Conning's Annual Corporate Pension Review – 2017

A Year of Improvement

May 2018

ASSET MANAGEMENT | WHITE PAPER

Conning's Annual Corporate Pension Review — 2017 gauges the financial health of the U.S. corporate defined benefit (DB) industry through the analysis of 496 U.S. corporate DB plans that provide data from the end of 2013 to the end of 2017.

KEY FINDINGS

» Total funded status improved to 85.1% in 2017 from 80.4% in 2016 (See Exhibit 1), driven by a 75% increase in plan contributions.

» The average pension discount rate fell from 4.00% in 2016 to 3.65% in 2017, thereby increasing pension liabilities. The overall average expected return on assets of 6.45% was the lowest since 2013.

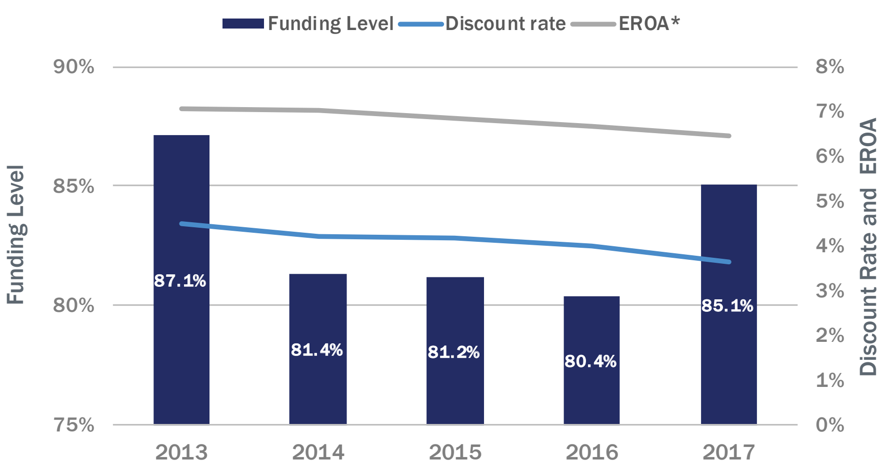
» Unfunded pension liabilities were a lower percentage of company equity and free cash flow in 2017 (6.0% and 54.8%, respectively) than in the prior year (8.0% and 67.1%, respectively).

» Total unfunded pension liabilities were 6.7% of the total long-term debt inclusive of the pension liabilities in 2017, an improvement from 8.5% the previous year.

» Overall, fixed-income assets increased 14% in 2017, and fixed income remained the largest asset allocation category among equities, fixed income, and alternative investments (41.6%, 33.9%, and 24.5%, respectively).

» Among all sectors, the best-funded pension plans were in the Financial sector (98.4%), whereas the least-funded were in the Diversified sector (69.3%).

Exhibit 1: Funded Status, 2013-2017



Prepared by Conning, Inc. Source: ©2013-2017 Bloomberg L.P.
*Expected return on assets.

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In addition to this report, Conning's LDI Team produces monthly reports to track pension funding trends throughout the year. Please visit the [LDI webpage] for the latest Pension Tracker report.

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Learn more about Conning's LDI approach and try the interactive Pension Risk Analyzer at https://www.conning.com/pension-plans/liability-driven-investing

OVERVIEW

For 2017, Conning's analysis found that total pension assets increased more than pension liabilities for the 496 companies in its database. Assets grew 12%, driven in large part by a strong increase in plan sponsor contributions during the year. Pension liabilities increased only 6% and, as a result, plan funding status improved.

Offsetting that positive news was the continued decrease in the accounting discount rates, which reached their lowest level in the five-year period covered in this report. The reduction was mainly driven by credit-spread compression, even though underlying U.S. Treasury rates were marginally higher. As a result, unfunded liabilities were 6.0% of equity, 15.8% of retained earnings, 52.0% of net income, and 54.8% of free cash flow. These are the lowest percentages since 2013.

