops in liabilities by extending duration after a rise in rates

While this type of strategy requires frequent monitoring, it should benefit over time from a contrarian approach.

Some clients have also adopted glide paths that 're-risk,' that is, take more risk after funded status has fallen. Our surveys indicate that about one-third of sponsors with glide paths have a re-risking program. We find that re-risking is usually not the mirror image of de-risking; most common is a re-risking plan whose triggers are wider than those for de-risking. For example, a plan that de-risks after a 2% increase in funded status would only re-risk if funded status fell by 4%. Another approach is to have de-risking automatically follow a pre-approved schedule, while re-risking requires a discussion within the investment committee.

NEPC's analysis of re-risking clearly shows there are environments that can help grow funded status more quickly after a short-term loss in equity markets or decrease in yields. However, there are times when markets have significant momentum, and a contrarian approach that buys low keeps buying lower. Over the long-term history, including the rising rates of the 1970s, a glide path that re-risked in addition to de-risking would not only have had higher funded status, but also much higher funded status volatility. Since the ultimate objective of a glide path is a fully funded matched portfolio, the opportunity for higher funded status beyond 120% may not be worth a bumpier ride along the way.

For over 30 years, interest rates have trended lower. This has limited the opportunity to de-risk, since liabilities increase as yields fall. However, there have been many short-term increases in yields and periods of high returns in risky assets that could trigger a glide path de-risking. The problem is that these gains can go away as quickly as they appear, especially when measuring funded status quarterly and making decisions several weeks into the quarter. Monthly measurement is a little better, but still misses most opportunities. For this reason, many plan sponsors have moved to daily monitoring of funded status.

When daily monitoring is linked to an automatic glide path execution schedule, a plan has the best opportunity to capture gains in funded status as they appear. To be clear, daily monitoring is not about frequent trading; it is about harvesting gains efficiently. It does require methodology, measurement, and execution systems. Most sponsors hire a third party to monitor and execute the glide path. NEPC does offer these resources through our Discretionary Services team.

End Game

As a plan nears the end of the glide path, objectives can shift, warranting some essential decisions. Contribution and accounting rules take on less significance, while positioning the portfolio for annuitization and purchase by an insurance company become vital. Some sponsors are willing to get "close" to full insurance company pricing and plan to pay a final contribution upon plan termination. Others would prefer to not make any additional contributions, and aim for being over funded. By law, this excess will revert to participants, often as part of a successor defined contribution plan. These sorts of decisions will help determine if the plan retains any risky assets at all at the end of the glide path.

At NEPC, we find most plans are amended to offer lump sums to deferred vested participants, providing them earlier benefits, and likely saving the higher cost that insurance companies charge for annuities that are not in pay status. Any such lump sums will have zero duration once their interest rate is set, usually in October of the prior year for plans using the calendar year. Using an estimate of take up, that is, the percentage of participants that choose the lump sum, assets can be held in cash until payment. Some plans have also been amended (with approval from the IRS) to offer lump sums to retirees already receiving annuities. We don't expect many sponsors to pursue this approach, since it requires significant legal expense, and also incurs an anti-selection charge by insurance companies for the retirees that retain annuities.

The assets not held to pay lump sums should mirror how an insurance company would match liabilities. This is the time where a truly dedicated bond portfolio is most helpful. This portfolio not only reduces mismatch risk, it also can result in better pricing from insurance companies, if the annuity purchase is large ($500 million to $1 billion and higher). An insurance-ready investment manager can be hired at any point during the glide path, or an existing manager can transition their portfolio over time. Depending on the size of the plan at this point, more than one manager could be used. NEPC currently profiles insurance-ready managers and we expect the number of managers with this expertise to grow over time as an increasing number of plans reach the goal of full funding.

Conclusion

Glide path is the new catchphrase in pension risk management. It reflects the desire to de-risk over time, and capture gains in funded status, with the end goal of a fully-funded plan ready to be held long term, or available for annuity purchase and termination. NEPC believes there is a significant opportunity to better meet objectives along the glide path by using capital-efficient and diverse assets, dynamic frequent monitoring, and planning for a successful landing.

Disclaimers and Disclosures

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