

2021 Corporate Pension Funding Study

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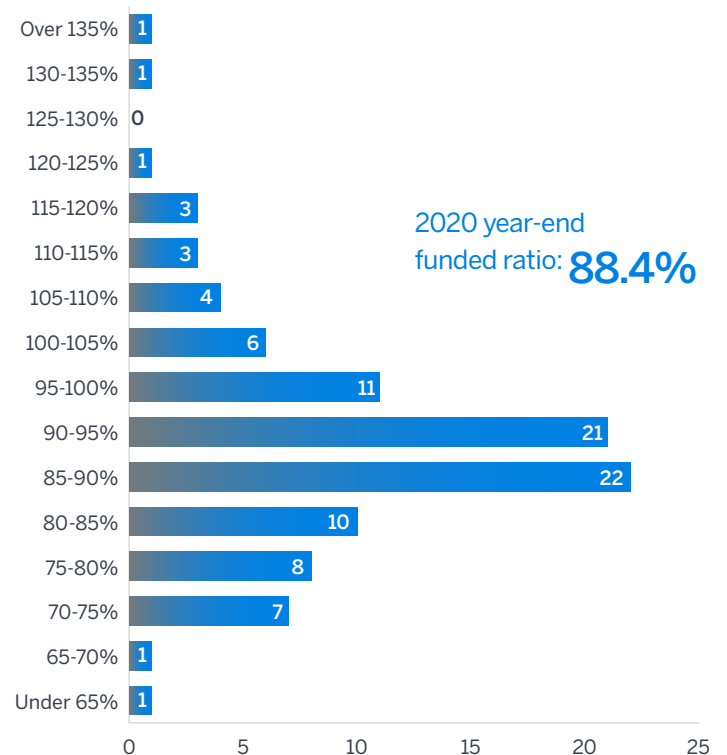
The 2021 edition of the Milliman Corporate Pension Funding Study (PFS) is our 21st annual analysis of the financial disclosures of the 100 U.S. public companies sponsoring the largest defined benefit (DB) pension plans. These 100 companies are ranked highest to lowest by the value of their pension assets that are reported to the public as of the end of fiscal year 2020, to shareholders, and to the U.S. federal agencies that have an interest in such disclosures.

A year prior, in our 2020 PFS, we began this report with, “Looking back to 2019 in April 2020 may seem irrelevant since we are dealing with the global pandemic’s horror and destruction to the health, jobs, businesses and financial assets of everyone.” As we open the 2021 PFS, we are even more aware of the magnitude of the destruction and efforts to overcome the human and financial toll from the pandemic. Recently, Congress passed and President Biden signed the American Rescue Plan Act of 2021 (ARPA-21). In doing so, the single-employer defined benefit plans that comprise our PFS were offered additional contribution relief that had begun with the Coronavirus Aid, Relief, and Economic Security (CARES) Act in March 2020. This relief comes in the form of a reduction in the minimum required contributions by artificially increasing the discount rates for the actuarial calculations and allowing any pension deficit to be amortized over 15 years instead of seven years. It is unknown at this time how many of the Milliman 100 companies will elect to implement some of the early-adoption changes that would reduce their minimum required cash contributions.

Despite a decline of 67 basis points in discount rates, the private single-employer defined benefit plans of the Milliman 100 companies continued to make funded ratio improvements in 2020 due to their greater-than-expected investment gains of 13.4%. The year-end 2020 funded ratio for the Milliman 100 companies settled at 88.4%, a slight improvement from the year-end 2019 funded ratio of 87.5%. This improvement is remarkable given that we estimate the funded ratio had fallen to approximately 81% at the end of July.

Nineteen plans had a funded ratio of at least 100% compared to 14 plans from the 2020 Milliman PFS. However, due to nearly matching growth in both assets (9%) and liabilities (8%), the funding deficit grew by \$919 million, ending the year at \$232 billion.

FIGURE 1: DISTRIBUTION BY FUNDED RATIO



Contributions of \$34.6 billion in 2020 were slightly higher than 2019 contributions of \$33.6 billion. These last two years pale in comparison to 2017 and 2018, when plan sponsor contributions hit record highs of \$61.8 billion and \$59.0 billion, respectively. Ten employers contributed at least \$1 billion in 2020, down from 13 in 2019. The largest contribution in 2020 was by General Electric (\$3.3 billion). In 2019, the highest was United Parcel Service, Inc.’s \$2.1 billion.

Pension funds saw a second consecutive year of better-than-expected investment gains, returning 13.4% in 2020 compared to 17.2% in 2019. The 2020 gains increased plan assets by \$212 billion compared to the expectation that investments would increase by only \$95 billion, based on the companies’ long-term investment return assumptions. The Milliman 100 plans’ assets increased to an all-time high of \$1.77 trillion in 2020 from \$1.62 trillion in 2019. It is worth noting that, over the 12-year period from 2009 to 2020,

there were only three years of adverse investment performance where returns were less than the expected return assumption. In 2011, the average return was slightly less than expected, in 2015, the average return was near zero, and in 2018, the average return was negative.

However, this record asset level was offset by soaring liability values as the average discount rate plummeted 67 basis points in 2020, from 3.08% to 2.41%. In 2019 the average discount rate decreased by a record setting 91 basis points to the lowest levels seen in the study. The additional 67 basis-point drop in 2020 sets a new record low as discount rates fell below 3% for the first time in our study. The pension benefit obligation (PBO) of the Milliman 100 plans increased to a new all-time high of \$2.00 trillion from \$1.86 trillion.

Pension expense (the charge to the income statement under Accounting Standards Codification Subtopic 715) decreased to \$17.7 billion in fiscal year (FY) 2020 from \$26.1 billion in FY2019. After the anomaly in FY2019, this returned to the trend of decreasing expense charges since the all-time high of \$56.3 billion in FY2012.

There was a modest decline in life expectancy assumptions; participants and pensioners will not live as long as previously assumed based on use of the mortality tables published by the Society of Actuaries. The change in life expectancy assumptions generally reduced the actuarial present value of the PBO. It is not common, nor required, that a plan sponsor discuss the changes in PBO due to the change in life expectancy in the Form 10-K. We are aware that some of the Milliman 100 plans experienced a PBO decrease of approximately 1% due to the lower life expectancy assumptions.

During FY2020, pension settlements or pension risk transfer (PRT) programs continued to be employed as financial cost management tools by plan sponsors. Among the Milliman 100 pension plans, settlement payouts totaled an estimated \$15.8 billion in FY2020; up from the \$13.5 billion in FY2019. General Motors had the most settlements in 2020 totaling \$2.6 billion (most of which was a \$1.5 billion annuity purchase for their Canadian plan).

