2024 Corporate Pension Funding Study

Zorast Wadia, FSA, CFA, EA, MAAA
Alan H. Perry, FSA, CFA, MAAA

The 2024 edition of the Milliman Corporate Pension Funding Study (PFS) is our 24th annual analysis of the financial disclosures of the 100 U.S. public companies sponsoring the largest defined benefit (DB) pension plans. These 100 companies are ranked highest to lowest by the value of their pension assets as of the end of fiscal year (FY) 2023. These values have been reported to the public, to shareholders, and to the U.S. federal agencies with an interest in such disclosures.

Key results for 2023

- The funded percentage decreased from 99.4% to 98.5%.
- The pension deficit increased from $8.5 billion to $19.9 billion.
- The average return on investments was 7.2%.
- The average discount rate decreased from 5.18% to 5.01%.
- The average expected return on assets assumption increased from 5.8% to 6.4%.

FIGURE 1: HIGHLIGHTS (IN $ BILLIONS)

	FISCAL YEAR ENDING 2022	2023	CHANGE
Funded Percentage	**99.4%**	**98.5%**	**-0.9%**
Market Value of Assets	$1,314.5	$1,320.2	$5.7
Projected Benefit Obligation	$1,323.0	$1,340.1	$17.1
Funded Status	($8.5)	($19.9)	($11.4)
Expected Return	5.8%	6.4%	0.6%
Actual Rate of Return	-18.5%	7.2%	25.7%
Discount Rate	5.18%	5.01%	-0.17%
Net Pension Income/(Cost)	$7.0	($1.7)	($8.7)
Employer Contributions	$19.7	$16.5	($3.2)

Pension funding overview

The funded ratio of the Milliman 100 pension plans decreased slightly during FY2023 to 98.5% from 99.4% at the end of FY2022. The 7.2% investment return was not quite enough to keep up with the growth in liabilities—which was amplified by the 17 basis point decrease in liability discount rates. This resulted in a slight increase to the pension deficit from $8.5 billion to $19.9 billion. This is still much better, however, than in years 2008 to 2020, when the funding deficit ranged from $188 billion to $382 billion. A deficit of $19.9 billion this year put corporate DB plans of the Milliman 100 companies within striking distance of achieving full funding.

FIGURE 2: TOTAL MARKET VALUE OF ASSETS ($ BILLIONS)

To view the Milliman 100 asset values by company, visit **milliman.com/pfs**

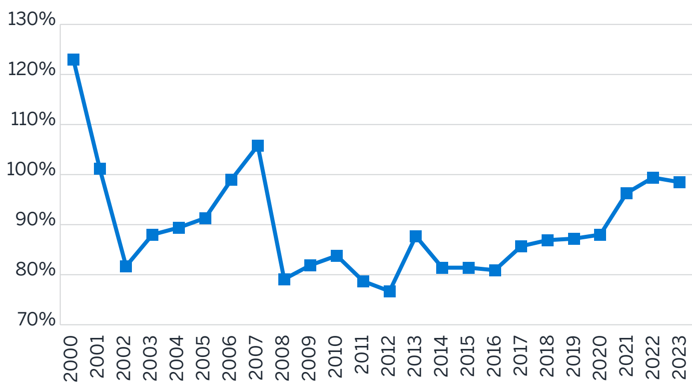
Who are the Milliman 100 companies?

The Milliman 100 companies are the 100 U.S. public companies with the largest DB pension plan assets for which a 2023 annual report was released by March 10, 2024.

The plans in this study represent employers across multiple business sectors, including communications, healthcare, financial services, industrials, energy, technology, utilities, and others. The total value of the pension plan assets of the Milliman 100 companies was $1.32 trillion at the end of FY2023.

Figure 3 shows how the aggregate funded ratio has changed since 2000.

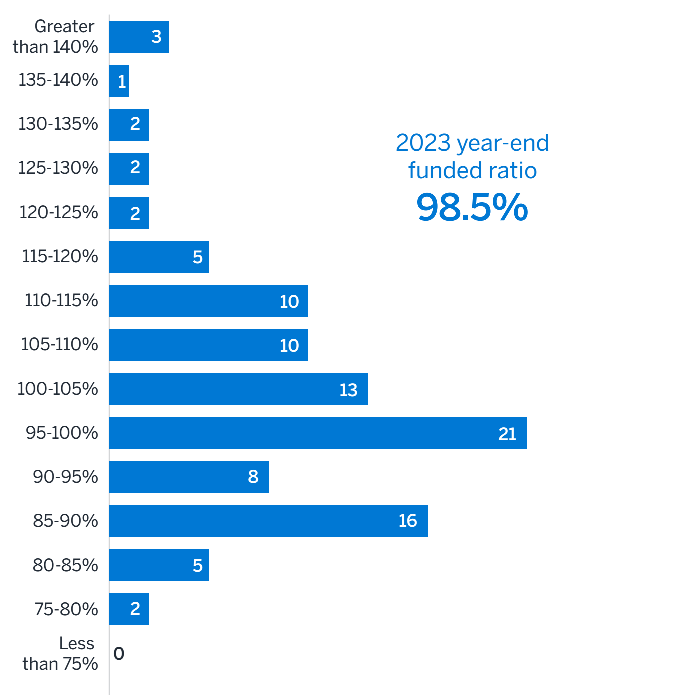
FIGURE 3: FUNDED RATIO, ASSETS/PROJECTED BENEFIT OBLIGATION



The 0.9% decrease in the FY2023 funded ratio broke the streak of improvements seen over the prior six years. Note that there has not been a funding surplus at fiscal year-end since the 105.8% funded ratio in FY2007.

Figure 4 breaks down the 2023 year-end funded ratio for all the plans in the study.

FIGURE 4: DISTRIBUTION BY FUNDED RATIO



In 2023 IBM made big news in the pension world by announcing it was going to cease making employer contributions into its U.S. 401(k) plan and instead reopen its defined benefit pension plan for employees. IBM had a significant pension surplus in its U.S. defined benefit pension plan, and, by making this change, it's now able to access that surplus funding to cover its retirement benefit contributions. We estimate that about 34 companies (in addition to IBM) have frozen U.S. pension plans with excess assets. A desire to tap into the surpluses to see immediate cash savings may drive more companies to shift spending strategies from defined contribution to defined benefit vehicles for their employer-provided retirement benefits. If all of these companies made this switch it could free up a combined $37.7 billion in savings that could go to shareholders or other business initiatives.

COMPARISON TO THE MILLIMAN 100 PENSION FUNDING INDEX

Our Pension Funding Study FY2023 funded ratio of 98.5% was lower than what we projected in the January 2024 edition of the Milliman 100 Pension Funding Index (PFI). The primary reason for the lower actual funded ratio at the end of FY2023 was lower actual investment returns for the Milliman 100 companies than projected.

