Milliman analysis: Corporate pension funded status improves by \$7 billion in November

The funded ratio for the Milliman 100 plans improved to 93.7%

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The funded status of the 100 largest corporate defined benefit pension plans improved by \$7 billion during November as measured by the Milliman 100 Pension Funding Index (PFI). The deficit fell to \$100 billion primarily due to a robust investment gain of 0.72% for the month. Pension plan liabilities improved marginally during November as the benchmark corporate bond interest rates used to value those liabilities slightly increased. As of November 30, the funded ratio increased to 93.7%, up from 93.2% at the end of October. The funded status rebounded in November from the previous month's large investment losses of 3.62%.

The market value of assets rose by \$7 billion as a result of November's investment gain of 0.72%. The Milliman 100 PFI asset value increased to \$1.485 trillion at the end of November. The cumulative investment return in 2018 has been a loss of 1.49% year-to-date, making it likely these plans will miss the expected return assumption. By comparison, the 2018 Milliman Pension Funding Study reported that the monthly median expected

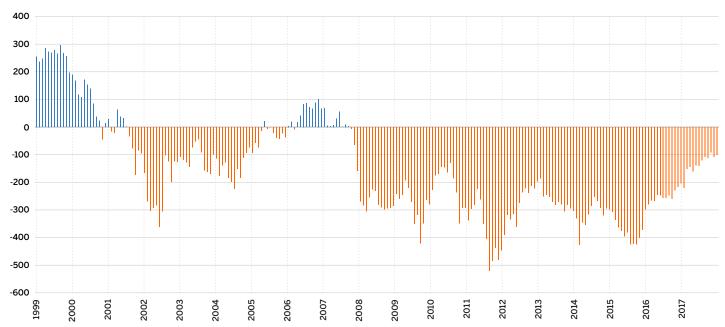
HIGHLIGHTS				
		\$ BILLIC		
	MV	РВО	FUNDED STATUS	FUNDED PERCENTAGE
OCTOBER	1,479	1,586	(107)	93.2%
NOVEMBER	1,485	1,585	(100)	93.7%
MONTHLY CHANGE	+6	(1)	+7	0.5%
YTD CHANGE	(70)	(191)	+121	6.1%

Note: Numbers may not add up precisely due to rounding

investment return during 2017 was 0.55% (6.8% annualized). This year likely marks the third in a decade that the Milliman 100 plans miss their target investment return assumption.

The projected benefit obligation (PBO), or pension liabilities, decreased by \$1 billion, settling at \$1.585 trillion at the end of November. There was a meager increase in the monthly discount rate of one basis point, resulting in 4.41% for November from 4.40% for October.

FIGURE 1: MILLIMAN 100 PENSION FUNDING INDEX PENSION SURPLUS/DEFICIT



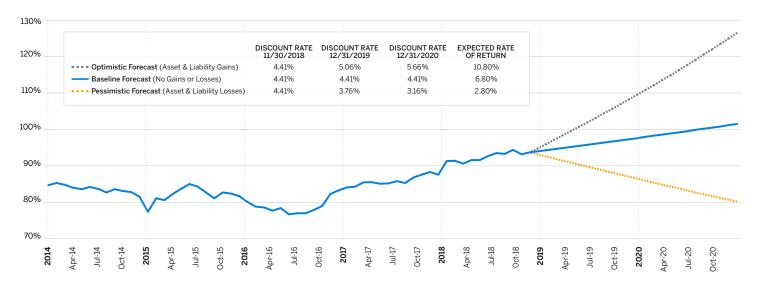


FIGURE 2: MILLIMAN 100 PENSION FUNDING INDEX — PENSION FUNDED RATIO

Over the last 12 months (December 2017–November 2018), the cumulative asset return for these pensions has been 0.21%, but the Milliman 100 PFI funded status deficit has improved by \$105 billion primarily due to rising discount rates. Discount rates have increased over the last 12 months, moving from 3.67% as of November 30, 2017, to 4.41% a year later. The funded ratio of the Milliman 100 companies has increased over the past 12 months to 93.7% from 88.3%

2018-2020 Projections

If the Milliman 100 PFI companies were to achieve the expected 6.8% median asset return (as per the 2018 pension funding study) and if the current discount rate of 4.41% were maintained during the remaining months of 2018 through 2020, we forecast the funded status of the surveyed plans would increase. This would result in a projected pension deficit of \$37 billion (funded ratio of 97.6%) by the end of 2019 and a projected pension surplus of \$24 billion (funded ratio of 101.5%) by the end of 2020. For purposes of this forecast, we have assumed 2019 and 2020 aggregate annual contributions of \$52 billion.