Like the Milliman 100 pension plans, the Pension Benefit Guaranty Corporation (PBGC) reported a large funded status improvement for the corporate pension plans under its custody in the federal fiscal year ending September 30, 2020. The PBGC reported a 112% funded ratio for the plans that terminated (when the sponsoring employer filed for Chapter 11 insolvency) and were sent to the PBGC as the receiving custodian. We note that plans the PBGC expects to terminate are also included. The PBGC funded ratio increased from 107% reported

at September 30, 2019. This change was driven by a large increase in assets caused by premiums collected and higher-than-expected investment gains (which exceeded the increase in liability due to the decline in interest rates). Despite the increases in the PBGC premium rates, the decreases in funding deficits in 2019 (as measured on the PBGC's basis) caused the PBGC's total premium income to decrease by 11% in FY2020 to \$5.7 billion, down from \$6.4 billion in FY2019.

Two companies were eliminated in 2020 from our study due to reductions in the market values of pension plan assets.

- Arconic Inc. split into Howmet Aerospace Inc. and Acronic Corporation, each of which took a portion of the pension assets and liabilities, resulting in neither company making our list this year.
- The asset value of the pension plan(s) of United Airlines Holdings (previously named United Continental Holdings) declined enough to drop below the 100th largest company.

Three companies are new to the 2021 Milliman Pension Funding Study (some of which returned after falling off in prior years): Parker-Hannifin Corporation, Target, and Hartford Financial Services Group, Inc.

Also of note:

- In 2020, Raytheon Company and United Technologies Corporation (UTC) merged to form Raytheon Technologies Corporation. As both companies were on our list in 2019 (Raytheon at rank 20 and UTC at rank 8), this merger pushes Raytheon Technologies up to rank 6 on our list.
- After the end of Harris Corporation's 2019 fiscal year, they merged with L3 Technologies to form L3Harris Technologies. The addition of L3's pension assets pushed L3Harris from rank 90 on our list in 2019 to rank 58 in 2020.
- In 2020, AbbVie Inc. acquired Allergan Plc. The addition of Allergan's pension assets pushed AbbVie Inc. from rank 65 on our list last year to rank 57 this year.
- CenturyLink changed their name to Lumen Technologies.

FIGURE 2: HIGHLIGHTS (IN \$ BILLIONS)

	FISCAL YEAR ENDING 2019	FISCAL YEAR ENDING 2020	CHANGE
Market Value of Assets	\$1,623.9	\$1,765.3	\$141.4
Projected Benefit Obligation	\$1,855.1	\$1,997.4	\$142.3
Funded Status	(\$231.2)	(\$232.2)	(\$0.9)
Funded Percentage	87.5%	88.4%	0.9%
Net Pension Income/(Cost)	(\$26.1)	(\$17.7)	\$8.4
Employer Contributions	\$33.6	\$34.6	\$1.0
Discount Rate	3.08%	2.41%	-0.67%
Actual Rate of Return	17.2%	13.4%	-3.8%

Note: Numbers may not add up due to rounding.

In addition to defined benefit 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 as plan sponsors divest their other postemployment benefits (OPEB) liabilities. In FY2020, this trend was offset by the large decrease in discount rates resulting in APBOs increasing slightly by \$0.6 billion to \$170.5 billion from their FY2019 level of \$169.9 billion.

The investment return on the pension assets was 13.4% when the expectation was a FY2020 investment return of 6.2%. Based on this, we estimate that there was a net investment gain of \$117 billion. This is the second largest gain we've seen in the history of the study (only topped by the FY2019 gain of \$148 billion). Since 2008, pension plan asset allocations to equities decreased to about 31.9%, from about 43.8%, while fixed income allocation has increased to about 50.2% from about 41.8%.

Detailed comments and illustrations follow in the remainder of the 2021 PFS. Various tables with historical values can be found in the Appendix.

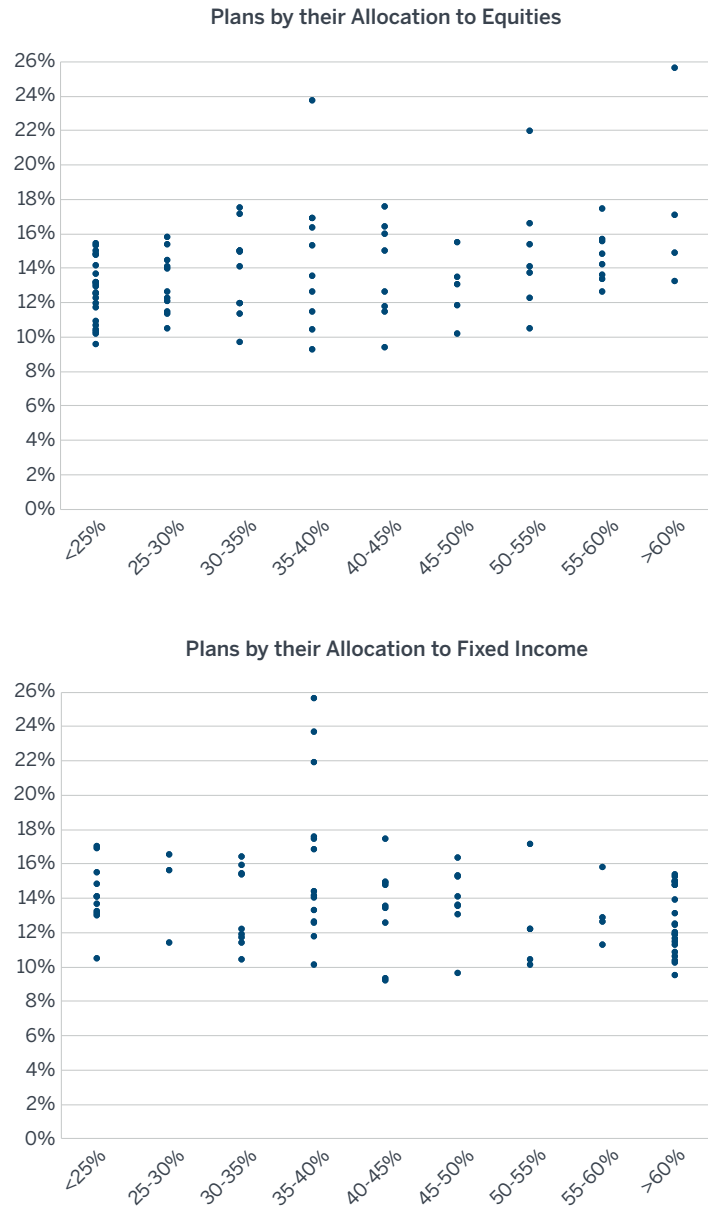
For the second consecutive year, equities flaunt their long duration qualities and keep pace with surging pension liabilities

For calendar fiscal year plans, the average discount rate fell by 70 basis points during 2020. We estimate that their pension liabilities increased approximately 13% 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 2020 these bonds earned returns of 13% or more—closely tracking the increase in pension liabilities. Surprisingly, equities, especially U.S. equities, performed even better and also outperformed pension liabilities. Core fixed income produced strong returns but not enough to keep up with the liabilities of most plans.

