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Voya Corporate Pension Intelligence Report 2025

We present key trends from 130 defined benefit pension plans to help sponsors determine where they're ahead of the curve—and where they're behind it.

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Executive summary

Voya's annual pension survey looks at the defined benefit plan performance of 130 S&P 500 companies from 2007 through 2024, analyzing key characteristics such as asset allocation, funded status, net asset returns versus liability returns, discount rates, expected return on assets.

By investigating the links between asset allocation trends, funded status improvement, contribution, service accruals, and expected versus actual return on assets, the study evaluates fixed income's role within a liability-driven investing (LDI) strategy in mitigating funded status volatility and interest rate risk.

Key findings: Fixed income has supported funding stability through volatile markets

33%

Average fixed income allocation in 2007, with plans heavily weighted to equities

51%

Peak plan fixed income allocation, in 2023

3%

Percent of plans in 2007 with at least half their assets allocated to public and private fixed income

58%

Percent of plans in 2024 with at least half their assets allocated to public and private fixed income

21%

Average plan allocation to alts in 2024

101.3%

Funded status at the end of 2024, validating the LDI approach

Company inclusion methodology for pension analysis

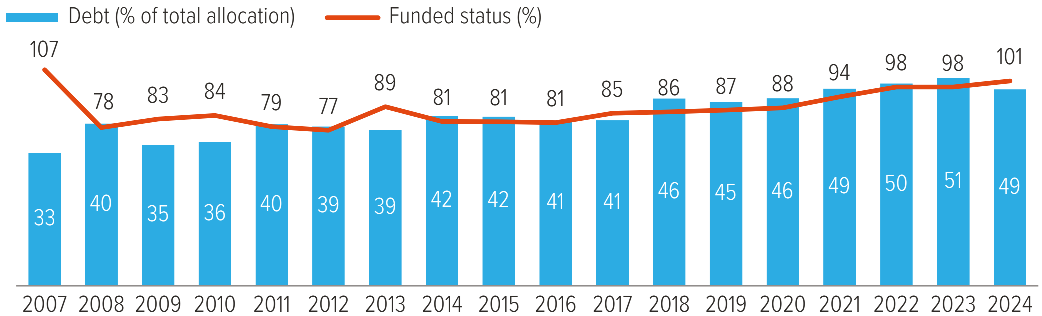
This study examines 130 companies in the S&P 500. Requirements for inclusion are as follows:

- Must be an S&P 500 company as of 12/31/2024
- Must have a defined benefit pension plan with assets greater than $100 million
- Must have a fiscal year that concludes on December 31
- Must have continuously disclosed pension data in their annual 10-K filing from 2007 through 2024

Unless stated otherwise, our analysis is in the aggregate. For example, total assets and liabilities are the summation of all 130 corporations' assets and liabilities (as if they represented one big pension plan).

Exhibit 1: DB plans have been consistently increasing allocations to fixed income

Fixed income allocations versus funded status



Source: Voya IM, Standard & Poor's, company 10-K filings.

Why pension funding health matters

A well-funded pension plan offers multiple advantages for corporations. It reduces the need for future contributions, enhances credit ratings, and minimizes balance sheet volatility.

Conversely, underfunded plans may trigger additional funding requirements under Employee Retirement Income Security Act (ERISA) and Internal Revenue Service (IRS) regulations as well as onerous Pension Benefit Guaranty Corporation (PBGC) premiums (essentially government insurance on a pension shortfall).

For employees, strong funding status ensures the security of promised retirement benefits and lowers the risk of benefit reductions or freezes. For investors, pension obligations represent a significant balance sheet liability—funding status serves as a key indicator of financial discipline and long-term risk management.

This study offers timely insights on how asset allocation choices—particularly fixed income strategies—affect funded status outcomes across varying market conditions and plan types (e.g., frozen versus accruing).

The study also provides corporate sponsors with strategic guidance on navigating funding volatility and aligning investment decisions with long-term plan stability.

Pension strategy should not exist in isolation. It must align with broader corporate objectives such as capital allocation, M&A activity, and workforce planning. For example, a well-funded and de-risked pension plan can enhance a company's credit profile, reduce financing costs, and support strategic flexibility during acquisitions or restructuring.

After the global financial crisis, many plans embraced duration matching and risk mitigation strategies, resulting in rising fixed income allocations.

Market backdrop: A protracted recovery

Between 2007 and 2024, defined benefit plans were significantly influenced by major economic disruptions and shifts in monetary policy.

The 2008 financial crisis presented plans with a double whammy: lower rates (higher liabilities) coupled with severe asset losses. Pension sponsors were left reeling, and LDI solutions gathered momentum. LDI solutions gained additional support because the strong equity gains from 2010 to 2019 were not enough to surmount the impact that persistently low interest rates had on funded status.

