March 2022

Corporate pension peer analysis 2022

In brief

- Our proprietary analysis of trends among the 100 largest corporate pensions by assets found that the 2021 headline funded status is finally approaching full funding 13 years after the global financial crisis (GFC), with more than 70% of plans at post-crisis funding highs.
- Sponsors responded to improved funded levels by rotating out of risk assets and into larger fixed income portfolios. However, the shifts were not as big as we might have expected. Against a backdrop of rising interest rates and more lenient funding rules, some sponsors opted to increase allocations to equity diversifiers.
- The passage of the American Rescue Plan Act in March 2021 reduced, deferred or eliminated contribution requirements for many plan sponsors, although some chose to make discretionary cash additions in order to manage Pension Benefit Guaranty Corporation (PBGC) costs.
- The PBGC premiums paid declined for a second consecutive year despite rising premium rates. Although some plans are making discretionary contributions or engaging in pension risk transfer (PRT) to reduce these costs, we find that the phenomenon can be largely explained by sponsor-elected valuation methods.
- PRT buyout activity—on the decline during 2020—rallied in 2021, while lump sum costs remained expensive. Plan sponsors that engaged in risk transfers, especially during the early part of last year, lost out on the opportunity to capture meaningful asset performance in excess of liabilities.

Michael Buchenholz
Head of U.S. Pension Strategy

In 1985, defined benefit (DB) plans still dominated the U.S. pension landscape, corporate raiders stalked companies with overfunded plans—and a blockbuster film, *Back to the Future,* opened, in which a teenager played by Michael J. Fox accidentally time-travels back to 1955 in a DeLorean and must find a way home, armed with knowledge and wisdom of the future but keenly aware of the consequences of his actions.

In many ways, plan sponsors find themselves in circumstances parallel to those of Fox's character, Marty McFly. As we will see in this year's analysis of the 100 largest corporate pension plans, many have returned to a state of full funding and are now operating under minimum contribution rules whose leniency rivals those of the 1980s. However, like McFly, plan sponsors bring with them the advancements of the intervening years: a deep understanding of liability-driven investing (LDI)—including its flaws—and an expanded and more widely accepted asset class toolkit.

J.P.Morgan
ASSET MANAGEMENT

GAAP funding levels for the top 100 corporate pension plans reach post-GFC highs

Exhibit 1A: Annual GAAP-funded status for top 100 plans

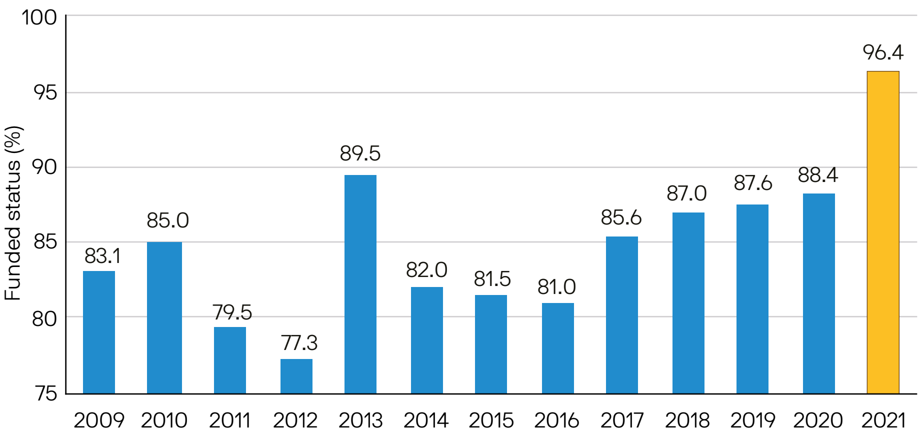
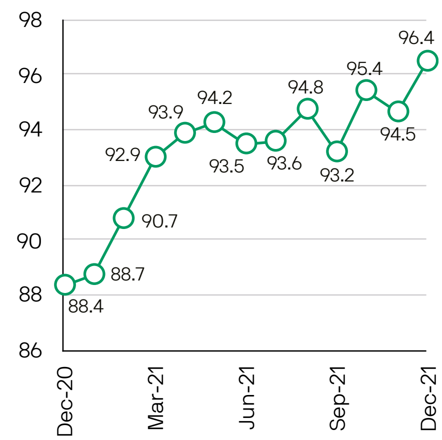


Exhibit 1B: Estimated monthly GAAP-funded status for top 100 plans



Source: Company 10-K filings, J.P. Morgan Asset Management; data as of December 31, 2021.

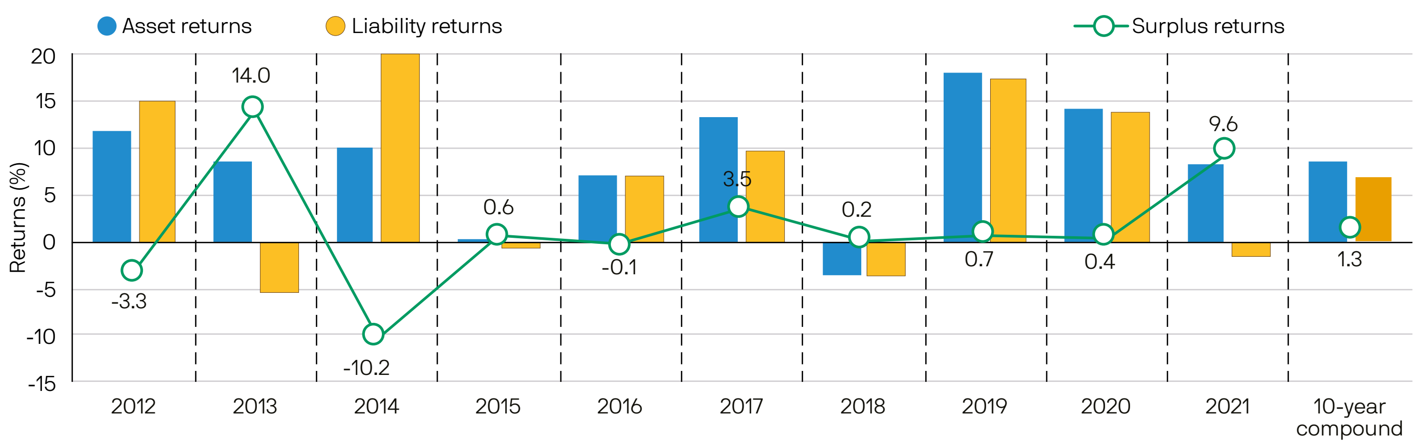
Although defined benefit plan sponsors can't change the past, this time around they can take a more enlightened approach to the future. Our latest annual analysis of the 100 largest corporate pension plans explores the risks and challenges they face.