Rates of return earned in 2020 for the 85 companies sponsoring pension plans with calendar fiscal years ranged from 9.2% to 25.6%, with an average of 13.8%. Returns mostly fell in the 10.0% to 18.0% range (78 plans), with four plans earning returns below 10.0% and three plans earning returns above 18.0%. Generally, plans with greater allocations to equities earned higher returns. The 19 plans with equity allocations of at least

50% earned an average return of 15.3% while the 22 plans with equity allocations below 25% earned an average return of 12.6%. The rate of return earned by the plan sponsor with the highest allocation to equities (72.6%) was 17.0%, which was better than the return of 12.4% for the plan sponsor with the lowest allocation to equities (4.7%) in 2020.

FIGURE 3: ESTIMATED RATES OF RETURN EARNED IN 2020 (CALENDAR YEAR FISCAL YEARS ONLY)



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 positions. This trend appears to have continued in 2020 as fixed income allocations in the pension portfolios increased slightly to an average of 50.2% during 2020, up from 49.2% at the end of 2019. The percentage of pension fund assets allocated to equities, fixed income, and other investments was 31.9%, 50.2%, and 17.9%, respectively, at the end of FY2020, compared with 32.5%, 49.2%, and 18.3%, respectively, at the end of FY2019.

Much as with FY2019, when plans with high allocations to fixed income (over 50%) slightly underperformed the other plans (17.0% average return compared with 18.9%), in FY2020 the plans with high allocations to fixed income also slightly underperformed the other plans (12.7% compared with 14.4%).

Over the last five years, the plans with consistently high allocations to fixed income have slightly underperformed the other plans while also experiencing lower funded ratio volatility. Among the 85 companies in the Milliman PFS with calendar fiscal years, 26 pension plans had fixed income allocations greater than 40.0% at the end of FY2015 and maintained an allocation of at least 40.0% through FY2020. Over this five-year period, these 26 plans experienced lower funded ratio volatility than the other 59 plans (an average funded ratio volatility of 3.3% versus 4.4% for the other 59 plans) while earning a slightly lower five-year annualized rate of return (an average of 9.3% versus 10.0%). Plans with at least 50% in fixed income have underperformed other plans over three of the last five years.

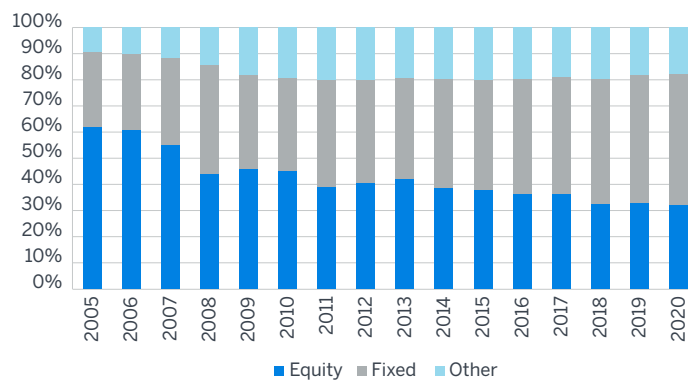
FIGURE 4: FIXED INCOME ALLOCATION 50% OR HIGHER (CALENDAR YEAR FISCAL YEARS ONLY)

FISCAL YEAR	FIXED INCOME ALLOCATION 50% OR HIGHER		ALL OTHERS	
	NUMBER OF COMPANIES	AVERAGE INVESTMENT RETURN	NUMBER OF COMPANIES	AVERAGE INVESTMENT RETURN
2020	31	12.7%	54	14.4%
2019	30	17.0%	55	18.9%
2018	23	-2.7%	62	-4.3%
2017	21	10.8%	64	14.5%
2016	19	9.8%	66	8.3%

Overall, allocations to equities decreased slightly during FY2020, resulting in an average allocation of 31.9%. Only one of the Milliman 100 companies had increases to equity allocations of more than 10.0% in 2020. Two companies decreased their equity allocations by more than 10.0% in 2020, compared with six in 2019, 21 in 2018, one in 2017, and three in 2016.

Overall allocations to fixed income increased in FY2020, resulting in an average allocation of 50.2%. Three companies had decreases of more than 10.0% to their fixed income allocations. Two companies increased their fixed income allocations by more than 10.0% in 2020, compared with nine in 2019, 17 in 2018, three in 2017, and four in 2016.

FIGURE 5: ASSET ALLOCATION OVER TIME



Other asset classes include real estate, private equity, hedge funds, commodities, and cash equivalents. More 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 FY2020, resulting in an average allocation of 17.9%. A total of nine companies increased their allocations by 5.0% or more to other asset classes during 2020 while six companies decreased their allocations by 5.0% or more.

For comparison purposes, we have looked at historical changes since FY2005, the first year when the Milliman 100 companies consistently made allocation information available. The allocation to equities was down from 61.8% and the allocation to fixed income instruments was up from 28.7% at the end of FY2005. The percentage of investments in other asset classes was also up from the 9.5% allocation at the end of FY2005.

PRT activities continue

Plan sponsors continued to execute pension risk transfer (PRT) activities in FY2020 as a way of divesting pension obligations from their defined benefit (DB) plans and corporate balance sheets, with the volume for the Milliman 100 companies up slightly relative to FY2019. Large-scale pension buyout programs or lump sum windows (with at least \$1 billion in settled assets) were transacted for five of the Milliman 100 companies as pension assets and liabilities were either transferred to insurance companies or paid out to participants. General Motors, Hewlett Packard, General Electric, Lockheed Martin Corporation, and Verizon Communications reported

total transactions of \$2.6 billion, \$2.4 billion, \$1.7 billion, \$1.4 billion, and \$1.3 billion, respectively. General Motors is of some interest to those who follow the PRT market as its transaction was on behalf of a defined benefit plan in Canada. There were likely a separate set of Canadian federal tax laws that had to be followed and were quite different from Internal Revenue Service (IRS) regulations.

The 2020 PRT market increased slightly when compared with the 2019 market. For the 2021 PFS we estimate the dollar volume of PRT activities based on Form 10-K disclosures for the 2020 fiscal year to be \$15.8 billion. The estimated FY2020 dollar amount represents an increase of \$2.3 billion compared to the FY2019 reported dollar volume of \$13.5 billion.

PRTs in the form of buyout programs are deemed by plan sponsors to be an effective way to reduce a pension plan’s balance sheet footprint, but generally they have an adverse effect on the plan’s funded status, as assets paid to transfer accrued pension liabilities are higher than the corresponding actuarial liabilities that are extinguished from plans. Much of this incongruity stems from FASB pension plan valuation rules, which differ from an insurance company’s underwriting assessment of the same liabilities.