For perspective, there was an almost 350-basis-point decline in average discount rate from 2008 to 2021 (Exhibit 8). In response, many plans adopted LDI strategies, increasing fixed income allocations and embarking on interest hedge programs to manage interest rate risk. As illustrated in Exhibit 1, there was a steady rise in fixed income allocations, which by 2024 had grown to roughly 1.5 times the amount allocated in 2007.

Some plans have recently leaned heavily into equities to play catch-up to liabilities. That has mostly paid off, but it's now an opportune time to de-risk.

Defined benefit plans are highly sensitive to both market performance and interest rate fluctuations. Over the past 17 years, companies with increasingly conservative, fixed-income-heavy portfolios have experienced more stable—but slower—improvements in funded status.

In contrast, plans with higher equity exposure faced greater volatility, but benefited significantly in the years following 2021. As interest rates rose, liabilities declined, and equity markets delivered strong returns, further boosting funded status.

Two major stress events tested the resilience of LDI strategies in recent years: the Covid pandemic in 2020 and the regional banking crisis in 2023.

Despite the market turbulence, the average corporate DB plan demonstrated significantly greater resilience during these periods. This was largely due to the broader adoption of liability-aware investment approaches, which helped mitigate funded status volatility and align asset behavior more closely with liabilities.

This underscores the importance of aligning investment strategies with liability profiles and prevailing market conditions. Reducing funded status volatility should remain a key objective.

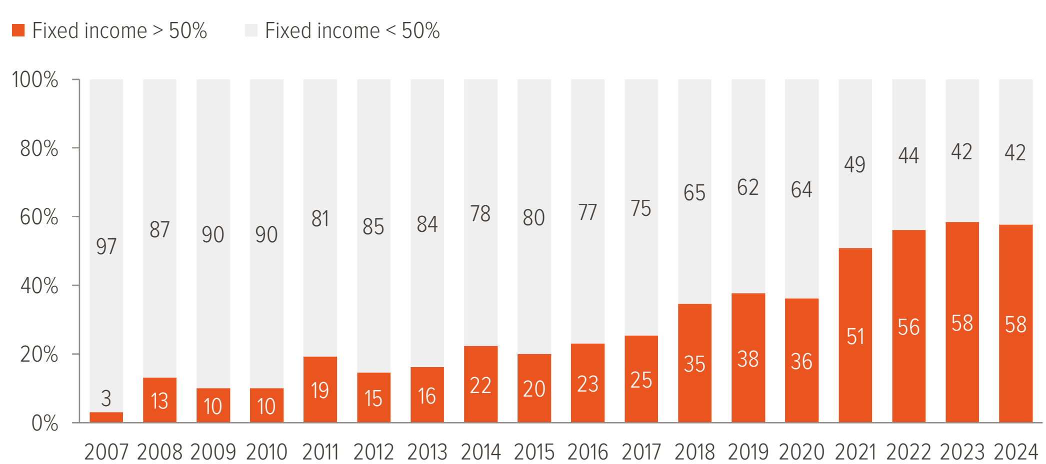
While no one can predict the direction of interest rates, plans that embraced equity risk were rewarded with improved funded status. However, this improvement did not come without risk. Now is an opportune time for those plans to consider de-risking and locking in those gains.

What's causing DB plans to increase fixed income allocations?

From 2007 to 2024, the relationship between fixed income allocation and funded status in DB plans reflects a strategic evolution in pension management. In 2007, fixed income allocation was just 33%, with plans heavily weighted toward equities. The 2008

Exhibit 2: Fixed income—both public and private—represents a greater percentage of plan assets

DB plan percentage allocations to fixed income



Source: Voya IM, Standard & Poor's, company 10-K filings.

The rise in alternative investment allocations—private equity, real estate, and hedge funds—has broadly been a response to the low-yield environment after 2008.

financial crisis triggered a sharp decline in funded status and increased focus on liability-driven investing. This prompted a gradual shift toward fixed income investments to reduce volatility. Between 2010 and 2015, fixed income allocations rose steadily as LDI gained traction, though funded status remained volatile due to persistently low interest rates.

We note a missed opportunity in 2013, during the taper tantrum, when funded status reached 88% yet fixed income did not meaningfully increase to secure those gains. From 2016 to 2024, allocations increased further, reaching their peak at 51% in 2023 (Exhibit 1), reflecting a broader de-risking trend.

The recent surge in allocations to investment grade private credit is captured within fixed income allocations, not alternative assets. This nuance matters.

Funded status stabilized during this period. In 2021 and 2022, strong equity markets and rising interest rates drove funded status from 93.5% to 98.4%, and 2024 ended with funded status at 101.3%, validating the LDI approach.