Funded status: Generating escape velocity

What a difference a year makes. In 2021, the headline funded status for the top 100 corporate plans peer group experienced the biggest annual increase since 2013, rising 8.1% from the prior year to 96.4% (**Exhibits 1A** and **1B**). Lifted by double-digit equity returns, these 100 plans' assets extended their growth streak, reaching an all-time dollar high for this peer group. Liabilities contracted as pension discount rates rose by roughly 35 basis points (bps). The combination led to aggregate surplus returns of 9.6%, bringing the 10-year compound surplus return to 1.3% (**Exhibit 2**). Employer contributions came in at their lowest levels in more than a decade, adding only 1.1% to the funding improvement. As it stands, more than 70% of plan sponsors are now at their highest funded levels since the GFC.

As of 2021, 10-year surplus returns for the largest corporate plans are now in positive territory

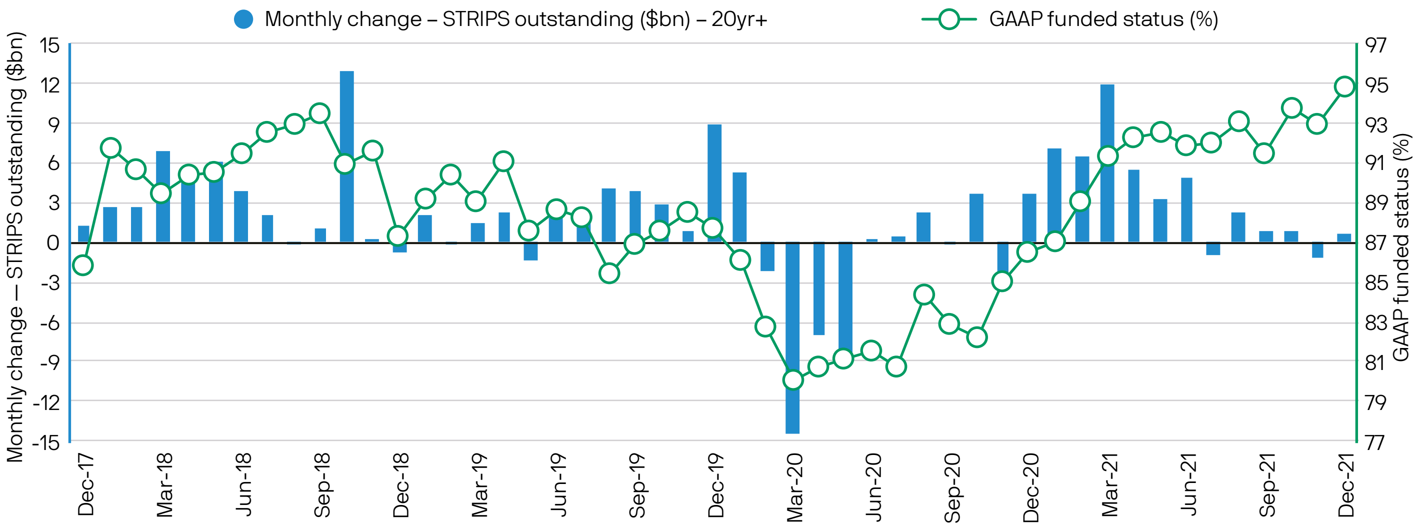
Exhibit 2: Annual surplus returns, top 100 corporate pension plans



Source: Company 10-K filings, J.P. Morgan Asset Management; data as of December 31, 2021.

STRIPS activity indicates that de-risking activity extended through the first two quarters of 2021 as funded status rose

Exhibit 3: Monthly funded status and long STRIPS creation



Source: J.P. Morgan Asset Management, 10-K filings, U.S. Treasury data; data as of December 31, 2021.

Last year, we observed that most plan sponsors had outperformed their expected return assumptions over the previous decade but underperformed their liabilities. As of this year's report, most sponsors are now outperforming both, and by large margins. Suddenly, the "pension business" doesn't seem like such a bad place to be.

Going forward, the challenge for sponsors will be to protect those advances while maintaining sufficient upside to keep pace toward their funding goals. With the adoption of more lenient funding regulations in the U.S., however, plan sponsors now have an opportunity to lock in hard-won gains while continuing to generate liability outperformance by embracing hedge portfolio diversifiers and low risk diversifying alternatives.

Asset allocation: De-risking continues but evolves

Asset allocation for the top 100 plans in aggregate predictably continued to follow a de-risking trend in 2021, but perhaps not to the extent we would have expected, given the 8.1% improvement in funded status. Across the peer group, public equity allocations declined by 3.8 percentage points to 28.5% during the year while fixed income allocations inched up 2.1 percentage points to 50.4%, with the balance going toward alternative assets.[1]

For additional insight, we also track the creation of long-duration U.S. Treasury STRIPS, which serve as a good proxy for traditional pension de-risking (and allow us to conduct higher frequency analysis than simply using annual 10-K data). Based on the STRIPS market (**Exhibit 3**), this current wave of de-risking started in late 2020 and extended through the first two quarters of 2021, coinciding with a long march upward in funded status.

The improvement in 2021—while superficially similar to the boost in plans' funding levels eight years ago—has the potential to persist and grow. In 2013, nearly every plan in the top 100 experienced a meaningful funding improvement, many in excess of 20%, but relatively few used the opportunity to reduce risk. As a consequence, most plans ended up giving back those gains in 2014 as interest rates plummeted by more than 100bps

[1] If plans did not rebalance during the year, the actual flows out of equity would have necessarily been greater, given the outperformance over long-duration bonds. However, we believe that most sponsors rebalance portfolios periodically throughout the year, as well as around the margins, selectively sourcing liquidity for benefit payments.