There are also differences in methodology between the results reported in our annual study versus our projected monthly index; therefore, a match is not expected. The annual PFS funded ratio is aggregating plans with different fiscal year ending dates and different discount rates, whereas the monthly PFI makes normalizing adjustments to approximate the values of all 100 companies as of the same measurement date using the same average discount rate.

RETURN AND LIABILITY EXPECTATIONS

Pension funds in 2023 had investment returns very close to their assumed long-term expected returns. As a percentage of the market value of assets, we estimate the Milliman 100 companies' plans returned 7.2% on average, which was slightly higher than the average long-term assumed rate of return of 6.4%. On a dollar basis, however, the aggregate investment return of $87.8 billion, as reported in the asset reconciliations, came in just under the expected return of $88.0 billion, as reported in the net periodic pension cost. We suspect this discrepancy is due to the asset smoothing that plan sponsors can use when determining the market-related value of assets, which is used in the calculation of the expected return on assets. Given the large asset loss in FY2022, many plans will have market-related values of assets that are notably higher than the market value of assets in FY2023, resulting in higher expected return on assets calculations. So, despite estimated actual rates of return for FY2023 being higher than the assumed rates of return, the plans in aggregate experienced a net $0.2 billion investment loss for FY2023.

Liabilities also came out quite close to expected. Discount rates were relatively stable in FY2023, with the average discount rate for plans in the study only decreasing by 17 basis points from 5.18% to 5.01%. This caused an increase in the projected benefit obligations (PBOs) of the plans and, after accounting for the other typical liability changes (interest cost, service cost, benefit payments, settlements, etc.), the total FY2023 PBO of $1.34 trillion is quite close to the $1.32 trillion at FY2022.

CONTRIBUTIONS, PENSION EXPENSE, AND PRT PROGRAMS

During FY2023, pension settlements or pension risk transfer (PRT) programs continued to be used as financial cost management tools by plan sponsors, although the volume of activity among the Milliman 100 companies was noticeably down. The primary types of PRT used were annuity purchases and lump-sum windows, but these figures may also include other settlements such as ongoing lump-sum payments from plans. Among the Milliman 100 pension plans, settlement payouts totaled an estimated $19.8 billion in FY2023, down from $35.5 billion in FY2022.

Total plan sponsor contributions of $16.5 billion in 2023 were lower than the 2022 contributions of $19.7 billion. These numbers pale in comparison to 2017 and 2018, when plan sponsor contributions hit record highs of $61.1 billion and $57.9 billion, respectively.

Pension expense under Accounting Standards Codification Subtopic 715 reverted in 2023 back to an income statement debit (decrease to company earnings), with a charge of $1.7 billion in FY2023, compared to the pension income of $7.0 billion in FY2022. The pension incomes seen in FY2021 and FY2022 were rare, as the FY2003-FY2020 periods all saw pension expenses.

The average expected investment return assumption increased for FY2023 to 6.4% from 5.8% in FY2022. This is the first time we've seen this assumption increase in this study! Over the past two decades there had been a steady decrease in expected returns as interest rates declined and plans shifted their allocations more heavily to fixed-income investments. After the large investment losses in 2022, however, higher yields on investments allowed most plan sponsors to adjust upward their expected investment return assumption.

OTHER POSTEMPLOYMENT BENEFITS

In addition to DB pension plans, the PFS tracks the actuarial obligations of postretirement healthcare benefits. Accumulated postretirement benefit obligations (APBOs) have been trending downward for the past couple of decades. In FY2023, this trend continued as APBOs decreased to $111.9 billion from their FY2022 level of $115.3 billion.

Detailed comments and illustrations follow in the remainder of the 2024 PFS. Various tables with historical values can be found in the Appendix.

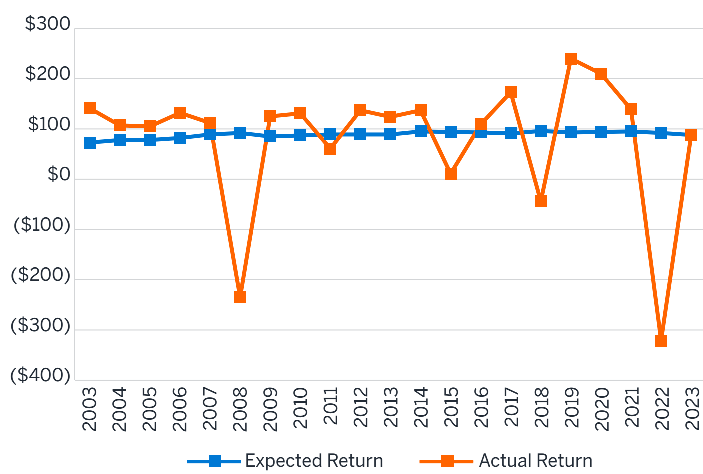
Equities outperformed fixed-income investments and pension liabilities for the fifth year in a row

The weighted average investment return on pension assets for the 2023 fiscal years of the Milliman 100 companies was 7.2%, which was above their average expected rates of return of 6.4%. Sixty-two of the Milliman 100 companies exceeded their expected returns in 2023.

At the end of FY2023, total asset levels were $1.320 trillion. This is $90 billion above the value of $1.230 trillion at the end of FY2007, prior to the collapse of the global financial markets.

Figure 5 shows the investment return on plan assets for the Milliman 100 plans since 2003.

FIGURE 5: INVESTMENT RETURN AMOUNTS ON PLAN ASSETS ($ BILLIONS)



During FY2023, annuity purchases, lump-sum settlements, and regular benefit payments were more than offset by investment returns, contributions, and other adjustments, increasing the market value of assets by $5.7 billion.

The Milliman 100 companies' estimated investment earnings for FY2023 were $87.8 billion, which, in aggregate, were a close match to the expected earnings of $88.0 billion. For the five-year period ending in 2023, investment performance has averaged 5.6% compounded annually (only considering plans with calendar-year fiscal years). There have only been three years of negative investment returns over the past 20 years (2008, 2018, and 2022), contributing to an annualized investment return of 6.4% over that period (again, only considering plans with calendar-year fiscal years).

For calendar-year fiscal year plans, the average discount rate decreased by 28 basis points during 2023. We estimate that their pension liabilities increased approximately 8% on an economic basis (due to the passage of time and changes to discount rates, ignoring benefit payments and accruals). Plans with significant allocations to fixed income as part of a liability-driven investment (LDI) strategy typically have allocations to long-duration high-quality bonds. During 2023 these bonds saw asset returns of about 7%, closely tracking the increase in pension liabilities.

For the 86 companies sponsoring pension plans with calendar-year fiscal years, rates of return in 2023 ranged from 3.2% to 16.6%, with an average of 8.2%. Generally, plans with greater allocations to equities had higher investment returns in 2023. The 12 plans with equity allocations of at least 50% earned an average return of 12.7%, while the 19 plans with equity allocations below 15% earned an average return of 6.0%. Berkshire Hathaway, with a 62% allocation to equities, had the highest investment return of any of the companies in the study at 14.7%.