Plan performance continued to be influenced by external forces in 2017. The enactment of the Tax Cuts and Jobs Act in 2017 reduced corporate tax rates, encouraging plans to contribute under a higher tax rate to receive a higher tax deduction. We expect this trend to continue until September 2018 as plans can use 2017 tax rate for contributions made until then. Increases in PBGC premiums and the adoption of new mortality tables also motivated sponsors to accelerate contributions. As a result, plans continue to de-risk their investment strategies by implementing liability-driven investing (LDI) strategies, lump-sum payments to qualified members, and potential pension risk-transfer transactions.

Notable pension risk-transfer transactions in 2017 included:

» International Paper's $1.3 billion liability transfer and The Hartford's $1.6 billion liability transfer, both to Prudential Financial
» Accenture's $1.0 billion liability transfer to AIG and MassMutual
» MillerCoors' $900 million liability transfer to Athene.

In 2017, investment de-risking continued to have an impact on asset allocations. These de-risking efforts continue to include the diversification of growth portfolios away from equities and the adoption of LDI strategies that better match assets to liabilities. Looking ahead, as long-bond yields continue to rise, Conning expects that demand for long-duration fixed-income assets will increase as plans continue to de-risk and shift their allocations toward liability-matching/LDI strategies.

PLAN FUNDED STATUS IMPROVES IN 2017 BUT TRAILS 2013 LEVEL

Funded status and unfunded pension liabilities challenge plan sponsors, who try to forecast the impact on company financials. Increases in plan funding status in 2017 reduced the impact on capital and earnings compared to the prior year. Sponsors continued their efforts to reduce that impact by trading performance for stability, shifting assets from equities to fixed income.

Contributions Drive Improvement in Funding Status

In 2017, plans saw their funded status increase nearly 500 basis points from the prior year (see Exhibit 1). Unfunded pension liabilities fell from $402 billion in 2016 to $325 billion in 2017. Much of that decrease was driven by a 75% increase in plan contributions. Offsetting those contributions, to some extent, was the continued decrease in discount rates.

At a cumulative level, plan funded status increased to 85.1% from 2016's 80.4%. Over a five-year period, funded status began at 87.1% in 2013 and decreased every year until the 2017 increase. In dollar terms, unfunded pension liabilities were $243 billion in 2013 and have since risen to $325 billion.

Plan sponsors increased plan contributions by 75% in 2017 over 2016, and these were a major driver of the 12% increase in plan assets. Among the 496 plans in Conning's database, 240 increased contributions in 2017 from 2016, 190 decreased contributions, 10 maintained their contributions, and 56 made no contributions. However, plan liabilities also increased 6%, largely due to an average 26-basis-point decrease in the discount rate used to calculate liabilities.

The expected return on assets has decreased mainly because plans de-risked by shifting away from higher-returning and more volatile investments such as equities and toward lower-yielding, less volatile investments such as fixed income.