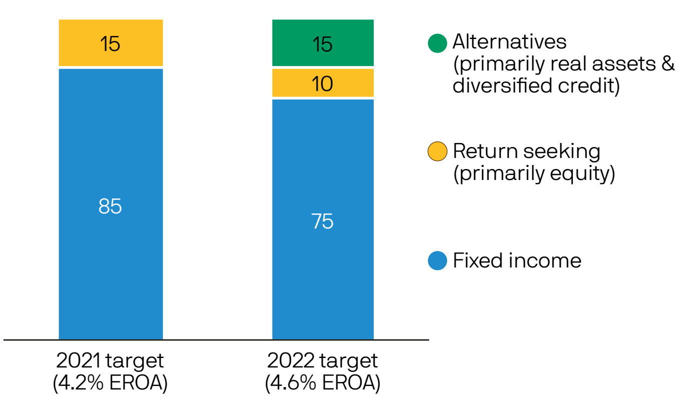
and actuaries adopted longevity improvements that are now, with hindsight, regarded as overly optimistic estimates. In response, industry stalwarts began preaching the importance of glide path development and adherence. Until recently, however, these glide paths left sponsors stranded in a funding desert; if we removed the impact of contributions, the top 100 universe would be below 70% funded and few, if any, triggers would have been hit.

This time around, we think the combination of a long-awaited rising rate environment with the industry's own reexamination of the economic viability of traditional hibernation strategies has resulted in a slightly different brand of de-risking. This evolved approach continues to recognize the importance of interest rate hedging but also the value of equity diversification in a low risk portfolio. The Kraft Heinz Company, for example, whose U.S. plans were 115% funded at the end of 2021, disclosed a change in its target allocation for 2022 that reduced both equities and fixed income in favor of alternatives, primarily real assets and diversified credit (**Exhibit 4**), bumping the plans' expected return assumptions from 4.2% to 4.6% in the process.

Some of this return enhancement could be due to an improved long-term return outlook for fixed income, but we think this type of allocation shift can in practice boost returns and dampen funded status volatility. With

Alternatives can play a powerful role in low risk investment portfolios for pension plans

Exhibit 4: Kraft Heinz's target allocation change



Source: J.P. Morgan Asset Management, Kraft Heinz 2021 10-K; data as of December 25, 2021. EROA: expected return on assets.

markets expecting six rate hikes by the U.S. Federal Reserve in 2022,[2] many plan sponsors are slowing the growth of their hedge portfolios and instead addressing the contribution of equity beta to funded status volatility.

Returns: Projections decline but continue to outpace return needs

Across markets, 2021 was a year of contrasts. U.S. large cap equities returned 28.7% while U.S. long corporate delivered -1.1%. Wide dispersion in asset class performance translated into a wide range of plan returns that varied across investment strategies. Plan sponsors running larger hedge portfolios experienced more restrained increases while, within those hedge portfolios, diversifiers (such as securitized credit) as well as corporate credit outperformed pure rate exposure. In 2021, funding status improvements among the top 100 plans were actually similar to those last seen in 2013, but back then plans were generally less de-risked, leading to a larger overall boost (**Exhibit 5**).

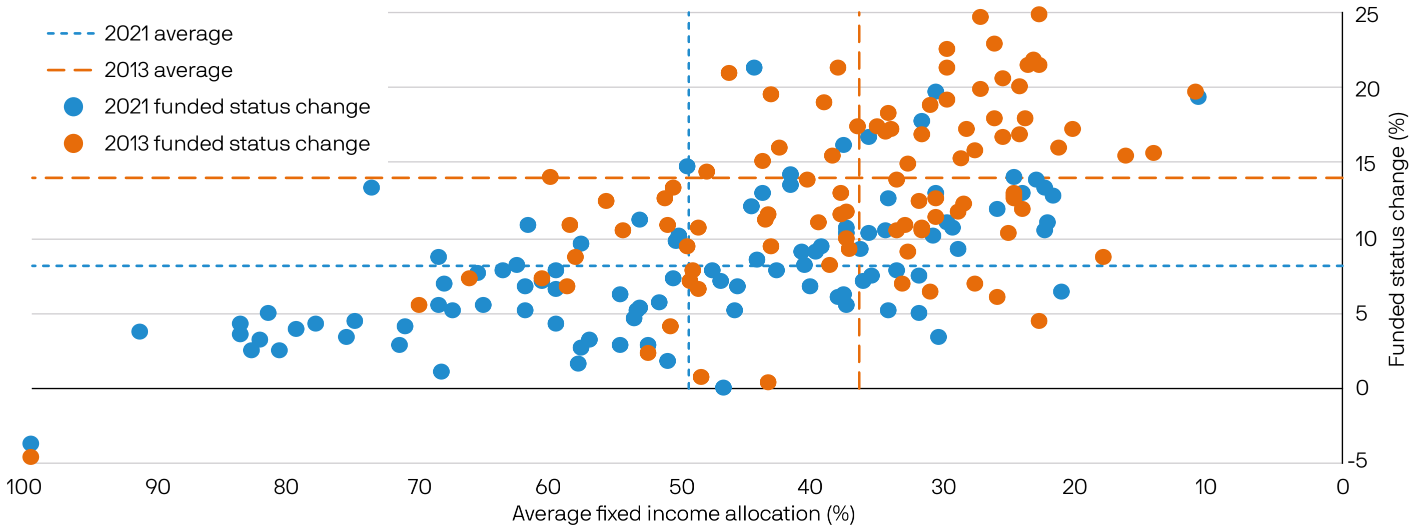
Return expectations for the vast majority of sponsors edged lower year-over-year. The average plan's assumption declined roughly 30bps to 6.20% on an equal-weighted basis and 6.33% on an asset-weighted basis (the premium on the latter owing to a higher prevalence of alternatives in larger plan portfolios). Roughly one-third of the largest plans reduced their estimates by 75bps or more, the most in over a decade. Despite the continued decline, we still find that nearly every plan is using return projections well in excess of those derived from our own Long-Term Capital Market Assumptions. Some of this anticipated outperformance can be chalked up to alpha expectations, but not enough to fully explain the variation.

We also find it useful to compare expected return assumptions with estimates of plan return requirements. What compound return, for example, is needed to achieve 100% GAAP funded status over 10 years—without any contributions—if the service cost continues at its current pace? All but a handful of sponsors have expected returns exceeding these return requirements. For approximately one-third, however, return expectations exceed needs by 250bps

[2] As of March 2, 2022.

Plans' funding improvements in 2021 remained highly dependent on the size of their hedge portfolios

Exhibit 5: Top 100 plans: Funded status improvements relative to fixed income allocations (2013 vs. 2021)



Source: J.P. Morgan Asset Management, 10-K filings; data as of December 31, 2021

or more, which may indicate these sponsors are shouldering excess funded status volatility.