Under an optimistic forecast with rising interest rates (reaching 5.06% by the end of 2019 and 5.66% by the end of 2020) and asset gains (10.8% annual returns), the funded ratio would climb to 110% by the end of 2019 and 127% by the end of 2020. Under a pessimistic forecast with similar interest rate and asset movements (3.76% discount rate at the end of 2019 and 3.16% by the end of 2020 and 2.8% annual returns), the funded ratio would decline to 87% by the end of 2019 and 80% by the end of 2020.

About the Milliman 100 Monthly Pension Funding Index

For the past 18 years, Milliman has conducted an annual study of the 100 largest defined benefit pension plans sponsored by U.S. public companies. The Milliman 100 Pension Funding Index projects the funded status for pension plans included in our study, reflecting the impact of market returns and interest rate changes on pension funded status, utilizing the actual reported asset values, liabilities, and asset allocations of the companies' pension plans.

The results of the Milliman 100 Pension Funding Index were based on the actual pension plan accounting information disclosed in the footnotes to the companies' annual reports for the 2017 fiscal year and for previous fiscal years. This pension plan accounting disclosure information was summarized as part of the Milliman 2018 Pension Funding Study, which was published on April 19, 2018. In addition to providing the financial information on the funded status of 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 than those for U.S. qualified pension plans. They do not represent the funded status of the companies' U.S. qualified pension plans under ERISA.

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DECEMBER 2018

MILLIMAN 100 PENSION FUNDING INDEX — NOVEMBER 2018 (ALL DOLLAR AMOUNTS IN MILLIONS)

END OF MONTH	YEAR	MARKET VALUE OF ASSETS	PROJECTED BENEFIT OBLIGATION (PBO)	FUNDED STATUS	CHANGE IN FUNDED STATUS	FUNDED RATIO
NOVEMBER	2017	1,540,006	1,744,398	(204,392)	N/A	88.3%
DECEMBER	2017	1,555,289	1,775,721	(220,432)	(16,040)	87.6%
JANUARY	2018	1,576,415	1,727,191	(150,776)	69,656	91.3%
FEBRUARY	2018	1,536,732	1,680,622	(143,890)	6,886	91.4%
MARCH	2018	1,529,451	1,688,946	(159,495)	(15,605)	90.6%
APRIL	2018	1,524,230	1,663,183	(138,953)	20,542	91.6%
MAY	2018	1,531,432	1,672,278	(140,846)	(1,893)	91.6%
JUNE	2018	1,523,684	1,644,368	(120,684)	20,162	92.7%
JULY	2018	1,537,789	1,645,155	(107,366)	13,318	93.5%
AUGUST	2018	1,546,237	1,657,345	(111,108)	(3,742)	93.3%
SEPTEMBER	2018	1,538,946	1,629,977	(91,031)	20,077	94.4%
OCTOBER	2018	1,478,951	1,586,232	(107,281)	(16,250)	93.2%
NOVEMBER	2018	1,485,200	1,584,851	(99,651)	7,630	93.7%

PENSION ASSET AND LIABILITY RETURNS

END OF MONTH		ASSET RETURNS			LIABILITY RETURNS	
	YEAR	MONTHLY	YEAR-TO-DATE	DISCOUNT RATE	MONTHLY	YEAR-TO-DATE
NOVEMBER	2017	0.73%	10.38%	3.67%	0.29%	7.78%
DECEMBER	2017	0.99%	11.48%	3.53%	2.10%	10.04%
JANUARY	2018	1.64%	1.64%	3.74%	-2.39%	-2.39%
FEBRUARY	2018	-2.25%	-0.64%	3.96%	-2.34%	-4.67%
MARCH	2018	-0.19%	-0.84%	3.91%	0.86%	-3.85%
APRIL	2018	-0.06%	-0.89%	4.03%	-1.16%	-4.96%
MAY	2018	0.76%	-0.14%	3.99%	0.92%	-4.09%
JUNE	2018	-0.22%	-0.37%	4.12%	-1.30%	-5.34%
JULY	2018	1.21%	0.84%	4.11%	0.42%	-4.94%
AUGUST	2018	0.83%	1.68%	4.05%	1.11%	-3.88%
SEPTEMBER	2018	-0.19%	1.48%	4.18%	-1.28%	-5.10%
OCTOBER	2018	-3.62%	-2.19%	4.40%	-2.30%	-7.28%
NOVEMBER	2018	0.72%	-1.49%	4.41%	0.31%	-6.99%

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