In prior years, investment allocations made by plan sponsors had showed a trend toward implementing LDI strategies. Generally, this involves shifting more assets into fixed-income securities. This trend appears to have continued in 2023. The fixed-income allocations in the pension portfolios increased slightly to an average of 53.5% at the end of FY2023, up from 51.1% at the end of FY2022. The percentage of pension fund assets allocated to equities, fixed income, and other investments was 23.7%, 53.5%, and 22.8%, respectively, at the end of FY2023, compared with 25.1%, 51.1%, and 23.8%, respectively, at the end of FY2022.

Plans with higher allocations to fixed income generally underperformed the other plans in FY2023 (for the 86 calendar-year plans, those with at least 50% allocated to fixed income earned an average return of 7.6% compared with 8.2% overall).

Over the last five years, the plans with consistently high allocations to fixed income have underperformed the other plans but experienced lower funded ratio volatility. Among the 86 companies in the Milliman PFS with calendar-year fiscal years, 35 pension plans had fixed-income allocations greater than 40.0% at the end of FY2018 and maintained an allocation above 40.0% through FY2023. Over this five-year period, these 35 plans experienced lower funded ratio volatility than the other 51 plans (an average funded ratio volatility of 5.1% versus 7.4% for the other 51 plans) but earned a lower five-year annualized rate of return (an average of 4.0% versus 5.9%). Plans with at least 50% allocation to fixed income have underperformed other plans in each of the last five years.

FIGURE 6: FIXED-INCOME ALLOCATION 50% OR HIGHER (CALENDAR-YEAR FISCAL YEARS ONLY)

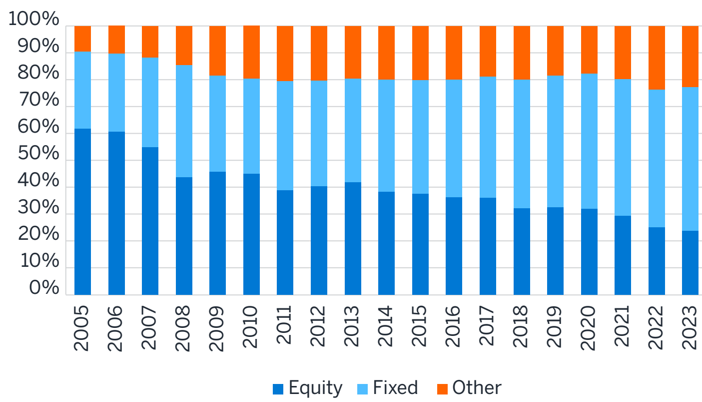
	FIXED INCOME ALLOCATION 50% OR HIGHER		ALL OTHERS	
FISCAL YEAR	NUMBER OF COMPANIES	AVERAGE INVESTMENT RETURN	NUMBER OF COMPANIES	AVERAGE INVESTMENT RETURN
2023	41	7.65%	45	8.99%
2022	37	-20.13%	49	-18.15%
2021	33	4.75%	53	10.50%
2020	29	12.51%	57	14.63%
2019	30	16.60%	56	18.77%

Since 2005, pension plan asset allocations to equities have decreased to about 23.7%, from about 61.8%, while fixed-income allocations have increased to about 53.5% from about 28.6%.

Overall, allocations to equities decreased during FY2023, resulting in an average allocation of 23.7%. None of the Milliman 100 companies had increases to equity allocations of more than 10.0% in FY2023, while three companies decreased their equity allocations by more than 10.0% in FY2023.

Overall allocations to fixed income increased slightly in FY2023, resulting in an average allocation of 53.5%. Two companies had decreases of more than 10.0% to their fixed-income allocations, while seven companies increased their fixed-income allocations by more than 10.0% in FY2023.

FIGURE 7: ASSET ALLOCATION OVER TIME



Other asset classes include real estate, private equity, hedge funds, commodities, and cash equivalents. Specific details on how investments are allocated to the other categories are generally not available in the U.S. Securities and Exchange Commission (SEC) filings of the companies. Overall, allocations to other asset classes decreased in FY2023, resulting in an average allocation of 22.8%. A total of seven companies increased their allocations by 5.0% or more to other asset classes during FY2023, while nine companies decreased their allocations by 5.0% or more.

Decreasing discount rates caused a slight increase in the pension deficit

Discount rates used to measure plan liabilities (specifically the PBO), determined by reference to high-quality corporate bonds, decreased during 2023, thereby increasing liabilities. The average discount rate decreased to 5.01% at the end of FY2023 from 5.18% at the end of FY2022.

This drop in discount rates, along with the annual service and interest costs, were enough to offset the benefit payments to result in the PBO increasing from $1.323 trillion at the end of FY2022 to $1.340 trillion at the end of FY2023. This increase in the PBO was sufficient to offset the increase in assets, so the funded ratio declined slightly from 99.4% to 98.5% in FY2023. Likewise, the funded deficit increased in FY2023 from $8.5 billion to $19.9 billion. The combined effects of changes in assets and liabilities on the funded status are shown in Figure 9.

FIGURE 8: SPONSOR-REPORTED DISCOUNT RATES (2003-2023)