Regulatory round-up: Contribution rules from the past

President Ronald Reagan quoted the film *Back to The Future* in his 1986 State of the Union address, telling the audience, "Where we're going, we don't need roads," but he is also remembered for another pithy—if not entirely original—comment during a 1964 speech, when he said that "a government bureau is the nearest thing to eternal life we'll ever see on this earth."

We have been discussing the implications of the American Rescue Plan Act (ARPA) since it was signed into law on March 11, 2021, but the main theme is important enough to repeat: ARPA essentially transforms minimum funding requirements for corporate pension plans, and it also endows the relief with "eternal life." Several key mechanisms are at work, because the new law:

- **Changes the amortization period:** The legislation allows plan sponsors to move from a seven-year to a 15-year shortfall amortization calculation for contribution requirements and wipes out all future payments related to historical shortfalls.
- **Amends funding discount rate corridors:** The new legislation extends and narrows funding stabilization corridors. Under previous rules, these corridors were set to widen from 90%–110% to 85%–115% in 2021. Instead, the proposals narrow the corridor to 95%–105% in 2021, and widening resumes only in 2026. In fact, the Infrastructure Investment and Jobs Act (IIJA), signed on November 15, 2021, pushed the initial corridor widening out to 2031, effectively extending relief by another five years.
- **Enacts a discount rate floor:** Most important, in our view, is a 5.0% floor on the 25-year rate average (to which the corridors are applied). This means that even when the corridors are at their widest levels—70%–130% in 2036—the lowest possible discount rate for contribution purposes is 350bps.[3]

This last feature gives the legislation a permanence that was missing in previous iterations of pension relief: For at least the next decade, contribution discount rates should be significantly "above market" no matter what happens to rate levels in the near term. What will this mean for plan sponsors in practice?

[3] 5.00% minimum 25-year average * 70% minimum corridor = 3.50% minimum discount rate.

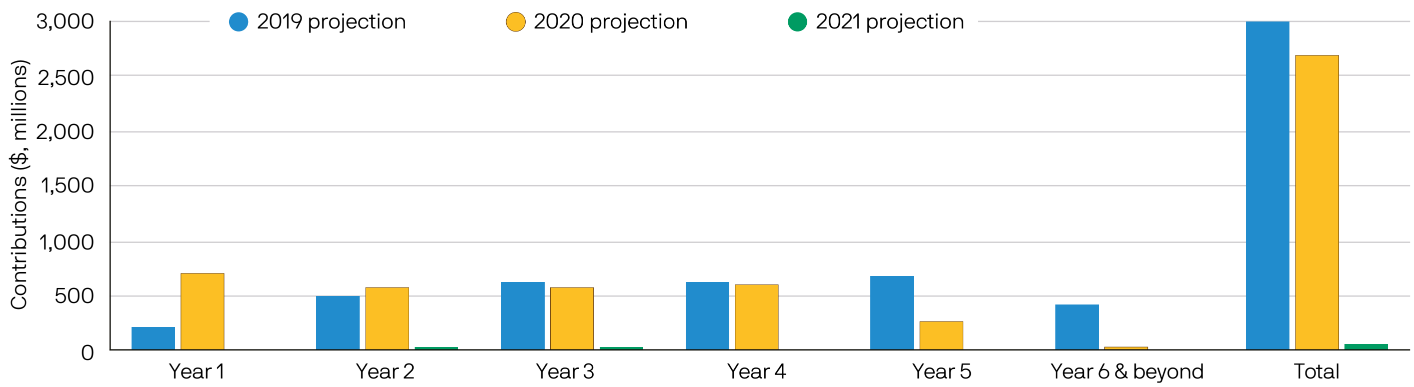
Looking ahead, ARPA legislation significantly alters corporate contribution plans

Exhibit 6A: Large corporate pension plans' reaction to ARPA legislation

FirstEnergy (FE)	FirstEnergy does not currently expect to have a required contribution to the pension plan based on various assumptions including annual expected rate of returns for assets. However, FirstEnergy may elect to contribute to the pension plan voluntarily.
Lockheed Martin (LMT)	With the passage of the American Rescue Plan Act, we are no longer planning to make a $1 billion discretionary pension contribution in 2021.
Raytheon Technologies (RTX)	As a result of these pension funding relief provisions, we do not currently expect cash contributions to be required for our U.S. qualified pension plans in the foreseeable future.
Unisys (UIS)	As a result [of ARPA], the company was not required to make cash contributions in 2021 to its U.S. qualified defined benefit pension plans and did not make the previously contemplated voluntary $200 million contribution to its U.S. pension plans in 2021. Based on year-end 2021 pension data and actuarial assumptions, which are likely to change in the future, the company is not expected to be required to make future cash contributions to its U.S. qualified defined benefit pension plans for at least the next 10 years.
Verizon Communications (VZ)	We expect that there will be no required pension funding through 2031, subject to changes in market conditions.

Source: RTX 2021 10-K; VZ 2021 10-K; LMT 1Q 2021 earnings call (April 20, 2021); FE 2021 10-K; UIS 10-K.

Exhibit 6B: American Airlines (AAL) projected minimum contributions by year



Source: J.P. Morgan Asset Management, American Airlines 2019, 2020 and 2021 10-K.

Most plan sponsors that had projected contribution requirements coming due have seen those either pushed further out and reduced or eliminated entirely (**Exhibit 6A**). For example, American Airlines (AAL), which publishes required contribution projections under its contractual obligations in its annual report, saw its total projected requirement drop from roughly $3 billion to $50 million this year (**Exhibit 6B**). We think this profound change in funding legislation will facilitate a pivot to higher surplus risk portfolios and—all else being equal—drive more muted de-risking, despite the industry's progress in funded status levels.

The impact of ARPA on multiemployer plans

As part of ARPA, the Pension Benefit Guaranty Corporation was empowered to provide special financial assistance to distressed multi-employer plans. The expected funds, totaling nearly $100 billion, are currently constrained to holdings in investment grade public fixed income, leading to speculation that bailout funds would flow into long-duration credit, competing with corporate pension plans and putting downward pressure on long spreads.

Our analysis of the legislation suggests that the funds are expected to run out before the 10-year-plus time horizon of long-duration indices.* As a consequence, short- to intermediate-duration fixed income securities will be a more appropriate solution. At this point, only a handful of multi-employer plans have received their funds, but it remains to be seen if any spillover effects into corporate pension plan strategy will develop.