The Office of PBGC Participant and Plan Sponsor Advocate has stated that the PBGC premiums are a core reason for plan sponsors to divest DB plans. PBGC per-participant flat dollar premiums increased to \$83 in 2020 from \$80 in 2019. The PBGC “variable rate premium” increased to 4.5% of the pension plan’s PBGC-funded status deficit in 2020, from 4.3% of the 2019 deficit. The PBGC’s funded status deficit uses interest rates and mortality assumptions that are different from those used to determine the funded status of the Milliman 100 companies.

Reconciliation with January 2021 Milliman 100 PFI

The FY2020 funded ratio of 88.4% was higher than we reported in the [January 2021 Milliman 100 Pension Funding Index \(PFI\)](#). The January 2021 PFI funded ratio of 88.2%, measured as of December 31, 2020, was based on data collected for the 2020 Milliman PFS. The revised funded ratio of 88.4% from our current study reflects the collection and collation of more recent publicly available information for companies with fiscal years ending in 2020. In addition, the PFS funded ratio is aggregating plans with different fiscal year ending dates and different discount rates, whereas the PFI makes normalizing adjustments to approximate the values of all 100 companies as of the same measurement date using the same average discount rate.

Falling discount rates in FY2020 eroded the funded status, but asset gains in excess of expected dampened the decline

Discount rates used to measure plan obligations, determined by reference to high-quality corporate bonds, decreased during 2020, thereby increasing liabilities. The average discount rate decreased to 2.41% at the end of FY2020 from 3.08% in FY2019. For historical perspective, discount rates have generally declined from the 7.63% reported at the end of FY1999. Over the last decade, discount rate increases have only occurred during three fiscal years (2013, 2015, and 2018).

The increase in the PBO due to the lower discount rates offset the favorable investment returns of 13.4%. The net impact of investment gains, discount rates, contributions, and settlements was relatively little change. The funded ratio improved slightly from 87.5% to 88.4% in FY2020. However, due to the increase of both the assets and liabilities, the funded deficit rose in FY2020 from \$231.2 billion to \$232.2 billion.

FIGURE 6: PENSION SURPLUS/(DEFICIT)

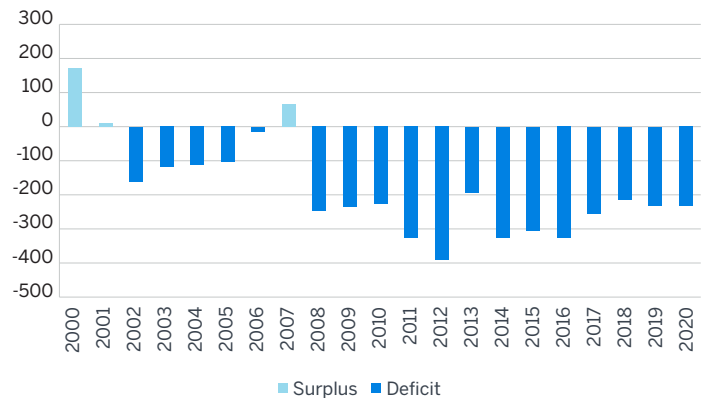
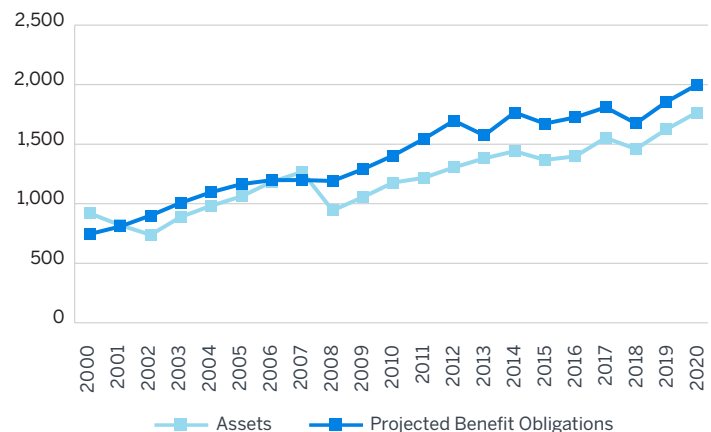


FIGURE 7: PENSION SURPLUS/(DEFICIT): ASSETS AND PBO



The effect of a decrease of 67 basis points in discount rates offset the better-than-expected investment gains during FY2020. Pension obligations rose 7.7% in FY2020, the primary driver of which was the decrease in discount rates. This was slightly dampened by the downward pressure on obligations caused by PRT activity and revisions to the life expectancy assumptions used to measure pension plan obligations. The net result was a liability increase of \$142.3 billion.

The 13.4% investment return (actual weighted average return on assets during FY2020) resulted in an increase of \$141.4 billion in the market value of plan assets after including \$34.6 billion in contributions, approximately \$15.8 billion paid out in annuity purchases or lump sum settlements and \$96 billion in regular benefit payments. The Milliman 100 companies had set their long-term investment gain expectations to be, on average, 6.2% during FY2020, down from the expectation of 6.5% set for FY2019. That was the largest annual drop in return expectations experienced over the last decade.

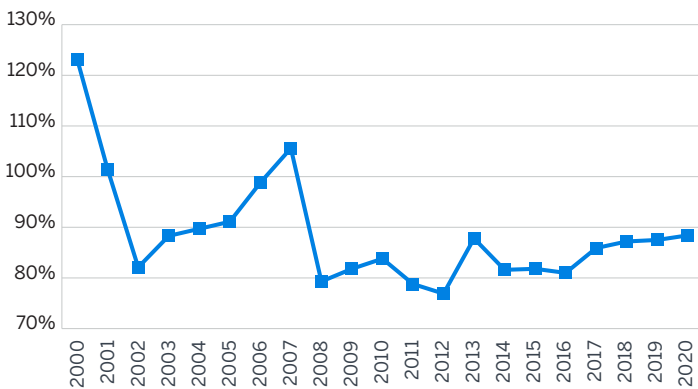
2020 funded ratio increases by 0.9%

The funded ratio of the Milliman 100 pension plans increased during FY2020 to 88.4% from 87.5% at the end of FY2019.

Please note that not all of the 100 companies have a fiscal year 2020 that corresponds to calendar year 2020. In order to recognize that difference, we report a funded ratio of 88.5% for the 85 plans with calendar fiscal years in 2020, up from 87.5% for 2019. Fifteen companies have different fiscal year starting dates. Their funded status at the end of FY2020 is 87.1%. We also don't attempt to predict changes in the companies such as mergers or divestitures (see our list of those changes on page 2) but certainly that influenced the funded status change of this diverse group of private employers.

The aggregate pension deficit decreased by \$1.1 billion during these calendar year companies' 2020 fiscal years to \$209.9 billion, from an aggregate deficit of \$211.0 billion at the end of FY2019. For fiscal year 2020, funded ratios ranged from a low of 64.7% for Proctor & Gamble to a high of 147.3% for NextEra Energy, Inc.