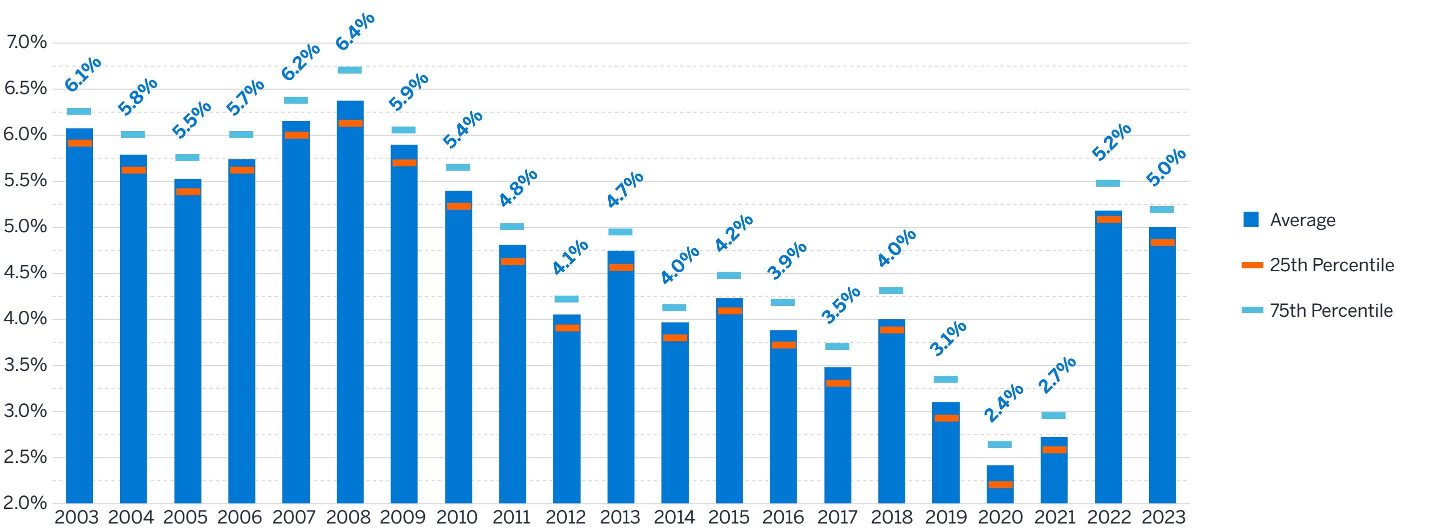
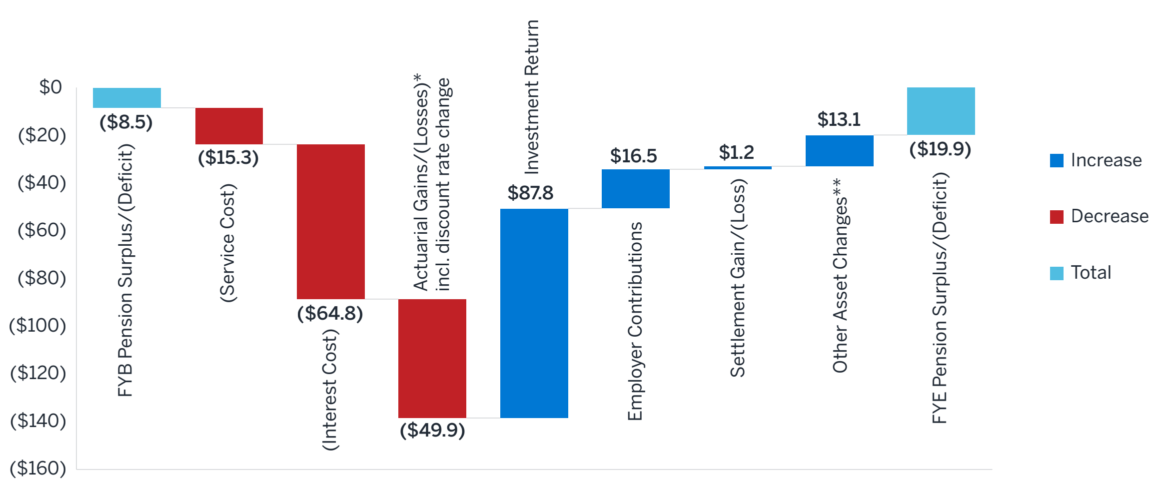


FIGURE 9: REPORTED CHANGE IN PENSION SURPLUS/(DEFICIT) ($ BILLIONS)



* Actuarial gains/(losses) includes assumption changes, updated census data, plan changes, and any other changes in liabilities not captured in the other categories in this figure.

** Other asset changes include changes in exchange rates used to convert the assets of non-U.S. plans from the local currency into U.S. dollars, as well as any other changes in assets not captured in the other categories in this figure.

FIGURE 10: PENSION SURPLUS/(DEFICIT) ($ BILLIONS)

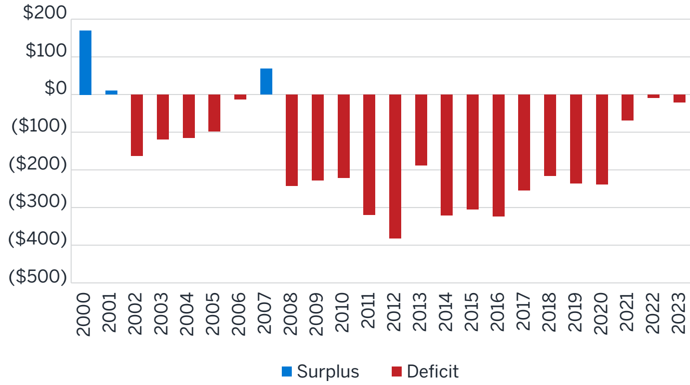


FIGURE 11: PENSION ASSETS AND PBO ($BILLIONS)

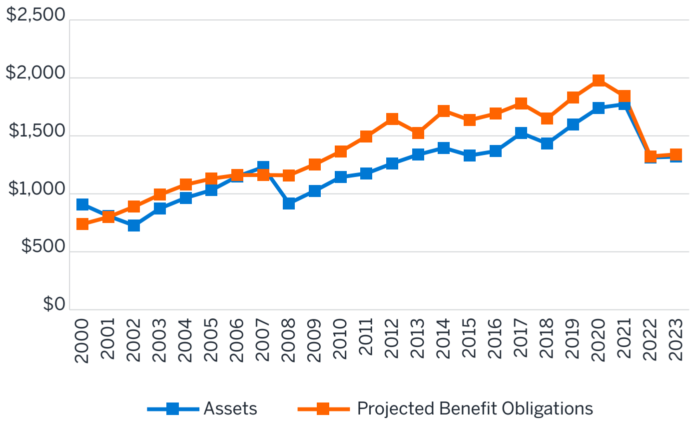


FIGURE 12: UNDERFUNDED PENSION LIABILITY AS A PERCENTAGE OF MARKET CAPITALIZATION, 2011-2023

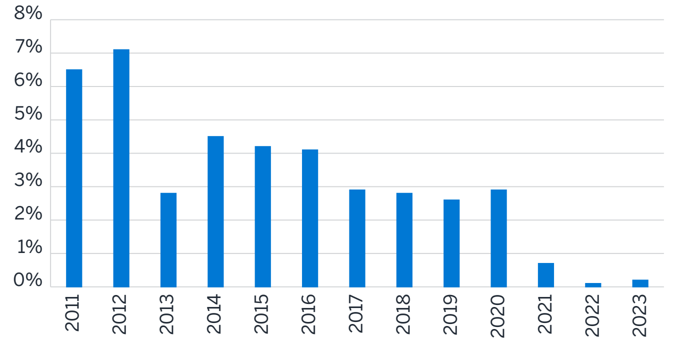
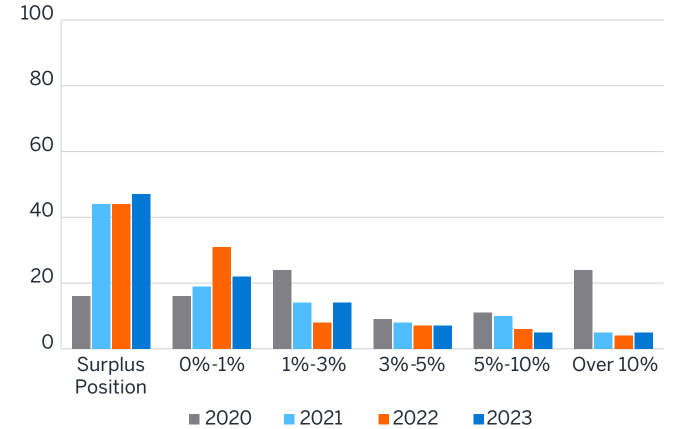


FIGURE 13: COUNT OF COMPANIES WITH UNDERFUNDED PENSION LIABILITY AS A PERCENTAGE OF MARKET CAPITALIZATION, 2020-2023



The total market capitalization for the Milliman 100 companies decreased by 0.1%. The total pension deficit increased from $8.5 billion to $19.9 billion, so the net result was an increase in the unfunded pension liability as a percentage of market capitalization to 0.2% at the end of FY2023 compared with 0.1% at the end of FY2022. Pension deficits represented more than 10.0% of market capitalization for five of the Milliman 100 companies in FY2023 (there were four such companies in FY2022). This is a substantial decrease from 40 in FY2011, the year we started tracking this figure. Similarly, in FY2023, none of the companies' pension deficits exceeded 50.0% of market capitalization, compared to eight in FY2011. Since FY2011, we have had investment returns exceeding expectations in eight out of 12 years, which could have contributed to elevated levels of market capitalization.