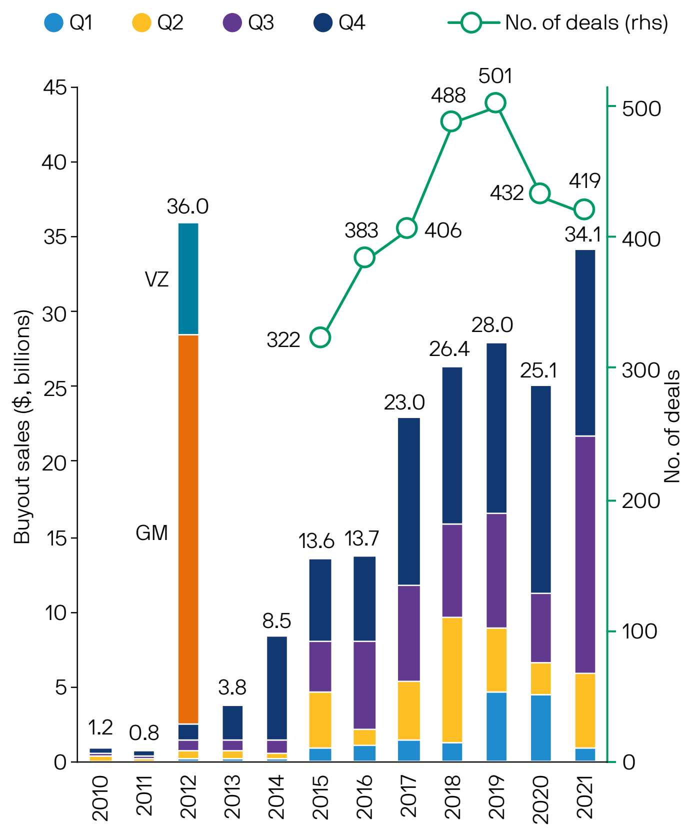
*Michael Buchenholz, Alex Schneider and Thomas Villanova, "Multiemployer Pension Relief: 'Running On Empty,'" J.P. Morgan Asset Management, September 2021.

PRT: Pension risk transfer or pension return transfer?

After a quiet 2020, the annuity buyout market came roaring back in 2021, likely reflecting pent-up demand and the improved funding position of plan sponsors (**Exhibit 7**). In 2021, the third quarter alone saw almost $16 billion of volume,[4] more than half derived from two large retiree annuitizations, by HP and Lockheed Martin. Lump sum costs, measured as the lump sum payment relative to GAAP liability, were elevated throughout the year. At any point during 2021, it would have cost more than 100 cents on the dollar to off-load GAAP pension benefit obligations (PBO) through the lump sum channel (**Exhibit 8**).[5] If discount rates continue to rise during 2022, lump sum offers will become even less economically attractive to sponsors.

After a quiet 2020, buyout sales came roaring back

Exhibit 7: Single-premium pension buyout sales (in $)



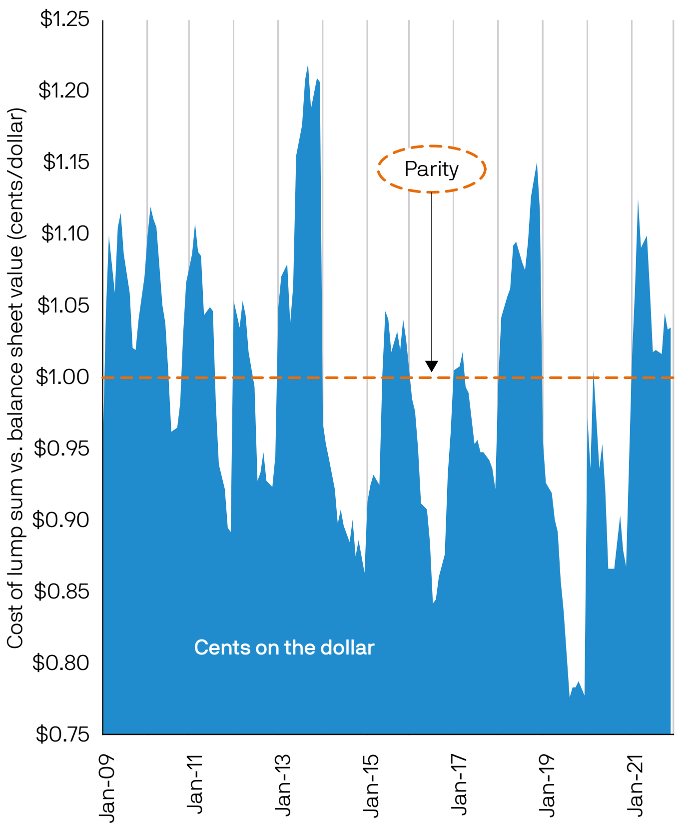
Source: J.P. Morgan Asset Management, LIMRA; data as of March 4, 2022.

Many plan sponsors have undertaken risk transfer transactions to reduce Pension Benefit Guaranty Corporation (PBGC) premiums, and in all likelihood they have already depleted the most efficient savings. In last year's analysis, we discussed the potential opportunity costs of shipping off assets and liabilities. A buyout entered at the beginning of 2021 would have resulted in forgoing, on average, 960bps of asset performance in excess of liabilities. In fact, we noted only two plans in this year's analysis that did not see an improvement in funded status: One invests nearly its entire portfolio in U.S. Treasuries, but the other sponsor engaged in multiple pension risk transfer transactions throughout the year, including an annuity purchase in January 2021.

4. Life Insurance Management Research Association (LIMRA) – Group Annuity Risk Transfer Survey.
5. This statement assumes a November lookback and annual stability period. The lookback and stability period can and do vary by plan.

Lump sum costs remained elevated throughout 2021

Exhibit 8: Lump sum costs (cents per dollar of GAAP liability)



Source: J.P. Morgan Asset Management, Internal Revenue Service; data as of December 31, 2021.

In short, the opportunity cost of such transactions has meaningfully increased. In light of the ARPA funding rule changes, a handful of plan sponsors are now questioning the orthodoxy of traditional glide path de-risking[6] and recognizing the potential value of holding plans on their balance sheets.

On the insurance side of the pension risk transfer equation, regulatory concerns have emerged about variations in methodology among credit rating agencies—concerns that may have spillover effects into PRT pricing. Some life insurers, particularly those active in the PRT market, have pursued investment strategies that differ meaningfully from those of more traditional industry players and involve investing in novel asset classes, such as private asset-backed securities with nontraditional collateral and pools of direct loans, and making use of lesser-known rating agencies. For example, a security not rated by one of the "big three" agencies—Fitch Ratings, Moody's Investors Service or S&P Global—averaged 75bps of excess yield over similarly rated securities of the same asset class (**Exhibit 9**).