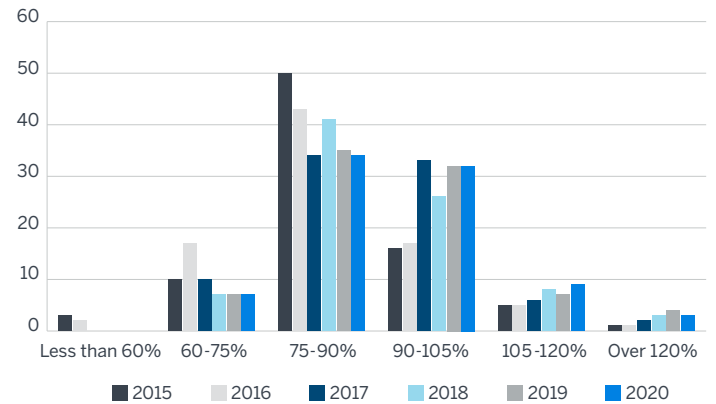
FIGURE 8: FUNDED RATIO, ASSETS/PBO



The 0.9% increase in the FY2020 funded ratio added to the improvement seen over the prior three years. Note that there has not been a funding surplus since the 105.6% funded ratio in FY2007.

Sixteen of the 85 Milliman 100 companies with calendar fiscal years reported surplus funded status at year-end 2020, compared with 13 companies in 2019, 12 in 2018, 13 in 2017, eight in 2016, nine in 2015, eight in 2014, and 18 in 2013. These numbers pale in comparison with the 46 companies with reported surplus funded status at year-end 2007. Fifty-four of the Milliman 100 companies with calendar fiscal years reported an increase in funded ratio for 2020, compared with 52 for 2019.

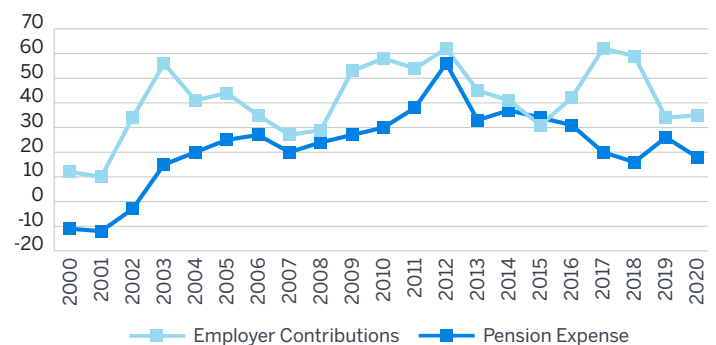
FIGURE 9: DISTRIBUTION BY FUNDED STATUS – 2015-2020 (CALENDAR YEAR FISCAL YEARS ONLY)



FY2020 pension expense decrease

There was a net decrease in FY2020 pension expense: a \$17.7 billion charge to earnings (\$8.5 billion lower than in FY2019). This is well below the \$56.3 billion peak level in FY2012. Forty companies recorded FY2020 pension income (i.e., a credit to earnings). Twenty-seven companies recorded income in FY2019 and 32 companies in FY2018, up from nine in FY2012.

FIGURE 10: PENSION EXPENSE (INCOME) AND CONTRIBUTIONS



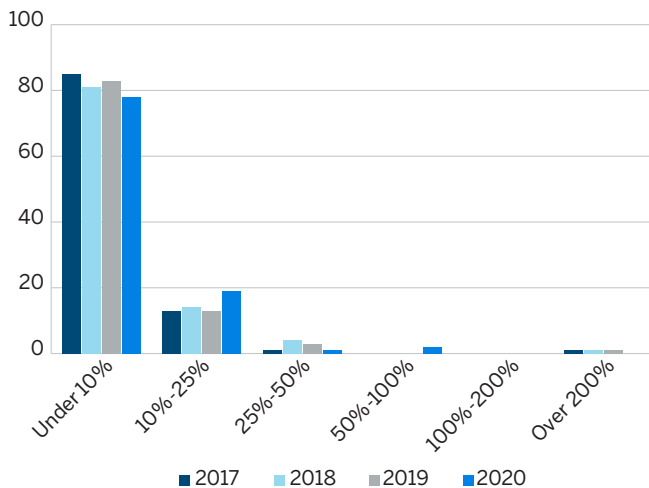
The aggregate 2020 cash contributions of the Milliman 100 companies were \$34.6 billion, an increase of \$1.0 billion from the \$33.6 billion contributed in 2019, \$24.4 billion less than the \$59.0 billion in 2018, and \$27.2 billion less than the 2017 level of \$61.8 billion. Contributions had started to increase in 2016 to \$42.4 billion from the amounts contributed in 2015 and 2014 (\$31.3 billion and \$40.7 billion, respectively).

Pension deficit increases as a percentage of market capitalization

The total market capitalization for the Milliman 100 companies decreased by 8.0%. The total pension deficit increased by 0.4%, so the net result was an increase in the unfunded pension liability as a percentage of market capitalization to 2.9% at the end of FY2020 compared with 2.7% at the end of FY2019 and 2.9% at the end of FY2018. Pension deficits represented more than 10.0% of market capitalization for 22 of the Milliman 100 companies in FY2020, up a bit from 17 of the companies in FY2019. This is, however, a substantial decrease from FY2012, when 41 of the companies had deficits that were more than 10.0% of their market capitalizations.

Since FY2011, we have had investment gains exceeding expectations in seven out of 10 years, which could have contributed to elevated levels of market capitalization. In FY2020, two companies' plan deficits exceeded 50.0% of market capitalization. This is down from nine in FY2011, the year we first started tracking this figure.

FIGURE 11: UNDERFUNDED PENSION LIABILITY AS A PERCENTAGE OF MARKET CAPITALIZATION 2017-2020

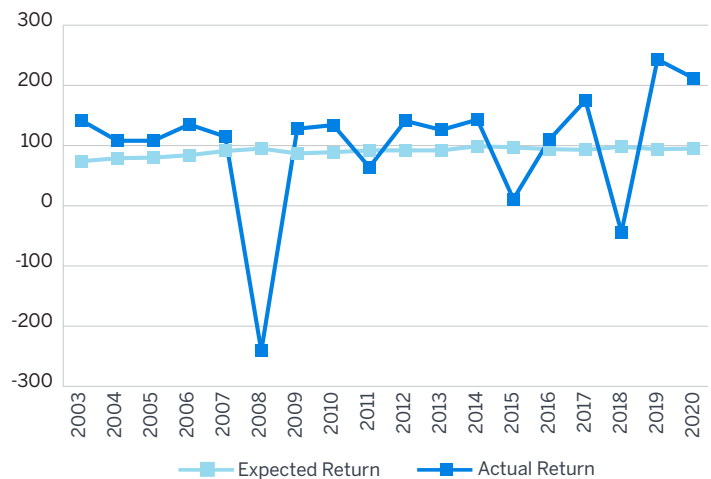


Investment performance above expectations

The weighted average investment return on pension assets for the 2020 fiscal years of the Milliman 100 companies was 13.4%, which was above their average expected rates of return of 6.2%. Ninety-six of the Milliman 100 companies exceeded their expected returns in 2020, compared to 95 in 2019. It is worth noting that over the 12 years since the global financial crisis, only three years resulted in adverse investment performance where returns were below expectations.