From 2023 to 2024, fixed income allocations declined slightly as some plans rebalanced portfolios, yet funded status remained strong, gaining from well-timed equity exposure, improved resilience through the regional banking crisis, and strategic flexibility in response to changing market conditions.

Looking at this through a different lens, the percentage of companies with over 50% in fixed income has increased significantly since the 2008 crisis (Exhibit 2). In 2007, only 3% of companies allocated 50% or more of their pension assets to fixed income, while 97% remained below this threshold. By 2024, this trend had reversed, with 58% of companies allocating at least 50% to fixed income.

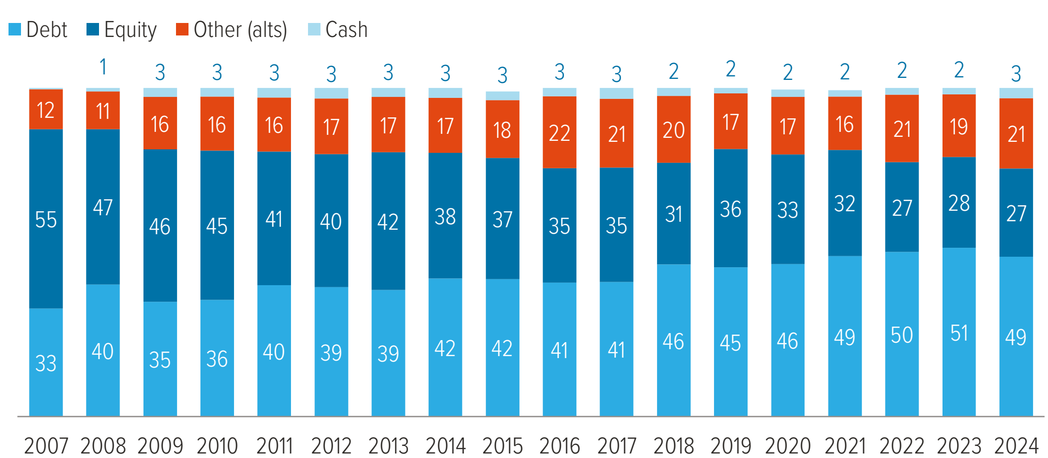
This transformation is closely tied to the aftermath of the 2008 financial crisis, which exposed the risks of equity-heavy portfolios and led to a reassessment of investment strategies. Over the following years, persistently lower interest rates, increased market volatility, and regulatory reforms—such as enhancements to funding requirements and accounting standards—encouraged pension plans to adopt LDI strategies. These strategies prioritize duration matching and risk mitigation, making fixed income assets particularly attractive.

The growing number of companies opting for higher fixed income allocations signals a collective move toward stability, predictability, and long-term solvency. Fixed income investments offer lower volatility and more reliable cash flows, aligning well with the goal of managing pension liabilities effectively.

The use of fixed income and alternatives increased significantly from 2007 to 2024.

Exhibit 3: The big stock squeeze—plans halve their public equity allocations between 2007 and 2024

DB asset allocation by category (%), 2007-2024



Source: Voya IM, Standard & Poor's, company 10-K filings.

The expansion of fixed income allocations is not merely a defensive move, given private credit's potential to deliver more spread at a given risk level.

Ultimately, this shift reflects a maturing investment philosophy among institutional pension managers—one that values resilience over aggressive growth. As financial markets continue to evolve, the increasing preference for fixed income positions S&P 500 pension plans to navigate future uncertainties with greater confidence and strength.

Other asset allocation trends

From 2007 to 2024, the asset allocation patterns of U.S. DB pension plans reveal a strategic evolution that extends beyond a simple shift toward fixed income. While allocations to bonds have nearly doubled over this period, the data also show a notable increase in exposure to "other investments," a category that typically includes private equity, real estate, infrastructure, and hedge funds. These asset classes offer the potential for higher returns and portfolio diversification, but they also introduce complexity, illiquidity, and valuation challenges. Their growth reflects a deliberate response to the prolonged low-yield environment and a broader effort to enhance portfolio efficiency.

Frozen plans have surged from 3% to 31% of the plans in this study.

It's important to note that the recent surge in allocations to investment grade private credit is likely captured within the fixed income category and not classified as an alternative asset. This nuance matters, as private credit—particularly allocations to investment grade private credit—has become a cornerstone of liability-driven investing. (Read more here: LDI in Action: How Pension Funds Are Using Investment Grade Private Credit.)

Accordingly, the expansion of fixed income allocations is not merely a defensive posture but a strategic alignment with the long-term objectives of pension plan sponsors.

The rise of frozen U.S. pensions

The evolution of defined benefit pension plans from 2007 to 2024 reveals a significant structural shift in corporate retirement strategies. As Exhibit 4 illustrates, the proportion of accruing pension plans has steadily declined from 97% in 2007 to 69% in 2024, while frozen plans have surged from 3% to 31%.