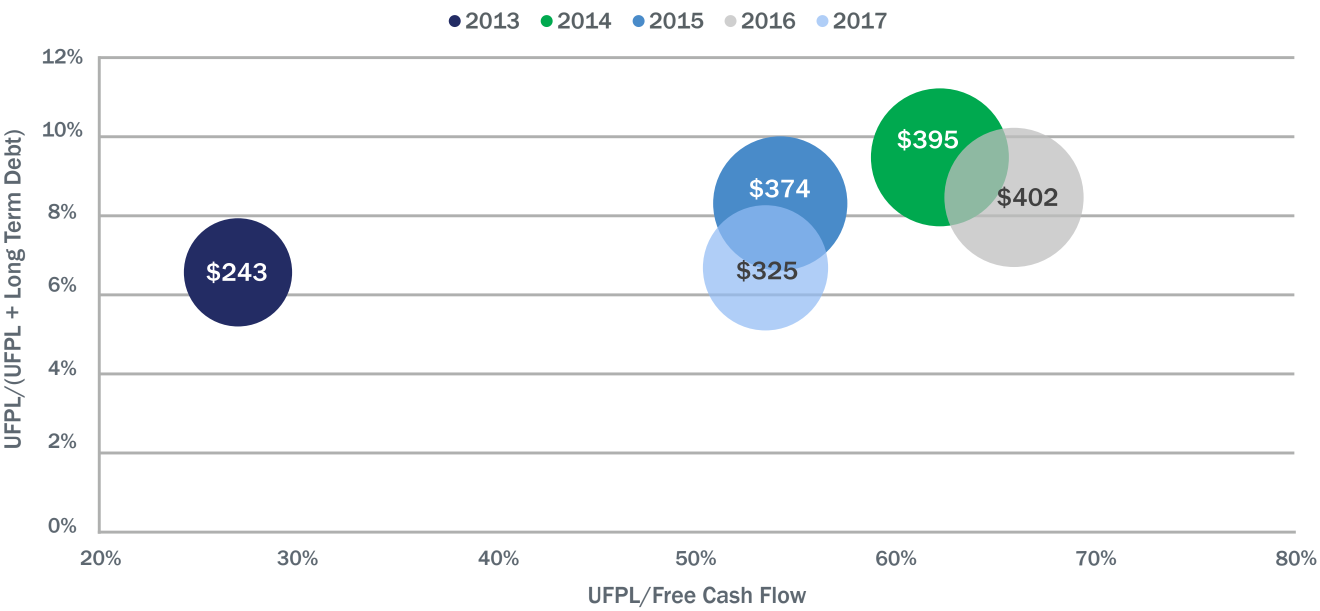
Lower Unfunded Plan Liabilities Reduce Potential Impact on Equity and Free Cash Flow

Unfunded pension liabilities, or UFPLs, are the deficit created when plan liabilities exceed plan assets. Regulations require that plan sponsors close their UFPL gap, which may occur through improved investment returns, increases in long-dated bond yields, contributions to the plan, or any combination of the three.

To evaluate the impact of UFPL, Conning measures it against free cash flow and the combination of UFPL and long-term debt.

In 2017, the $325 billion in UFPL represented 54.8% of the combined free cash flow for the companies in Conning's database (see Exhibit 2). This was lower than the previous year because, while free cash flow decreased by less than 1% in 2017 to $593 billion, the total UFPL decreased by 19%.

Exhibit 2: Unfunded Pension Liability Impact, 2013-2017



Prepared by Conning, Inc. Source: ©2013-2017 Bloomberg L.P.
Size of bubble is unfunded pension liability in $B

A plan's UFPL is viewed as unsecured senior debt by lenders and rating agencies. UFPL decreased relative to the overall long-term debt of the companies in 2017, compared to 2016, to 7.2%. This was the result of the 4% increase in long-term debt in 2017 and the decrease in UFPL. Increases in long-term debt were prevalent across the majority of companies, with 253 of the 496 reporting higher long-term debt in 2017.

Increases in UFPL can affect credit ratings, leading to higher costs of capital, and may expose sponsors to the risk of making sizable plan contributions to help reduce a plan's funding gap. Employing an investment strategy that aims to match assets with underlying liabilities, such as LDI, can help reduce this risk.