At the end of FY2020, total asset levels were \$1.765 trillion. This is \$498 billion above the value of \$1.267 trillion at the end of FY2007, prior to the collapse of the global financial markets.

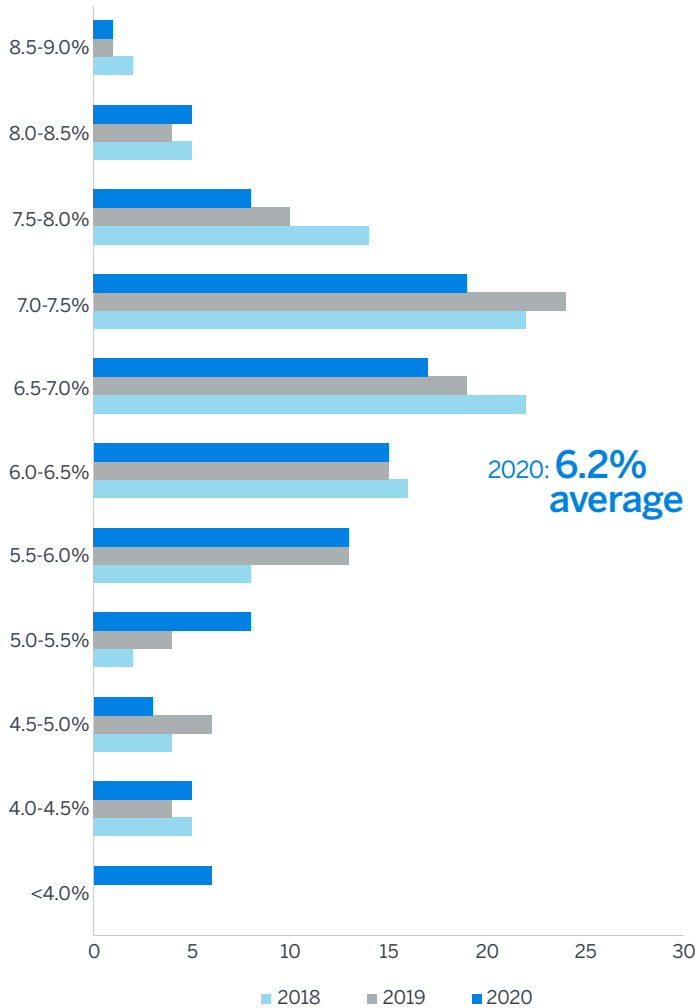
FIGURE 12: INVESTMENT RETURN AMOUNTS IN \$BILLION ON PLAN ASSETS



During FY2020, investment gains and contributions were partially offset by annuity purchases, lump sum settlements, and regular benefit payments, increasing the market value of assets by \$141.4 billion. The Milliman 100 companies' estimated investment return for FY2020 was \$211.6 billion compared with the expected return of \$95.1 billion, a difference of \$116.5 billion. For the five-year period ending in 2020, investment performance has averaged 9.7% compounded annually (only considering plans with calendar fiscal years). There have only been four years of negative investment returns over the past 21 years (2001, 2002, 2008, and 2018), contributing to an annualized investment gain of 6.7% over that period (again, only considering plans with calendar fiscal years).

Expected rates of return

FIGURE 13: SPONSOR-REPORTED ASSUMED RATE OF RETURN ON INVESTMENTS



Companies continued to lower their expected rates of return on plan assets to an average of 6.2% for FY2020, as compared with 6.5% for FY2019, 6.6% for FY2018, 6.8% for FY2017, 7.0% for FY2016, 7.1% for FY2015, 7.3% for FY2014, 7.4% for FY2013, 7.6% for FY2012, 7.8% for FY2011, and 8.0% for FY2010. This represents a significant drop from the average expected rate of return of 9.4% back in FY2000.

Six of the Milliman 100 companies utilized an expected rate of return for FY2020 of at least 8.0% (the highest was 8.97%). This differs drastically from FY2000 in which all but one company was above 8.0% (the highest was 10.90%).

What to expect in 2021 and beyond

Our expectations in the coming year include:

- Reductions in plan sponsor contributions are likely given the funding relief provisions included in the American Rescue Plan Act of 2021 (ARPA-21).
- Increase in federal taxes for corporations may influence DB plan funding strategies more than the flexibility provided in the ARPA-21. Proposals that have been floated are raising the corporate tax rate to 28% from 21%.
- The one-time change in an election to defer cash contributions to a defined benefit pension plan under the CARES Act is unlikely to be repeated in future legislation.
- Regulatory compliance is likely to become additionally burdensome for pension plans and other qualified retirement plans (federal agency audits on “missing participants,” changes in required minimum distributions, potential re-filings of Form 5500s resulting from retroactive applications of ARPA-21, etc.).
- Pension expense for companies with mature plans with primarily inactive liabilities is expected to decrease compared with the FY2020 level. This is due to the investment gains experienced during 2020 as well as the significant drop in discount rates. While the lower discount rates result in higher pension obligations, the net effect will be a lowering of the interest cost components of pension expense.
- On the other hand, for companies that are more interest rate sensitive, and thus have higher durations of liabilities, the gain from the expected return on assets could be offset by the relative increases in the interest cost and loss amortization components of pension expense. These companies could see increases in pension expense in FY2021 relative to FY2020.
- With ARPA-21, we may see more investment de-risking as plan sponsors pursue less risky investment strategies given the longer cost amortization periods allowed.
- Given the passage of ARPA-21 funding relief, the generally low interest rate environment and expected further recovery from the global pandemic, the appetite for further pension risk transfer activities such as lump sum windows and pension buyouts in 2021 seems low or at best uncertain.