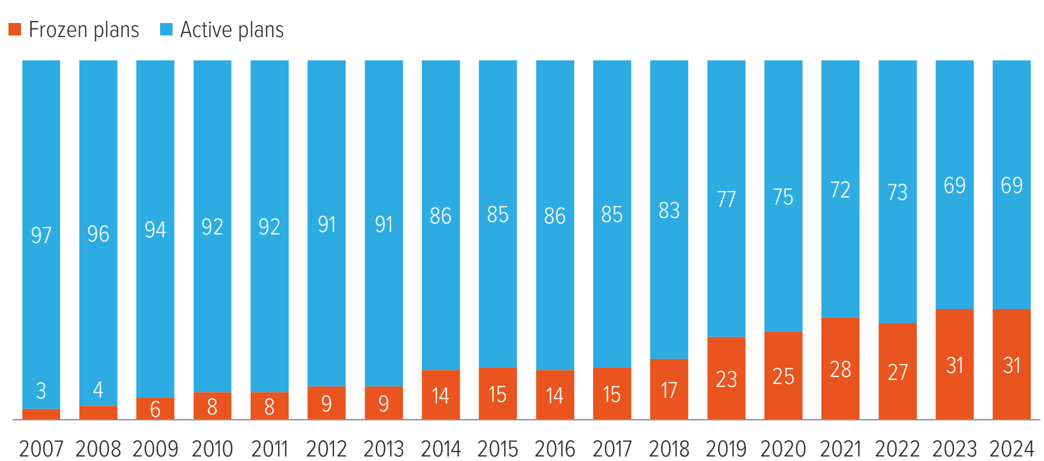
We define frozen plans as those that have less than a 0.5% service accrual as a percentage of beginning-of-year liability.

This trend reflects a broader recalibration in the U.S. financial market, driven by

Freezing pension plans became a strategic lever to contain future obligations and preserve capital amid uncertain financial conditions.

Exhibit 4: More corporations are freezing DB plans

Accruing plans versus frozen plans (% of total companies)

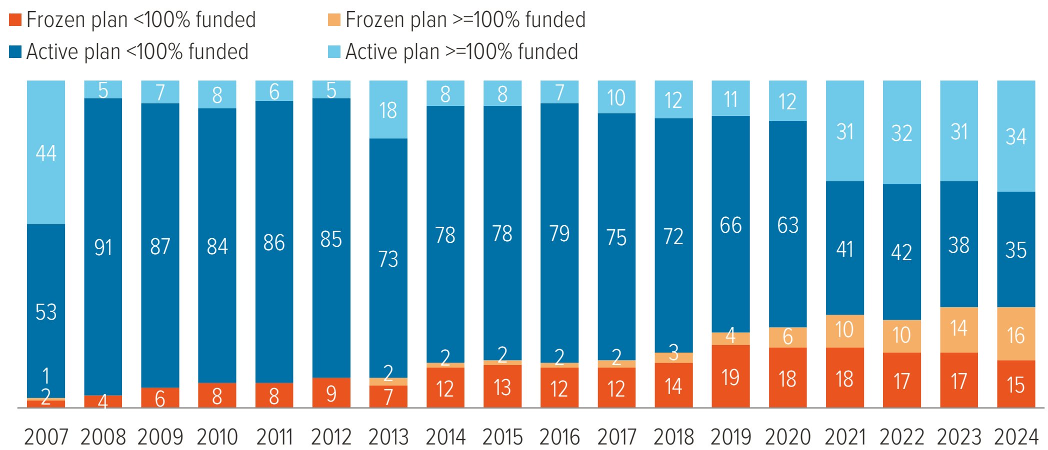


Source: Voya IM, Standard & Poor's, company 10-K filings.

While industry sentiment suggests that frozen plans outnumber those still accruing benefits, our data show that only 31% of plans are currently frozen.

Exhibit 5: Plan status is not correlated with funding levels

Funded status of accruing plans and frozen plans (% of plans)



Source: Voya IM, Standard & Poor's, company 10-K filings.

economic volatility, regulatory pressures, and corporate risk management imperatives.

Surprisingly, despite the general assumption in the press (and among some pension professionals and sponsors)that all plans are frozen, we found that more than two-thirds of the plans in our data were still accruing benefits as of year-end 2024. Regardless, freezing pension plans became a strategic lever to contain future obligations and preserve capital amid uncertain financial conditions.

This shift also mirrors the broader transition from defined benefit to defined contribution plans as firms seek to transfer retirement risk from employer to employee. The increasing prevalence of frozen plans signals a cautious corporate stance toward guaranteed retirement benefits, prioritizing financial flexibility over legacy commitments.

Frozen or accruing status is not an indicator of funding level

While the split between overfunded and underfunded plans is roughly even across both accruing and frozen plans, accruing plans are, on average, slightly better funded (Exhibit 6).