Pension risk transfer activities continue

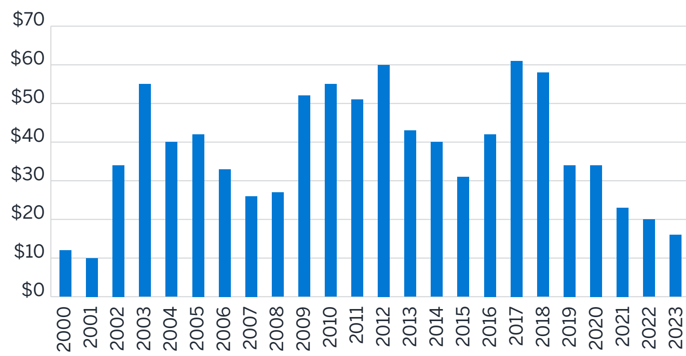
Plan sponsors continued to execute PRT activities in FY2023 as a way of divesting pension obligations from their DB plans and corporate balance sheets, but the volume for the Milliman 100 companies was down relative to FY2022. Large-scale pension buyout programs or lump-sum windows (with at least $1 billion in settled assets) were transacted for four of the Milliman 100 companies as pension assets and liabilities were either transferred to insurance companies or paid out to participants. Note that some companies that were in the Milliman 100 in prior years have fallen out of the top 100 due to settlement activity, and thus are not included in the statistics reported in our study.

The 2023 PRT market decreased when compared with the 2022 market for the Milliman 100 companies. For the 2023 PFS we estimate the dollar volume of PRT activities based on Form 10-K disclosures for the 2023 fiscal year to be $19.8 billion, which primarily consisted of annuity purchases and lump-sum windows. The estimated FY2023 dollar amount represents a decrease of $15.7 billion compared to the FY2022 reported dollar volume of $35.5 billion.

Contribution income at its lowest point since 2001

The aggregate FY2023 cash contributions by plan sponsors of the Milliman 100 companies were $16.5 billion, a decrease of $3.2 billion from the $19.7 billion contributed in FY2022.

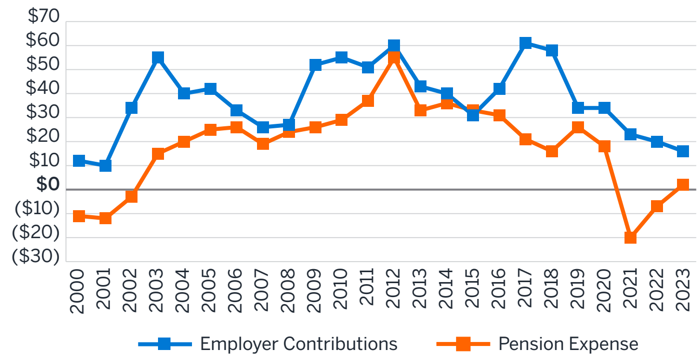
FIGURE 14: EMPLOYER CONTRIBUTIONS BY YEAR ($ BILLIONS)



FY2023 Net Periodic Pension Cost

The FY2023 Net Periodic Pension Cost (aka pension expense) switched back from income to an expense, with total pension expenses of $1.7 billion for FY2023 compared to the $7.0 billion pension income for FY2022. This is well below the $54.5 billion expense peak level in FY2012. Still, 47 companies recorded FY2023 pension income (i.e., a credit to earnings), which could be due to the higher assumed rates of return on assets assumptions used in FY2023 as discussed below.

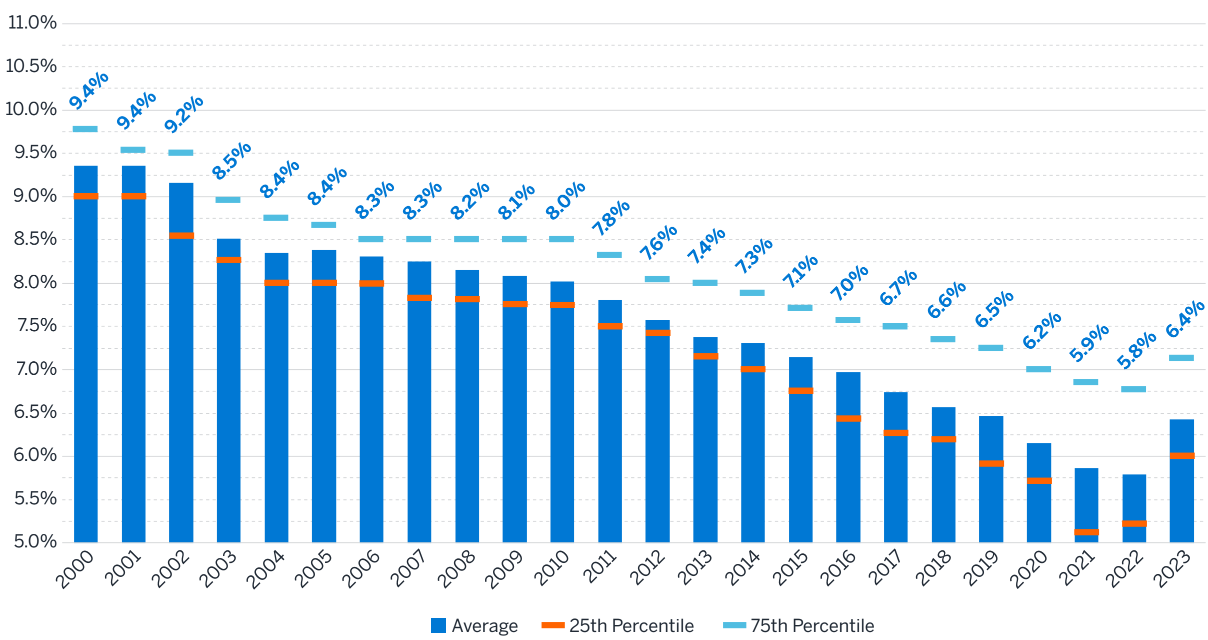
FIGURE 15: PENSION EXPENSE/(INCOME) AND CONTRIBUTIONS ($ BILLIONS)



Expected rates of return

In a first for this study, companies reversed a decades-long trend and raised their expected rate of return on plan assets assumptions to an average of 6.4% for FY2023, as compared with 5.8% for FY2022. This is still well below the average expected rate of return assumption of 9.4% back in FY2000.