Appendix

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

FIGURE 14: 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
2020	\$1,765,292	\$141,427	\$1,997,442	\$142,346	88.4%	0.9%	(\$232,150)	(\$919)
2019	\$1,623,865	\$163,432	\$1,855,096	\$180,362	87.5%	0.3%	(\$231,231)	(\$16,929)
2018	\$1,460,433	(\$92,852)	\$1,674,735	(\$134,041)	87.2%	1.3%	(\$214,302)	\$41,189
2017	\$1,553,285	\$155,183	\$1,808,775	\$83,786	85.9%	4.9%	(\$255,491)	\$71,397
2016	\$1,398,101	\$29,680	\$1,724,989	\$51,707	81.0%	-0.8%	(\$326,888)	(\$22,028)
2015	\$1,368,422	(\$72,906)	\$1,673,282	(\$92,954)	81.8%	0.2%	(\$304,860)	\$20,049
2014	\$1,441,328	\$59,942	\$1,766,236	\$192,325	81.6%	-6.2%	(\$324,909)	(\$132,384)
2013	\$1,381,386	\$76,083	\$1,573,911	(\$122,769)	87.8%	10.9%	(\$192,525)	\$198,852
2012	\$1,305,303	\$88,544	\$1,696,680	\$153,278	76.9%	-1.9%	(\$391,377)	(\$64,735)
2011	\$1,216,760	\$38,782	\$1,543,402	\$138,274	78.8%	-5.0%	(\$326,642)	(\$99,491)
2010	\$1,177,977	\$122,769	\$1,405,128	\$115,404	83.8%	2.0%	(\$227,151)	\$7,365
2009	\$1,055,209	\$111,555	\$1,289,724	\$99,041	81.8%	2.5%	(\$234,516)	\$12,515
2008	\$943,653	(\$322,853)	\$1,190,684	(\$8,476)	79.3%	-26.3%	(\$247,030)	(\$314,377)
2007	\$1,266,506	\$82,209	\$1,199,160	\$1,038	105.6%	6.8%	\$67,347	\$81,171
2006	\$1,184,298	\$122,649	\$1,198,122	\$33,318	98.8%	7.7%	(\$13,824)	\$89,331
2005	\$1,061,649	\$78,435	\$1,164,804	\$68,141	91.1%	1.4%	(\$103,155)	\$10,293
2004	\$983,214	\$93,201	\$1,096,662	\$88,977	89.7%	1.4%	(\$113,448)	\$4,225
2003	\$890,013	\$150,599	\$1,007,686	\$106,944	88.3%	6.2%	(\$117,673)	\$43,655
2002	\$739,414	(\$80,187)	\$900,741	\$92,186	82.1%	-19.3%	(\$161,328)	(\$172,374)
2001	\$819,601	(\$99,058)	\$808,555	\$62,803	101.4%	-21.8%	\$11,046	(\$161,861)
2000	\$918,659	N/A	\$745,752	N/A	123.2%	N/A	\$172,907	N/A

FIGURE 15: RETURN ON ASSETS

FISCAL YEAR	EXPECTED RATE OF RETURN	ACTUAL RATE OF RETURN (ESTIMATED)		EXPECTED RETURN	ACTUAL RETURN (ALL PLANS)	DIFFERENCE
		ALL PLANS	CALENDAR FISCAL YEARS			
2020	6.2%	13.4%	13.8%	\$95,067	\$211,613	(\$116,546)
2019	6.5%	17.2%	17.9%	\$94,148	\$242,609	(\$148,461)
2018	6.6%	-2.8%	-3.5%	\$97,719	(\$43,735)	\$141,454
2017	6.8%	12.7%	12.9%	\$92,898	\$174,964	(\$82,066)
2016	7.0%	8.4%	8.6%	\$94,073	\$110,202	(\$16,129)
2015	7.1%	0.8%	0.3%	\$96,895	\$10,592	\$86,303
2014	7.3%	10.7%	10.6%	\$98,527	\$143,105	(\$44,579)
2013	7.4%	10.1%	10.0%	\$92,009	\$126,207	(\$34,198)
2012	7.6%	11.8%	12.0%	\$92,090	\$140,635	(\$48,545)
2011	7.8%	5.7%	5.4%	\$92,286	\$64,159	\$28,127
2010	8.0%	12.8%	12.7%	\$89,288	\$134,452	(\$45,165)
2009	8.1%	14.2%	15.3%	\$87,030	\$127,565	(\$40,535)
2008	8.2%	-18.9%	-19.9%	\$94,645	(\$240,754)	\$335,399
2007	8.3%	9.9%	9.6%	\$91,406	\$115,011	(\$23,605)
2006	8.3%	12.9%	12.9%	\$84,108	\$135,453	(\$51,345)
2005	8.4%	11.2%	11.1%	\$80,139	\$108,141	(\$28,003)
2004	8.4%	12.3%	12.2%	\$78,922	\$108,498	(\$29,575)
2003	8.5%	19.4%	20.0%	N/A	N/A	N/A
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

HISTORICAL VALUES (All dollar amounts in millions. Numbers may not add up correctly due to rounding.)**FIGURE 16: PENSION COST**

FISCAL YEAR	PENSION INCOME/(COST)	CHANGE FROM PRIOR YEAR	EMPLOYER CONTRIBUTION	CHANGE FROM PRIOR YEAR	DISCOUNT RATE
2020	(\$17,673)	(\$8,462)	\$34,638	(\$1,008)	2.41%
2019	(\$26,135)	\$10,340	\$33,630	\$25,413	3.08%
2018	(\$15,794)	(\$3,865)	\$59,043	\$2,777	3.99%
2017	(\$19,659)	(\$14,452)	\$61,820	(\$30,523)	3.48%
2016	(\$31,062)	(\$5,949)	\$42,374	(\$1,634)	3.84%
2015	(\$34,112)	\$975	\$31,297	\$13,473	4.24%
2014	(\$37,012)	\$3,875	\$40,739	\$4,030	3.97%
2013	(\$33,136)	(\$23,123)	\$44,770	\$17,092	4.75%
2012	(\$56,259)	\$17,947	\$61,862	(\$8,096)	4.07%
2011	(\$38,313)	\$8,090	\$53,766	\$3,934	4.84%
2010	(\$30,223)	\$3,482	\$57,700	(\$4,969)	5.43%
2009	(\$26,741)	\$2,361	\$52,731	(\$24,207)	5.93%
2008	(\$24,380)	\$4,557	\$28,524	(\$1,971)	6.43%
2007	(\$19,823)	(\$6,800)	\$26,553	\$8,403	6.17%
2006	(\$26,623)	\$1,779	\$34,956	\$9,177	5.76%
2005	(\$24,844)	\$5,071	\$44,133	(\$2,897)	5.51%
2004	(\$19,772)	\$5,078	\$41,236	\$14,806	5.80%
2003	(\$14,694)	\$17,857	\$56,042	(\$21,636)	N/A
2002	\$3,163	\$9,182	\$34,407	(\$24,478)	N/A
2001	\$12,345	(\$1,382)	\$9,929	\$1,750	N/A
2000	\$10,963	N/A	\$11,679	N/A	N/A

FIGURE 17: ASSET ALLOCATIONS (BY PERCENTAGE)