Most frozen plans are not far behind their accruing equivalents in funded status. This is partly due to transition mechanics: When accruing plans are frozen, projected liabilities are replaced with accumulated-to-date liabilities, creating a bump in funded status. This "bump" is then included in the frozen plan data.

A notable trend among defined benefit plans is the accelerated shift toward fixed income and de-risking by frozen plans, compared with accruing ones (Exhibit 7). As these plans approach their end-state strategies—whether annuitization or a do-it-yourself hibernation model—mitigating interest rate risk becomes a top priority.

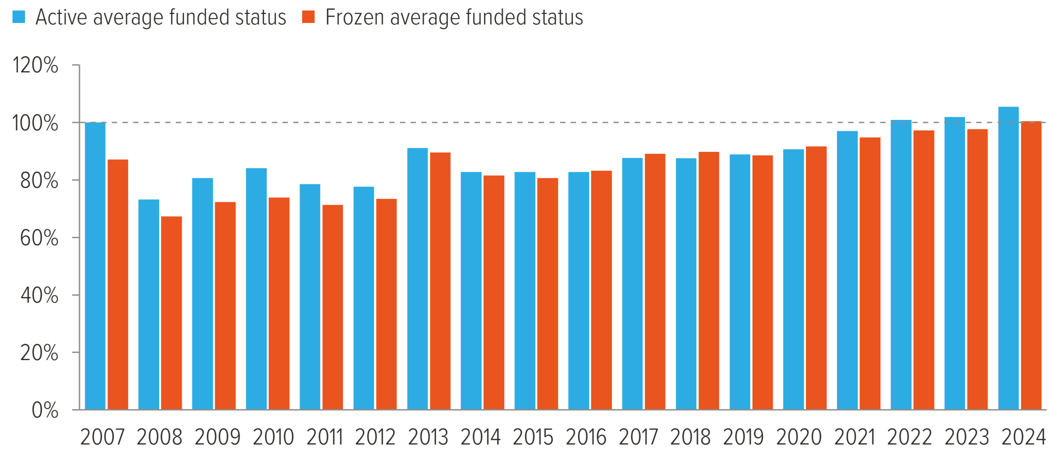
However, an intriguing countertrend has emerged: plan reopening. Among the frozen plans in our study five are more than 125% funded, (as of year-end 2024) positioning them as strong candidates for reopening.

This reversal underscores how surplus funding can create strategic flexibility, prompting sponsors to reassess the long-term role of their pension plans.

Of course, accruing plans face an added return hurdle due to ongoing service accruals. While recent equity market performance has benefited these plans,

Exhibit 6: Improved funding status of frozen plans

Funded status comparison of active versus frozen plans



Source: Voya IM, Standard & Poor's, company 10-K filings.

Frozen plans tend to be focused more on de-risking and often have significantly higher fixed income allocations than accruing plans.

the future direction of interest rates remains uncertain. With funded status levels now at peaks not seen since 2008, it is prudent for sponsors of accruing plans to consider de-risking and locking in these gains.

In conclusion, both plan types have responded to macroeconomic pressures, but their strategies diverged. Sponsors of frozen plans prioritized capital preservation through higher fixed income allocations, while those managing accruing plans maintained a more balanced asset mix to support ongoing obligations.

These trends underscore the critical role of plan status in shaping funding and investment decisions within the evolving U.S. DB pension landscape.

Expected return versus actual return on assets

Several frozen plans are over 125% funded, making them strong candidates for re-opening.

The use of expected returns in U.S. pension accounting creates a misleading impression of stability and predictability that does not reflect the actual performance of pension plan assets.

Historical data from 2007 to 2024 show that while expected returns remain relatively constant, actual returns vary significantly due to market volatility, economic cycles, and asset allocation decisions (Exhibit 8). This disconnect highlights the limitations of relying on expected returns as a meaningful indicator of pension plan outcomes.

Under current U.S. accounting standards, pension plans are allowed to recognize expected returns on plan assets as income, which reduces reported pension expense and the accompanying hit-to-equity.