FIGURE 16: SPONSOR-REPORTED ASSUMED RATE OF RETURN ON INVESTMENTS (2000-2023)



Rate of return assumption increased in 2023; a first for this study!

Eight of the Milliman 100 companies utilized an expected rate of return for FY2023 of at least 8.0%. This differs drastically from FY2000, in which all but two companies were above 8.0% (the highest was 10.90%).

Pension funding in 2024 and beyond

As of the end of March, equity markets were off to a great start in 2024 with the aggreagate pension funded status entering surplus territory. But with lingering inflation, uncertainty about the Federal Reserve's next steps on interest rates, and the uncertain impacts of international conflicts, the question is whether the funded status gains of the Milliman 100 companies will be short-lived. Our expectations for pension funding for the Milliman 100 companies in the coming year include:

- Plan sponsor contribution levels will be similar to 2023 given the improved funding outlook and possibility to stabilize funded status through enhanced asset and liability management (ALM).
- Pension expense (charge to plan sponsor income statements) is expected to be similar in FY2024 to what was recorded in FY2023, given the relatively small change in discount rates during 2023 and that asset returns were generally close to expectations.
- As the Federal Reserve contemplates interest rate cuts, it is important to not forget about inflation and possible recessionary impacts. The possibility of interest rates starting to decline in the second half of the year could have an impact on funded status and balance sheets by year-end.
- With the positive first-quarter returns seen in 2024 along with discount rate increases, the Milliman 100 companies are likely to be at an overall funding surplus. However, with economic and political uncertainty lingering, funded status oscillation can be expected at points during the year.
- Plan sponsor expected return on assets assumptions for purposes of U.S. GAAP pension expense calculations are likely to remain stable given the relatively large increases seen for 2023—the first time an increase was noted over the last two decades. Capital market assumptions for returns are also down slightly from last year, given the financial market rebound in 2023.
- We are likely to see plan sponsors continue with their investment glide path strategies as they further implement de-risking in 2024. This is especially true if we factor in the possibility of interest rate cuts in the second half of 2024. Interest rate cuts would raise pension liabilities but would also boost bond portfolio valuations, thereby stabilizing funded status for plan sponsors implementing asset-liability matching strategies.
- As funded status improves in 2024, we could see some plan sponsors follow IBM in reopening their frozen defined benefit plans for future benefit accruals. About 34 of the other Milliman 100 companies have surplus funding of their U.S. pension plans this year for a total surplus of $37.7 billion. These companies may stand to achieve balance sheet and cash savings by partially shifting their retirement spending strategies from defined contribution vehicles to those of defined benefits.
- Although pension risk transfer activities were significantly down for the Milliman 100 companies in 2023 relative to 2022, we could see continued interest from plan sponsors in 2024, while interest rates are still at relatively high levels, in making the business decision to exit the defined benefit space. Lump-sum windows, in particular, may be especially impactful for plan sponsors' balance sheets and cash funding sources should interest rates come down later in the year from their present levels.
- The SECURE 2.0 legislation instituted a cap on future mortality improvement rates, which will reduce life expectancies and lower liabilities starting with valuations in 2024.

Appendix

HISTORICAL VALUES (All dollar amounts in millions. Numbers may not add up correctly due to rounding.)

FIGURE 17: FUNDED STATUS

FISCAL YEAR	MARKET VALUE OF PLAN ASSETS	CHANGE FROM PRIOR YEAR	PROJECTED BENEFIT OBLIGATION	CHANGE FROM PRIOR YEAR	FUNDED RATIO	CHANGE FROM PRIOR YEAR	FUNDED STATUS	CHANGE FROM PRIOR YEAR
2023	$1,320,219	$5,760	$1,340,115	$17,140	98.5%	-0.9%	($19,896)	($11,380)
2022	$1,314,459	($458,998)	$1,322,975	($518,872)	99.4%	3.1%	($8,516)	$59,874
2021	$1,773,457	$31,636	$1,841,846	($137,517)	96.3%	8.3%	($68,389)	$169,153
2020	$1,741,821	$146,041	$1,979,364	$148,884	88.0%	0.8%	($237,543)	($2,843)
2019	$1,595,780	$161,518	$1,830,480	$180,319	87.2%	0.3%	($234,700)	($18,800)
2018	$1,434,262	($90,137)	$1,650,161	($128,362)	86.9%	1.2%	($215,899)	$38,224
2017	$1,524,399	$156,844	$1,778,523	$87,559	85.7%	4.8%	($254,123)	$69,285
2016	$1,367,555	$36,636	$1,690,964	$55,230	80.9%	-0.5%	($323,408)	($18,594)
2015	$1,330,919	($65,496)	$1,635,733	($80,313)	81.4%	0.0%	($304,814)	$14,816
2014	$1,396,415	$58,263	$1,716,046	$189,753	81.4%	-6.3%	($319,631)	($131,490)
2013	$1,338,152	$76,615	$1,526,293	($117,693)	87.7%	11.0%	($188,141)	$194,307
2012	$1,261,538	$85,551	$1,643,986	$149,084	76.7%	-2.0%	($382,448)	($63,533)
2011	$1,175,987	$31,949	$1,494,902	$129,949	78.7%	-5.1%	($318,915)	($98,000)
2010	$1,144,038	$117,565	$1,364,953	$110,999	83.8%	1.9%	($220,915)	$6,566
2009	$1,026,472	$108,810	$1,253,954	$94,447	81.9%	2.8%	($227,482)	$14,362
2008	$917,663	($311,984)	$1,159,507	($2,525)	79.1%	-26.7%	($241,844)	($309,459)
2007	$1,229,647	$79,416	$1,162,032	$132	105.8%	6.8%	$67,615	$79,283
2006	$1,150,232	$117,892	$1,161,900	$31,372	99.0%	7.7%	($11,668)	$86,520
2005	$1,032,340	$67,528	$1,130,528	$51,053	91.3%	1.9%	($98,188)	$16,476
2004	$964,811	$90,480	$1,079,475	$86,312	89.4%	1.4%	($114,664)	$4,168
2003	$874,332	$147,331	$993,163	$103,826	88.0%	6.3%	($118,831)	$43,504
2002	$727,001	($81,823)	$889,337	$90,186	81.7%	-19.5%	($162,336)	($172,009)
2001	$808,824	($100,052)	$799,150	$60,450	101.2%	-21.8%	$9,673	($160,502)
2000	$908,876	n/a	$738,700	n/a	123.0%	n/a	$170,176	n/a