Yields on similarly rated life insurer holdings can vary significantly by rating agency

Exhibit 9: Purchase yield over average after controlling NAIC rating (bps)

Rating category	Industry weighted average	Book value ($bn)
Fitch only	7	2
S&P only	-1	26
Moody's only	22	10
2 or more Big 3	-8	335
1 Big 3 and others	12	14
No public rating	44	35
No Big 3	75	11
Book value ($bn)		**433**

Source: J.P. Morgan Asset Management, SNL Financial; data as of December 31, 2021.

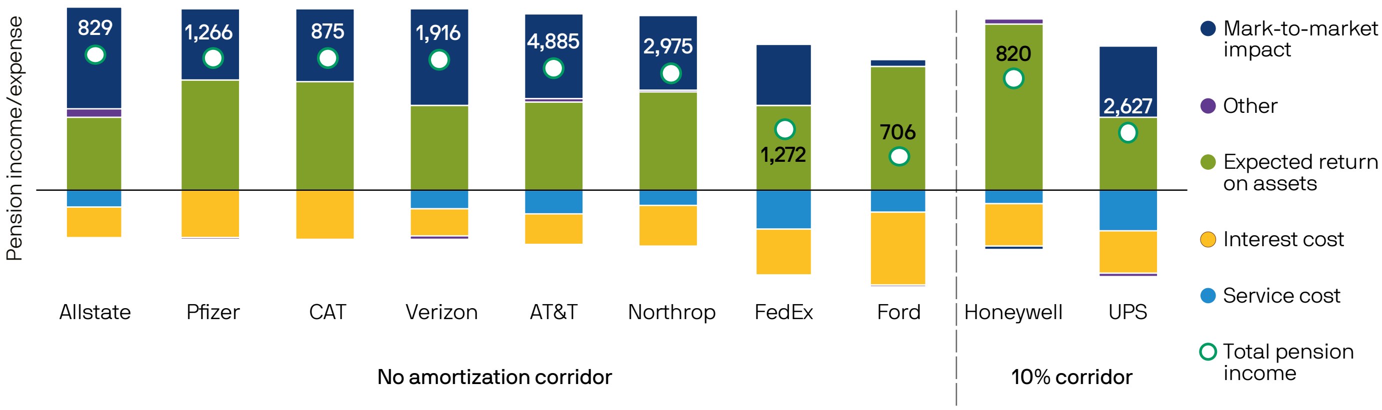
Insurance regulators have taken notice[7] of these systematic rating disparities and may yet decide to take action. All of the solutions proposed by the National Association of Insurance Commissioners' (NAIC's) Investment Analysis Office could make the PRT pricing of insurers that heavily utilize these strategies less competitive and raise the overall industry cost of annuitization relative to PBO.

[6] Jared Gross and Michael Buchenholz, "Rethinking the pension plan endgame: Hibernation, termination or stabilization?" J.P. Morgan Asset Management, October 2021.

[7] The NAIC's Securities Valuation Office published a piece comparing ratings across similarly rated securities: Attachment Eleven, Valuation of Securities (E) Task Force. November 29, 2021.

Plans using a mark-to-market approach experienced windfall pension income

Exhibit 10: 2021 pension expense for select plans using mark-to-market pension accounting (chart is scaled for comparison)



Source: J.P. Morgan Asset Management, 10-K filings; data as of December 31, 2021. Honeywell immediately recognizes gains and losses outside a 10% corridor. This particular accounting method, combined with a lower risk portfolio, led to a net amortization of actuarial losses rather than gains.

Accounting and tax: Taxation without pension representation

In 2021, strong surplus performance led to pension income statement windfalls for many plans using mark-to-market (MTM) pension accounting (**Exhibit 10**). These MTM re-measurements reflected the impact of immediately recognizing differences between expected and realized asset and liability returns instead of smoothing them into earnings slowly over time. Those plans with lower hedge ratios and higher allocations to risk assets reported MTM re-measurements that exceeded their return expectations for the entire year. However, sponsors running low funded status volatility portfolios experienced much smaller asset gains, translating into smaller MTM adjustments and lower pension earnings volatility.

Plans still using traditional pension smoothing saw their unrecognized pension losses—held in an accounting category known as accumulated other comprehensive income (AOCI)—come down by approximately 35%, or $105 billion. This hefty sum, which was slated to slowly work its way through the group's corporate earnings, is now gone without a trace.

In recent legislative developments, the Build Back Better Act, which passed the House of Representatives in November, remains in limbo. If it does become law, the bill would put forward a minimum book tax that has potential implications for pension plan sponsors. Although a detailed tax analysis is beyond the scope of this paper, the basic concept is that companies with pre-tax income greater than $1.0 billion over the previous three years would have to pay a minimum corporate tax rate of 15%. Importantly, the tax would be applied to financial statement, or "book," income, in contrast to taxable income. For plan sponsors with income at or below that threshold, this rule-based shift could entail:

- Paying taxes on noncash pension income, which could adversely affect companies using a mark-to-market framework and those with a large pension relative to the company's operations
- Limiting the tax deductibility of the plan sponsor's pension contributions

Pension industry organizations pushed for—and achieved—a change in the Senate version of the bill[8] that provides an exemption for pension impacts under the minimum tax provision. However, no one can guarantee that this issue won't be back on the table in the future. Using our dataset for the top 100 plans, we estimated how many plan sponsors could be impacted by such a provision: Approximately 25% had an effective tax rate in fiscal year 2021 near or below the 15% threshold, paired with pension "book" income generation (**Exhibit 11**).

Approximately 25% of plan sponsors have an effective tax rate near or below 15% and benefit from pension income

Exhibit 11: Top 100 plan sponsors' potential exposure to 15% minimum book tax

		Pension income statement impact	
		Income	Expense
Effective tax rate	<= 15%	3%	20%
	15%–20%	12%	11%
	>20%	25%	19%

Source: J.P. Morgan Asset Management, 10-K filings; data as of December 31, 2021.