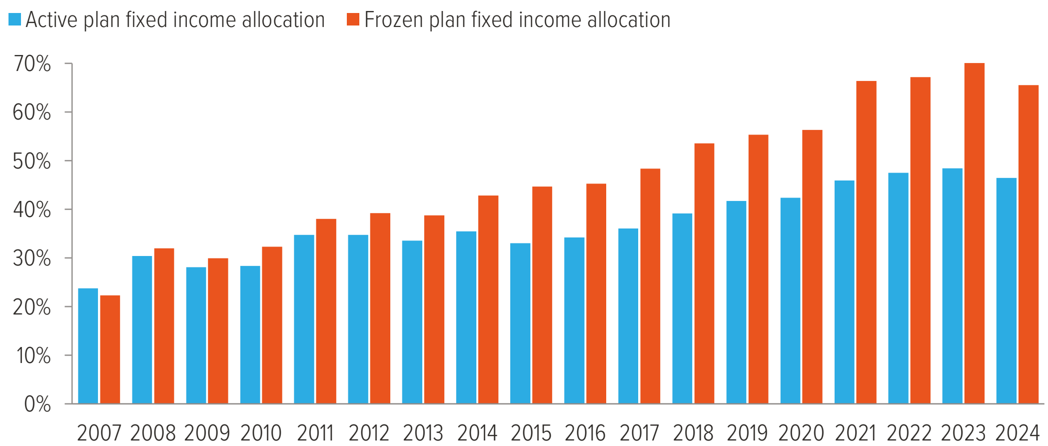
This treatment can incentivize corporate finance leaders to adopt riskier investment strategies to justify higher expected return assumptions. The result is a potential misalignment between the accounting portrayal of pension health and its economic reality, particularly in years when actual returns fall short of expectations.

A striking example of pension dynamics unfolded in 2022, when equity markets fell by roughly 20% while interest rates surged nearly 300 basis points (Exhibit 8). Despite the severe drawdown in asset values, the sharp rise in rates caused pension liabilities to contract, resulting in a net improvement in funded status of approximately 4 percentage points (Exhibit 1).

This outcome defied conventional expectations, as the typical negative correlation between stocks and bonds

Exhibit 7: Frozen plans allocated more to fixed income

Fixed income allocation comparison of active versus frozen plans



Source: Voya IM, Standard & Poor's, company 10-K filings.

Counting expected returns as income can incentivize some financial executives to reach for risk.

broke down—both asset classes declined simultaneously.

For pension plans, this rare convergence exposed the fragility of relying solely on asset performance to manage funding levels. In many ways, sponsors got lucky, benefiting from a rare offset between asset losses and liability gains. But such favorable conditions are the exception, not the rule. Markets are inherently unpredictable, and relying on fortunate timing is not a sustainable strategy.

The 2022 experience underscores the importance of LDI, where the focus shifts from chasing returns to managing the economic reality of obligations. Plans with robust LDI strategies—particularly those hedging both interest rate and credit spread risk—were better positioned to weather the volatility and preserve funded status.

2022's surging interest rates and falling market resulted in many over-risked plans "getting lucky" as liabilities shrank faster than assets.

A well-structured LDI program aims to align asset returns with the liability discount rate that informs the liability return. When assets are aligned with liabilities, funding status volatility is minimized, and reliance on speculative return assumptions decreases. In a fully funded and hedged plan, where asset duration matches liabilities, the expected return on assets (EROA) converges with the liability discount rate.

International standards such as IAS 19, commonly used in Europe, take a more conservative approach by using the liability discount rate rather than expected asset returns in the determination of pension expense.

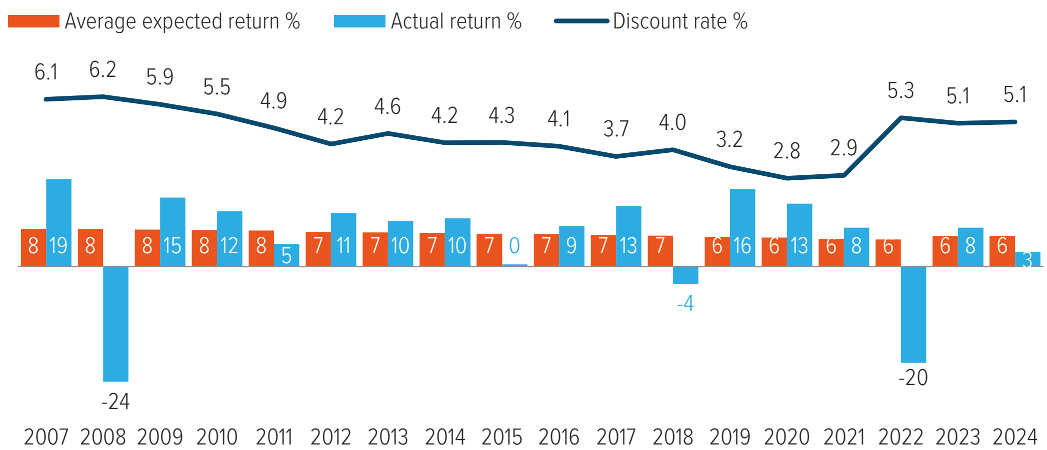
This method discourages excessive risk-taking and provides a clearer view of the true cost of pension obligations. It also enhances comparability across organizations and jurisdictions by focusing on the liabilities rather than the uncertain performance of assets.