FIGURE 18: RETURN ON ASSETS

FISCAL YEAR	EXPECTED RATE OF RETURN	ACTUAL RATE OF RETURN (ESTIMATED)		EXPECTED RETURN (ALL PLANS)	ACTUAL RETURN (ALL PLANS)	DIFFERENCE
		ALL PLANS	CALENDAR FISCAL YEARS			
2023	6.4%	7.2%	8.2%	$87,996	$87,846	$149
2022	5.8%	-18.5%	-19.1%	$92,121	($321,154)	$413,276
2021	5.9%	8.4%	7.9%	$94,975	$139,284	($44,310)
2020	6.2%	13.5%	13.8%	$94,003	$209,996	($115,993)
2019	6.5%	17.3%	17.9%	$92,840	$239,989	($147,149)
2018	6.6%	-2.9%	-3.5%	$96,206	($44,335)	$140,541
2017	6.7%	12.8%	13.0%	$91,220	$173,371	($82,150)
2016	7.0%	8.4%	8.6%	$92,695	$109,476	($16,781)
2015	7.1%	0.8%	0.3%	$94,438	$11,041	$83,397
2014	7.3%	10.6%	10.5%	$95,423	$137,265	($41,841)
2013	7.4%	10.2%	10.1%	$88,957	$123,775	($34,818)
2012	7.6%	11.8%	12.0%	$89,105	$136,603	($47,498)
2011	7.8%	5.6%	5.2%	$89,297	$61,312	$27,985
2010	8.0%	12.9%	12.7%	$86,628	$131,222	($44,594)

HISTORICAL VALUES (All dollar amounts in millions. Numbers may not add up correctly due to rounding.)

FIGURE 18: RETURN ON ASSETS (CONTINUED)

FISCAL YEAR	EXPECTED RATE OF RETURN	ACTUAL RATE OF RETURN (ESTIMATED)		EXPECTED RETURN (ALL PLANS)	ACTUAL RETURN (ALL PLANS)	DIFFERENCE
		ALL PLANS	CALENDAR FISCAL YEARS			
2009	8.1%	14.3%	15.3%	$84,570	$124,670	($40,101)
2008	8.2%	-18.9%	-20.0%	$91,922	($234,663)	$326,586
2007	8.3%	9.9%	9.7%	$88,722	$112,170	($23,448)
2006	8.3%	12.9%	12.9%	$81,698	$132,198	($50,501)
2005	8.4%	11.2%	11.1%	$78,307	$105,041	($26,735)
2004	8.4%	12.4%	12.2%	$77,519	$106,680	($29,161)
2003	8.5%	19.4%	20.0%	$72,883	$140,519	($67,637)
2002	9.2%	-8.6%	-8.6%	n/a	n/a	n/a
2001	9.4%	-6.0%	-6.2%	n/a	n/a	n/a
2000	9.4%	3.9%	3.3%	n/a	n/a	n/a

FIGURE 19: PENSION COST

FISCAL YEAR	PENSION INCOME/(EXPENSE)	CHANGE FROM PRIOR YEAR	EMPLOYER CONTRIBUTION	CHANGE FROM PRIOR YEAR	DISCOUNT RATE
2023	($1,663)	$8,708	$16,473	$3,264	5.01%
2022	$7,045	$12,637	$19,737	$3,663	5.18%
2021	$19,682	($37,339)	$23,400	$10,543	2.73%
2020	($17,657)	$1,565	$33,943	$23,995	2.42%
2019	($26,103)	$5,408	$34,206	$26,911	3.10%
2018	($16,092)	($14,465)	$57,938	($15,722)	4.00%
2017	($20,695)	($12,622)	$61,117	($29,971)	3.48%
2016	($30,557)	($5,099)	$42,216	($1,873)	3.88%
2015	($33,317)	($120)	$31,146	$12,153	4.23%
2014	($35,656)	($18,877)	$40,343	$19,893	3.97%
2013	($33,437)	($3,931)	$43,299	$7,921	4.74%
2012	($54,534)	$25,050	$60,236	($5,489)	4.05%
2011	($37,368)	$10,993	$51,220	$529	4.81%
2010	($29,484)	$5,432	$54,747	($27,517)	5.40%
2009	($26,375)	$6,901	$51,748	($26,123)	5.90%
2008	($24,051)	($1,993)	$27,230	$6,261	6.38%
2007	($19,475)	($5,039)	$25,625	$16,526	6.15%
2006	($26,044)	$6,196	$33,491	$6,931	5.74%
2005	($24,513)	$9,435	$42,151	$12,874	5.52%
2004	($19,848)	$22,446	$40,422	($6,630)	5.79%
2003	($15,079)	$26,901	$55,025	($45,406)	6.08%
2002	$2,599	$8,078	$33,792	($22,019)	n/a
2001	$11,822	($11,822)	$9,619	($9,619)	n/a
2000	$10,677	($10,677)	$11,773	($11,773)	n/a

HISTORICAL VALUES (All dollar amounts in millions. Numbers may not add up correctly due to rounding.)

FIGURE 20: ASSET ALLOCATIONS (BY PERCENTAGE)

FISCAL YEAR	EQUITY ALLOCATION	CHANGE FROM PRIOR YEAR	FIXED INCOME ALLOCATION	CHANGE FROM PRIOR YEAR	OTHER ALLOCATION	CHANGE FROM PRIOR YEAR
2023	23.68%	-5.64%	53.51%	4.72%	22.82%	-4.20%
2022	25.09%	-14.69%	51.09%	0.67%	23.82%	20.09%
2021	29.41%	-8.03%	50.76%	1.13%	19.83%	11.36%
2020	31.98%	-1.67%	50.19%	2.50%	17.81%	-3.80%
2019	32.53%	1.10%	48.96%	2.34%	18.51%	-7.37%
2018	32.17%	-10.59%	47.84%	6.02%	19.98%	5.80%
2017	35.98%	-0.52%	45.13%	3.03%	18.89%	-5.68%
2016	36.17%	-3.50%	43.80%	3.69%	20.03%	-1.22%
2015	37.48%	-2.05%	42.25%	1.41%	20.27%	0.98%
2014	38.26%	-8.60%	41.66%	8.35%	20.08%	1.99%
2013	41.86%	3.90%	38.45%	-2.27%	19.69%	-3.33%
2012	40.29%	3.47%	39.34%	-2.74%	20.36%	-1.18%
2011	38.94%	-13.38%	40.45%	14.10%	20.61%	5.18%
2010	44.95%	-1.58%	35.45%	-0.87%	19.59%	5.57%
2009	45.68%	4.40%	35.77%	-14.30%	18.56%	27.85%
2008	43.75%	-20.35%	41.73%	25.68%	14.52%	22.36%
2007	54.93%	-9.36%	33.21%	13.96%	11.86%	15.66%
2006	60.60%	-1.87%	29.14%	1.74%	10.26%	6.82%
2005	61.76%	n/a	28.64%	n/a	9.60%	n/a