FISCAL YEAR	EQUITY ALLOCATION	CHANGE FROM PRIOR YEAR	FIXED ALLOCATION	CHANGE FROM PRIOR YEAR	OTHER ALLOCATION	CHANGE FROM PRIOR YEAR
2020	31.89%	-1.99%	50.24%	2.10%	17.87%	-2.12%
2019	32.54%	1.04%	49.20%	2.48%	18.26%	-7.71%
2018	32.20%	-10.88%	48.01%	6.49%	19.78%	5.34%
2017	36.13%	-0.37%	45.09%	2.65%	18.78%	-5.20%
2016	36.27%	-3.45%	43.92%	3.60%	19.81%	-1.16%
2015	37.56%	-2.02%	42.40%	1.28%	20.04%	1.20%
2014	38.34%	-8.53%	41.86%	8.06%	19.81%	2.35%
2013	41.91%	3.90%	38.74%	-2.24%	19.35%	-3.42%
2012	40.34%	3.63%	39.62%	-2.77%	20.04%	-1.40%
2011	38.93%	-13.49%	40.75%	14.19%	20.32%	5.13%
2010	45.00%	-1.51%	35.69%	-0.75%	19.33%	5.29%
2009	45.68%	4.25%	35.96%	-13.89%	18.36%	27.28%
2008	43.82%	-20.27%	41.76%	25.48%	14.42%	22.59%
2007	54.96%	-9.38%	33.28%	14.05%	11.77%	15.63%
2006	60.65%	-1.82%	29.18%	1.64%	10.18%	6.84%
2005	61.77%	0.00%	28.70%	0.00%	9.52%	0.00%

HISTORICAL VALUES (All dollar amounts in millions. Numbers may not add up correctly due to rounding.)**FIGURE 18: PENSION PLAN INFORMATION BY BUSINESS SECTOR**

SECTOR	COUNT OF		FY 2020 MVA	FY 2020 PBO	FY 2020 FUNDED RATIO	2020 CONTRIBUTION	NON-WEIGHTED BY MVA		WEIGHTED BY MVA			
	COUNT	CALENDAR FY					FY 2020 DISC. RATE	FY 2020 ERoR	FY 2020 ACT. RoR	FY 2020 EQUITY	FY 2020 FIXED	FY 2020 OTHER
Basic Materials	5	4	60,407	75,455	80%	746	2.41%	6.6%	12.78%	37%	38%	26%
Communication Services	4	3	100,878	117,356	86%	723	2.64%	6.8%	11.64%	46%	35%	19%
Consumer Cyclical	6	5	188,775	209,517	90%	1,541	2.23%	5.5%	14.00%	13%	72%	15%
Consumer Defensive	11	7	96,673	106,817	91%	1,120	2.38%	5.9%	12.09%	32%	58%	10%
Energy	4	4	78,641	99,792	79%	2,999	2.23%	5.2%	13.14%	36%	55%	9%
Financial Services	17	17	214,705	209,952	102%	3,686	2.42%	5.5%	13.16%	29%	55%	17%
Healthcare	8	8	136,588	155,963	88%	4,214	2.35%	6.9%	14.06%	47%	36%	17%
Industrials	23	18	561,465	667,825	84%	15,193	2.50%	6.7%	14.64%	34%	45%	21%
Technology	7	4	157,903	169,432	93%	1,513	1.93%	4.4%	9.29%	16%	68%	16%
Utilities	15	15	169,257	185,334	91%	2,903	2.62%	7.0%	14.28%	41%	40%	19%
Total	100	85	1,765,292	1,997,442	88%	34,638	2.41%	6.2%	13.39%	32%	50%	18%

FIGURE 19: 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
2020	\$62,503	\$6,474	\$170,476	\$610	(\$107,973)	\$5,864	36.7%	3.7%
2019	\$56,030	\$2,850	\$169,867	\$452	(\$113,837)	\$2,398	33.0%	1.6%
2018	\$53,180	(\$6,397)	\$169,415	(\$24,655)	(\$116,235)	\$18,258	31.4%	0.7%
2017	\$59,577	\$4,973	\$194,070	(\$3,059)	(\$134,493)	\$8,032	30.7%	3.0%
2016	\$54,604	(\$876)	\$197,129	(\$8,415)	(\$142,525)	\$7,539	27.7%	0.7%
2015	\$55,480	(\$5,969)	\$205,544	(\$12,692)	(\$150,064)	\$6,723	27.0%	-1.2%
2014	\$60,065	\$2,693	\$231,860	(\$25,962)	(\$171,795)	\$28,655	25.9%	3.6%
2013	\$61,449	\$8,012	\$218,236	(\$27,400)	(\$156,788)	\$35,412	28.2%	6.4%
2012	\$57,372	\$3,935	\$257,821	\$12,185	(\$200,449)	(\$8,250)	22.3%	0.5%
2011	\$53,437	(\$3,378)	\$245,637	\$3,341	(\$192,199)	(\$6,719)	21.8%	-1.6%
2010	\$56,815	\$6,130	\$242,295	\$9,330	(\$185,481)	(\$3,200)	23.4%	1.6%
2009	\$50,685	(\$7,150)	\$232,965	(\$42,747)	(\$182,280)	\$35,597	21.8%	0.8%
2008	\$57,834	(\$29,646)	\$275,712	(\$42,080)	(\$217,877)	\$12,433	21.0%	-6.5%
2007	\$87,481	\$4,529	\$317,792	(\$10,716)	(\$230,311)	\$15,245	27.5%	2.2%
2006	\$82,952	\$5,922	\$328,508	(\$17,154)	(\$245,556)	\$23,076	25.3%	3.0%
2005	\$77,030	N/A	\$345,662	N/A	(\$268,632)	N/A	22.3%	N/A

Who are the Milliman 100 companies?

The Milliman 100 companies are the 100 U.S. public companies with the largest defined benefit (DB) pension plan assets for which a 2020 annual report was released by March 5, 2021.

This 2021 report is Milliman's 21st annual study. The total value of the pension plan assets of the Milliman 100 companies was \$1.77 trillion at the end of FY 2020.

About the study

The results of the Milliman 2021 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 2020 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, the footnotes may also include figures for the companies' nonqualified and foreign plans, both of which are often unfunded or subject to different funding standards from those for U.S. qualified pension plans. The information, data, and footnotes do not represent the funded status of the companies' U.S. qualified pension plans under ERISA.

Fifteen of the companies in the 2021 Milliman Pension Funding Study had fiscal years other than the calendar year. The 2021 study includes three new companies to reflect mergers, acquisitions, and other corporate transactions during FY 2020. Figures quoted from 2020 reflect the 2021 composition of Milliman 100 companies and may not necessarily match results published in the 2020 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 2021 study will be used to update the Milliman 100 Pension Funding Index (PFI) as of December 31, 2020, the basis of which will be used for projections in 2021 and beyond. The Milliman 100 PFI is published on a monthly basis and reflects the effect of market returns and interest rate changes on pension funded status.



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