While the U.S. framework has its rationale, ostensibly to accommodate smoothing, the historical divergence between expected and actual returns suggests that a closer alignment with liability-based benchmarks could improve transparency and better reflect the long-term nature of pension commitments, especially for pension plans that are closed and frozen.

The goal should be to ensure that accounting practices support sound financial management without encouraging undue risk.

Exhibit 8: Actual returns have often varied significantly from expected returns

Total expected return, actual return and discount rate



Source: Voya IM, Standard & Poor's, company 10-K filings.

In the hierarchy of corporate pension plan risks, interest rate risk ranks just below equity risk—and often proves more insidious.

Preserving funded status gains: Lessons learned from unsecured contributions and falling rates

Defined benefit pension plans are shaped by contributions, market performance, and interest rate movements. Despite strong contributions and favorable market conditions, defined benefit pension plans often fail to achieve durable improvements in funded status without strategic asset reallocation and interest rate hedging.

Exhibit 9 illustrates how employer contributions and service costs interact over time, and how funded status responds—or fails to respond—depending on sponsor behavior and economic shifts.

Service costs represent the annual accrual of pension liabilities. Conceptually, they resemble the employer match in a 401(k) plan. In a fully funded and hedged DB plan, a sponsor can contribute an amount equal to the service cost and incur no additional risk. Pension investing, at its core, follows a simple formula:

service accruals + expenses = contributions + investment returns

If contributions are made to cover each year's service accrual, and the plan is fully de-risked and fully funded, investment returns approach zero, Conversely, if contributions are zero, the investment return would need juiced-up risk. While theoretical, this framing helps clarify the relationship between service accruals and contributions.

Looking at Exhibit 9, several years show contributions exceeding service costs, which should have boosted funded status. Yet funded status moved sideways or declined. From 2016 to 2018, contributions surged—especially in 2017, when sponsors accelerated funding ahead of the corporate tax cut. Despite this, funded status did not improve proportionately.

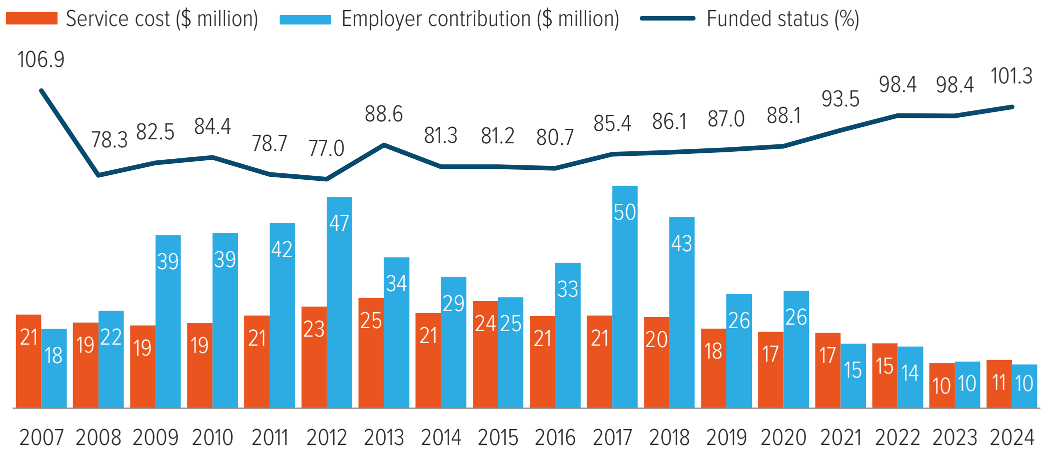
So what happened? Discount rates fell by about 100 basis points from 2016 to 2019 (Exhibit 10), increasing liabilities and offsetting the impact of contributions. More importantly, sponsors did not shift assets to fixed income, leaving gains exposed to market volatility.

Going back a few more years, another missed opportunity occurred during the 2013 taper tantrum. Equity markets returned over 30%, discount rates rose 40 basis points, and funded status jumped 11 percentage points. But by the end of 2014, it had dropped 9 basis points. Again, no meaningful de-risking took place.

Investment grade private credit is an increasingly indispensable tool for managing spread risk.

Exhibit 9: Funded status moved sideways or declined despite contributions exceeding service costs

Average service cost versus average employer contribution



Source: Voya IM, Standard & Poor's, company 10-K filings.

Smart sponsors are striving toward rate agnosticism: a state where rate movements no longer matter.

In the hierarchy of pension risks for corporate plans, interest rate risk ranks just below equity risk—and often proves more insidious. Despite what's often called the longest bull market in history (2009-2020), and despite contributions well above service cost accruals, many pension plans saw their funded status deteriorate.

The culprit? The inverse relationship between interest rates and pension liabilities, which underscores the acute sensitivity of obligations to rate movements.