FIGURE 21: PENSION PLAN INFORMATION BY BUSINESS SECTOR

SECTOR	COUNT	COUNT OF CALENDAR FY	MV PLAN ASSETS	PBO	FUNDED RATIO	EMPLOYER CONTRIBUTION	DISC. RATE	EXP. RoR	ACT. RoR	EQUITY ALLOC.	FIXED INCOME ALLOC.	OTHER ALLOC.
Basic Materials	4	4	$39,845	$44,549	89%	$223	5.08%	6.2%	6.75%	19%	46%	35%
Communication Services	4	3	$63,552	$68,262	93%	$325	5.29%	7.4%	6.29%	29%	39%	32%
Consumer Cyclical	5	4	$126,106	$133,877	94%	$1,871	5.14%	5.8%	5.58%	9%	75%	16%
Consumer Defensive	9	6	$71,667	$73,211	98%	$1,042	4.57%	6.1%	4.89%	32%	56%	12%
Energy	4	4	$58,541	$64,380	91%	$1,928	4.88%	5.3%	8.50%	23%	65%	11%
Financial Services	18	18	$181,587	$156,622	116%	$2,444	5.08%	6.2%	9.66%	25%	57%	18%
Healthcare	11	9	$146,434	$144,995	101%	$2,317	4.91%	6.8%	8.26%	36%	41%	22%
Industrials	23	19	$422,880	$444,496	95%	$4,051	5.10%	6.7%	7.27%	22%	50%	28%
Technology	6	3	$86,458	$88,283	98%	$471	4.63%	5.1%	0.90%	12%	68%	20%
Utilities	16	16	$123,150	$121,441	101%	$1,801	5.14%	7.3%	9.43%	31%	45%	24%
Total	**100**	**86**	**$1,320,219**	**$1,340,115**	**99%**	**$16,473**	**5.01%**	**6.4%**	**7.19%**	**23%**	**54%**	**23%**

HISTORICAL VALUES (All dollar amounts in millions. Numbers may not add up correctly due to rounding.)

FIGURE 22: OTHER POST-EMPLOYMENT BENEFITS (OPEB) FUNDED STATUS

FISCAL YEAR	OPEB MV OF ASSETS	CHANGE FROM PRIOR YEAR	OPEB APBO	CHANGE FROM PRIOR YEAR	OPEB FUNDED STATUS	CHANGE FROM PRIOR YEAR	OPEB FUNDED RATIO	CHANGE FROM PRIOR YEAR
2023	$52,093	$1,246	$111,881	($3,372)	($59,787)	$4,618	46.6%	2.5%
2022	$50,847	($14,993)	$115,252	($43,029)	($64,405)	$28,036	44.1%	2.5%
2021	$65,840	$1,638	$158,282	($16,071)	($92,442)	$17,708	41.6%	4.8%
2020	$64,202	$7,072	$174,352	$4,380	($110,150)	$2,691	36.8%	3.2%
2019	$57,130	$3,059	$169,972	$407	($112,841)	$2,653	33.6%	1.7%
2018	$54,071	($6,307)	$169,565	($24,966)	($115,494)	$18,660	31.9%	0.9%
2017	$60,378	$4,895	$194,532	($2,700)	($134,154)	$7,595	31.0%	2.9%
2016	$55,483	($551)	$197,232	($8,756)	($141,749)	$8,205	28.1%	0.9%
2015	$56,034	($4,075)	$205,987	($26,110)	($149,954)	$22,035	27.2%	1.3%
2014	$60,108	($1,399)	$232,097	$15,283	($171,988)	($16,681)	25.9%	-2.5%
2013	$61,507	$4,022	$216,814	($41,616)	($155,307)	$45,638	28.4%	6.2%
2012	$57,485	$4,250	$258,430	$12,982	($200,945)	($8,731)	22.2%	0.5%
2011	$53,235	($3,643)	$245,448	$3,377	($192,213)	($7,020)	21.7%	-1.8%
2010	$56,878	$5,898	$242,071	$9,895	($185,193)	($3,997)	23.5%	1.5%
2009	$50,980	($7,046)	$232,177	($42,961)	($181,196)	$35,915	22.0%	0.9%
2008	$58,026	($29,994)	$275,138	($41,720)	($217,112)	$11,726	21.1%	-6.7%
2007	$88,020	$4,564	$316,858	($10,327)	($228,838)	$14,891	27.8%	2.3%
2006	$83,457	$5,900	$327,185	($17,282)	($243,728)	$23,181	25.5%	3.0%
2005	$77,557	n/a	$344,467	n/a	($266,910)	n/a	22.5%	n/a

About the study

The results of the Milliman 2024 Pension Funding Study (PFS) are based on the pension plan accounting information disclosed in the footnotes to the companies' Form 10-K annual reports for the 2023 fiscal year and for previous fiscal years. These figures represent the GAAP accounting information that public companies are required to report under Financial Accounting Standards Board (FASB) Accounting Standards Codification Subtopics 715-20, 715-30, and 715-60. In addition to providing the financial information on the funded status of their U.S. qualified pension plans, these footnotes may also include figures for the companies' nonqualified and foreign plans, both of which are often unfunded or subject to different funding standards than those for U.S. qualified pension plans. These foreign and nonqualified plans are included in our study, so the information, data, and footnotes do not represent the funded status of only the companies' U.S. qualified pension plans under ERISA.

Fourteen of the companies in the 2024 Milliman Pension Funding Study (PFS) had fiscal years other than the calendar year. The companies included in the study are affected by mergers, acquisitions, and other corporate transactions during FY2023. Figures quoted from 2023 and earlier years reflect the 2024 composition of Milliman 100 companies and may not necessarily match results published in the 2023 or any prior Milliman PFS. Generally, the group of Milliman 100 companies selected remains consistent from year to year. Privately held companies, mutual insurance companies, and U.S. subsidiaries of foreign parents were excluded from the study.

The results of the 2024 study will be used to update the Milliman 100 Pension Funding Index (PFI) as of December 31, 2023, the basis of which will be used for projections in 2024 and beyond. The Milliman 100 PFI is published monthly and reflects the effect of market returns and interest rate changes on pension funded status.

About the authors

Zorast Wadia, FSA, CFA, EA, MAAA, is a principal and consulting actuary in the New York office of Milliman. He has more than 25 years of experience in advising plan sponsors on their retirement programs. Zorast has expertise in the valuation of qualified and nonqualified plans. He also has expertise in the areas of pension plan compliance, design, and risk management.

Alan H. Perry, FSA, CFA, MAAA, is a principal and consulting actuary in the Philadelphia office of Milliman. He has more than 30 years of experience in advising plan sponsors on asset allocation and financial risk management. Alan specializes in the development of investment policies by performing asset-liability studies that focus on asset mix, liability-driven investing, and risk hedging.

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CONTACT

Zorast Wadia
zorast.wadia@milliman.com

Alan H. Perry
alan.perry@milliman.com