Doing the math on COVID-19 mortality

After two years of tracking daily COVID-19 infection rates, hospitalizations and deaths, the Centers for Disease Control and Prevention recently published updated life expectancy estimates. Merely googling "COVID 2020 life expectancy" results in alarming headlines that estimate the reduction to be as high as three years.[9] A study conducted by Oxford University claims that COVID-19 has reduced life expectancy by the largest amount since World War II. This observation won't, however, necessarily drive a meaningful reduction in pension liabilities.

The actual figure for the total U.S. population was a decrease in life expectancy (at birth) of 1.8 years, declining from 78.8 years in 2019 to 77.0 years in 2020. The quoted figure is what's referred to as period life expectancy, which presumes that the 2020 mortality rates will persist indefinitely. Pension liability valuations, however, are more aligned with the concept of generational life expectancy, which takes into account expected improvements and is only marginally impacted by a significant (but relatively short-term) event such as COVID-19.[10] If we compare period life expectancies to the common cohort expectancies used in pension valuations for a 65-year-old male, we can see that the latter are consistently higher by several years (**Exhibit 12**). Interestingly, the mortality assumptions for 2021 actually increased life expectancy with the release of the industry's latest mortality improvement scale, MP-2021, but this assumption only reflects data through 2019 and does not yet include the impact of the pandemic. Although COVID-19 deaths will work their way into next year's pension assumptions, the impact on liabilities should still be mild.

PBGC premiums: Higher charge rates but lower costs

Nearly every plan in our top 100 group experienced an improvement in funded status during fiscal year 2021, and the PBGC was no different, with the single-employer program collecting $6.4 billion of premiums and reaching a funded status of 126%.[11] According to the PBGC's own projections, its surplus is expected to grow from $15 billion in 2021 to nearly $50 billion by 2030. So why do premium rates continue to march higher, incentivizing sponsors to exit the pension system? We haven't found a good answer, but over the

[8] Title XII - Committee on Finance, Subtitle H—Responsibly Funding Our Priorities, SEC. 56A.

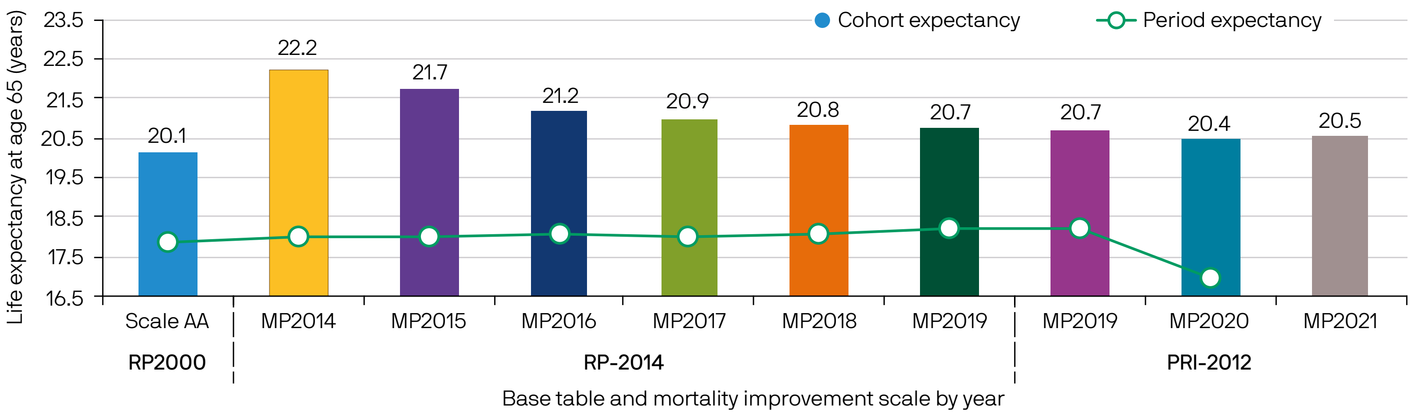
[9] The CDC published provisional life expectancy estimates with data from January through June 2020 in February 2021, then published an update using data from all of 2020 in July 2021.

[10] The American Academy of Actuaries published a great issue brief on interpreting pandemic-related decreases in life expectancy: The Pension Committee.

[11] PBGC fiscal year 2021 annual report.

Assumptions used in pension liability valuations don't reflect the headlines on COVID-19 mortality

Exhibit 12: Life expectancy for a male aged 65: cohort vs. period



Source: Centers for Disease Control and Prevention, Society of Actuaries, J.P. Morgan Asset Management; data as of February 28, 2022.
Expected remaining lifetime for a male aged 65 under each table and corresponding generational mortality improvement scale projected to 2021.

years several bills have sought to address the issue by introducing various provisions, such as:[12]

- De-linking PBGC premium revenue from the federal budget, eliminating what some see as a bureaucratic roadblock to reducing premiums
- Tying premium rates to the funded status of the PBGC single-employer program
- Reducing or eliminating the inflation indexing of premium rates (the inflation indexing of the actual rates is puzzling since—over a long period of time with positive inflation—the variable rate premium would exceed 100% of the unfunded vested benefits)

In the meantime, plan sponsors continue to take steps to reduce these costs. With ARPA funding rules eliminating most, if not all, required contributions, several sponsors decided to make discretionary contributions in 2021 (**Exhibit 13**).

[12] "Single-Employer Pension Plan Premium Reform to Protect Participants, Plans, and the PBGC," The American Benefits Council, August 5, 2021. We think some type of risk-based premium charge related to sponsor health and plan funded status volatility could be an interesting, although admittedly complex, solution.

Sponsors made discretionary contributions to avoid deadweight PBGC costs

Exhibit 13: Large corporate pension plans' PBGC reduction strategies

ConocoPhillips (COP)	We did make a $200 million discretionary pension plan contribution in the second quarter. That reduced our second quarter CFO [cash flow from operations], and the contribution increased the pension plan's funding status above 90% and that eliminated the need to pay the PBGC premium payments.
FedEx (FDX)	During Q2, we also made a $250 million voluntary contribution to our pension plan, which mitigates PBGC fees and further strengthens the funded status of our plan for our employees.
United Airlines Holdings (UAL)	In the third quarter, we made a $375 million voluntary contribution to our pension, which will drive PBGC premium savings and access to returns on the funds added. While we are not required to make any meaningful contribution to our pensions for several years, we view our pension obligations as just another format of debt. This is effectively the most expensive prepayable debt we currently have when we took the opportunity to pay it.

Source: FDX 2Q 2022 earnings call (December 16, 2021); UAL 3Q 2021 earnings call (October 20, 2021); COP 2Q 2021 earnings call (August 3, 2021).