As rates rise, liabilities shrink—improving funded status and easing the financial burden on plan sponsors. This dynamic is clearly visible in Exhibit 10, where the uptick in discount rates in 2022 coincides with a sharp contraction in projected benefit obligations.

Conversely, falling rates inflate liabilities, often triggering higher contributions, increased PBGC premiums, and—if funded status deteriorates severely—restrictions on lump sum payments.

For pension managers, tracking discount rate trends is essential. But even more critical is the imperative to hedge both interest rate and credit spread risk. These are the hidden engines of a robust LDI program.

And the fuel? Not just investment grade public corporates, but investment grade private credit—an indispensable tool for managing spread risk.

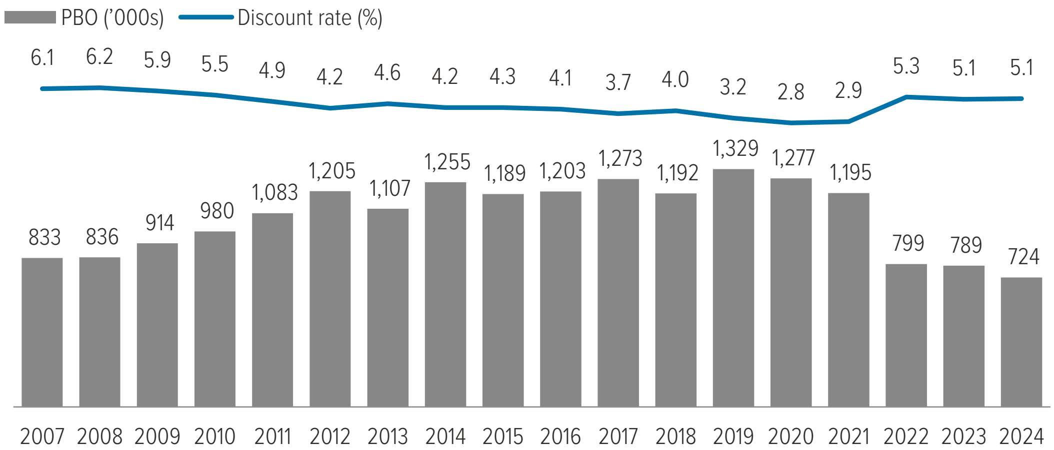
Rising rates don't just help portfolios—they shrink obligations, sometimes significantly. That's why sponsors are striving toward rate agnosticism: a state where rate movements no longer matter.

Achieving rate agnosticism requires sponsors to fully hedge both interest rate and credit spread risk, leveraging tools like investment grade private credit to build resilient.

LDI programs that safeguard funded status against market volatility and turn temporary improvements into lasting plan sustainability.

Exhibit 10: The risk of leaving gains exposed to market volatility (PBO)

Year-on-year shifts in average discount rate and projected benefit obligation



Source: Voya IM, Standard & Poor's, company 10-K filings.

Conclusion

Over nearly two decades, defined benefit pension plans among S&P 500 companies have undergone a strategic transformation—shifting from equity-heavy portfolios to liability-driven frameworks anchored in fixed income. This evolution was shaped by economic shocks and the growing recognition that funded status stability hinges on aligning assets with liabilities. The increase of fixed income allocations and the rise of investment grade private credit as a core component of LDI strategies reflect a maturing investment philosophy.

As DB pension plans continue to mature, the strategic pivot towards liability-driven investing is not merely a trend but a necessary evolution to ensure long-term solvency and stability. Investment grade private credit, in particular, has emerged as a powerful tool for managing credit spread risk while delivering predictable cash flows and duration matching—making it indispensable for sponsors seeking rate agnosticism and long-term solvency.

As sponsors look ahead, the path to pension resilience lies not in chasing returns but in disciplined execution—taking advantage of the full suite of fixed income assets and strategic flexibility to turn temporary gains into lasting financial health.

Voya's pension solutions team would be happy to discuss how liability-driven investing and allocations to private fixed income assets can help sponsors achieve their plan goals.

A note about risk

Examples of LDI (liability-driven investing) performance included in this material are for illustrative purposes only. Liability valuations can increase due to falling interest rates or credit spreads, among other things, as the present value of future obligations increases with falling rates and falling spreads. Liabilities can also increase due to actual demographic experience differing from expected future experience assumed by the plan's actuary. Diversification does not ensure better absolute performance or relative performance versus a pension plan's liabilities. In addition, investing in alternative investment products such as derivatives can increase the risk and volatility in an investment portfolio. Because investing involves risk to principal, positive results and the achievement of an investor's goals are not guaranteed. There are no assurances that any investment strategy will be profitable on an absolute basis or relative to the pension plan's liabilities. Information contained herein should not be construed as comprehensive investment advice. For comprehensive investment advice, please consult a financial professional.

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