While PBGC premium rates continued to climb in 2021, the actual premiums paid by large plan sponsors declined for the third consecutive year to an average of 13.6bps of assets (**Exhibit 14A**). Despite the best efforts of plan sponsors to off-load small balance participants and avoid variable rate premiums altogether, this cost reduction seems counterintuitive (**Exhibit 14B**). Are plan sponsors really that efficient at optimizing costs, or is something else going on?

A technical but important explanation for this phenomenon exists, but it requires some backstory: When valuing pension liabilities for the purposes of determining PBGC premiums, plan sponsors can choose to apply one of two discount rate options. The "standard method" utilizes spot corporate bond yields averaged over a single month,[13] while the "alternate method" utilizes 24-month averaged bond

[13] Similar to the 417(e) lump sum minimum present value rates.

PBGC premium outlays decline, despite rising plan costs

Exhibit 14A: Top 100 plans' historical PBGC premiums paid

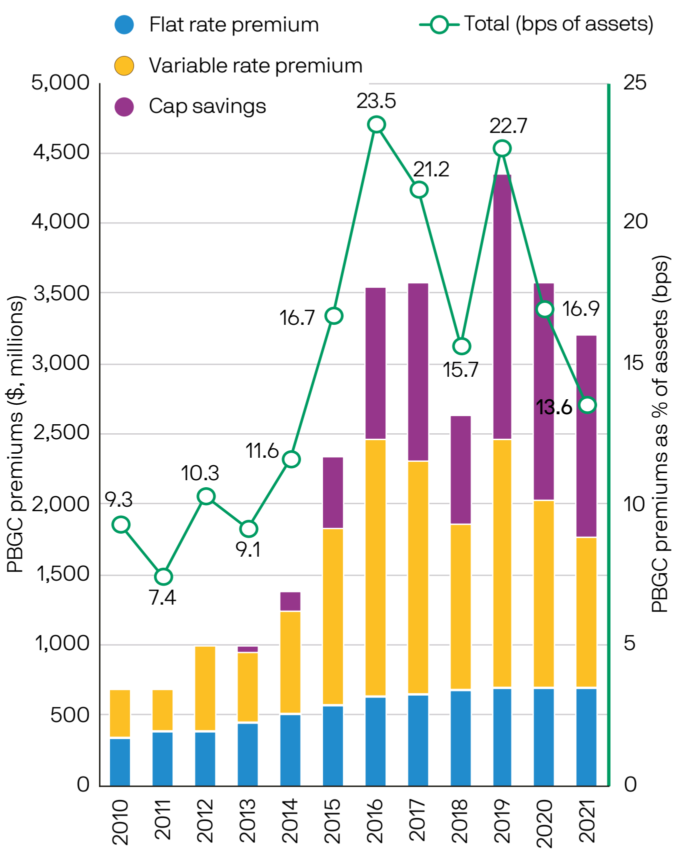


Exhibit 14B: Top 100 plans' historical PBGC premium rates

Plan year	Flat rate premium per participant (FRP)	Variable rate premium: Per $1,000 of unfunded vested benefits (UVB)	Variable rate premium: Per participant cap
1974	$1	n/a	n/a
2012	$35	$9	n/a
2013	$42	$9	n/a
2014	$49	$14	$412
2015	$57	$24	$418
2016	$64	$30	$500
2017	$69	$34	$517
2018	$74	$38	$523
2019	$80	$43	$541
2020	$83	$45	$561
2021	$86	$46	$582
2022	**$88**	**$48**	**$598**

Source: J.P. Morgan Asset Management, LIMRA; data as of March 4, 2022.

yields.[14] During 2019 and 2020, plans exhibited double-digit growth in both assets and liabilities (Exhibit 2). The discount rate smoothing of the alternate method resulted in slower liability growth relative to assets and a significant—albeit temporary—funded status advantage over the standard method, all while more sponsors were making the switch (**Exhibit 15**). As long as rates continue to rise, we expect this cost differential to narrow and eventually reverse.

PBGC cost reductions are currently being driven by discount rate accounting methods

Exhibit 15: Top 100 plans' PBGC method elections, funded status and average cost

	Standard method			Alternate method		
	2019	2020	2021	2019	2020	2021
Plans electing (%)	56	33	30	44	67	70
PBGC funded status (%)	98.3	97.6	99.3	90.9	103.2	107.2
Average cost (bps of assets)	20	19	18	28	16	10

Source: J.P. Morgan Asset Management, PBGC premium data; data as of December 9, 2021.

Another important element to keep in focus is the inflation indexation of PBGC premium rates. This indexation is based on changes in the national average wage index,[15] albeit with a two-year lag. Given some of the recent inflation prints, it is reasonable to assume that maintaining deficits will become increasingly expensive for plan sponsors in the years to come.

Conclusion: Our recommended approaches for 2022

Funded status levels are finally back at pre-GFC levels after a long and difficult journey. Most sponsors have been multi-tasking, trying to manage and eliminate future liabilities while generating sufficient asset returns today, within the confines of their de-risking glide paths.

Given the legislative and market-driven lessons and developments of the past year, we recommend plans consider the following approaches during 2022:

- **Take solace in pension relief.** The passage of ARPA and IIJA has fundamentally altered the risk profile and viability of defined benefit pension plans. Plan sponsors now have the flexibility to tolerate increased levels of volatility and deploy an expanded toolkit of alternative asset classes, enhancing the value proposition of maintaining plans on corporate balance sheets.
- **Rethink the pension plan endgame.** Reaffirm the plan sponsor's endgame in light of a shifting interest rate environment and more forgiving funding regulations. Relatively new asset classes, such as private credit and real assets, can form part of the substrate of a low risk stabilized portfolio.
- **Manage plan costs holistically.** The most cost-efficient way to minimize PBGC premiums can often be to maintain and grow a pension surplus. Some pension risk transfers will continue to offer undeniable economics, but be wary of the opportunity cost of the associated assets forfeited in the process.

In the final scenes of the *Back to the Future* trilogy, the eccentric scientist and time machine inventor Doc Brown proclaims, "Your future is whatever you make it. So make it a good one!" In our view, plan sponsors are well positioned to do just that.

[14] Similar to the Pension Protection Act (PPA) smoothed segment rates, before use of a corridor, for funding valuations.
[15] As defined in Section 409(k)(1) of the Social Security Act.

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