PLAN SIZE EXPERIENCE VARIES

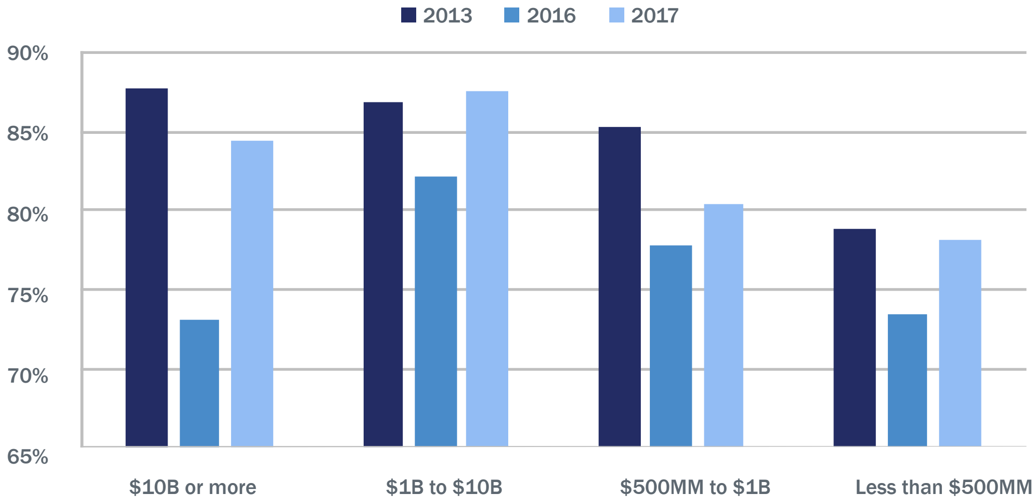
There was a noticeable difference in the funding level changes among different sized plans. Conning categorized the plans in its study into four groups based on plan asset size.

1. $10 billion or more: . . . . 47 plans
2. $1 billion – $10 billion: . . . . 166 plans
3. $500 million – $1 billion: . . . . 85 plans
4. Under $500 million: . . . . 198 plans

Funding Status Improves Across All Plan Sizes

All four categories reported higher funded statuses in 2017 compared to 2016, but three of the four size categories were still below 2013 funding status levels (see Exhibit 3). Only the plans with assets between $1 billion to $10 billion were above their 2013 funding level.

Exhibit 3: Funding Status by Plan Asset Size



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One factor contributing to the larger improvement in funded status was the increase in plan assets (see Exhibit 4). Plans with $10 billion or more in assets led the way, generating a 15.6% increase in plan assets in 2017 compared to 2016, but all plan sizes saw asset growth during the year.

Exhibit 4: Plan Assets Year-Over-Year Change, 2015-2017

Plan Size	2015	2016	2017
$10B or more	-7.9%	8.1%	15.6%
$1B to $10B	-5.6%	-7.4%	5.6%
$500MM to $1B	3.8%	-1.8%	11.0%
Less than $500MM	0.3%	1.0%	2.1%

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The improvement in plan assets was affected by the increase in plan contributions (see Exhibit 5). Plans with $10 billion or more in assets again led the way, increasing plan contributions 125% over 2016. Only the smallest plans, those with less than $500 million in assets, reduced their contributions from 2016 levels.

Exhibit 5: Plan Contributions Year-Over-Year Change, 2015-2017

Plan Size	2015	2016	2017
$10B or more	-33.7%	53.0%	125.1%
$1B to $10B	-7.2%	-1.3%	11.3%
$500MM to $1B	1.9%	-7.0%	30.1%
Less than $500MM	1.3%	0.6%	-7.8%

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A factor contributing to the increase in plan liabilities was the continued decrease in discount rates (see Exhibit 6), which occurred across all plan sizes.

Exhibit 6: Annual Average Discount Rates, 2015-2017

Plan Size	2015	2016	2017
$10B or more	4.29%	4.15%	3.72%
$1B to $10B	4.18%	4.01%	3.64%
$500MM to $1B	4.25%	4.04%	3.73%
Less than $500MM	4.13%	3.95%	3.61%

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As plan sponsors pursue de-risking strategies, they are reducing funding status volatility by shifting their assets toward fixed-income securities. This also has the effect, however, of reducing the expected return on assets (EROA), as seen in Exhibit 7. In 2017, the largest plans experienced a 33-basis-point decrease in EROA, and the smallest companies' EROA decreased 28 basis points.

Exhibit 7: Average EROA, 2015-2017

Plan Size	2015	2016	2017
$10B or more	7.29%	7.37%	7.04%
$1B to $10B	6.95%	6.81%	6.56%
$500MM to $1B	6.78%	6.56%	6.51%
Less than $500MM	6.67%	6.45%	6.17%

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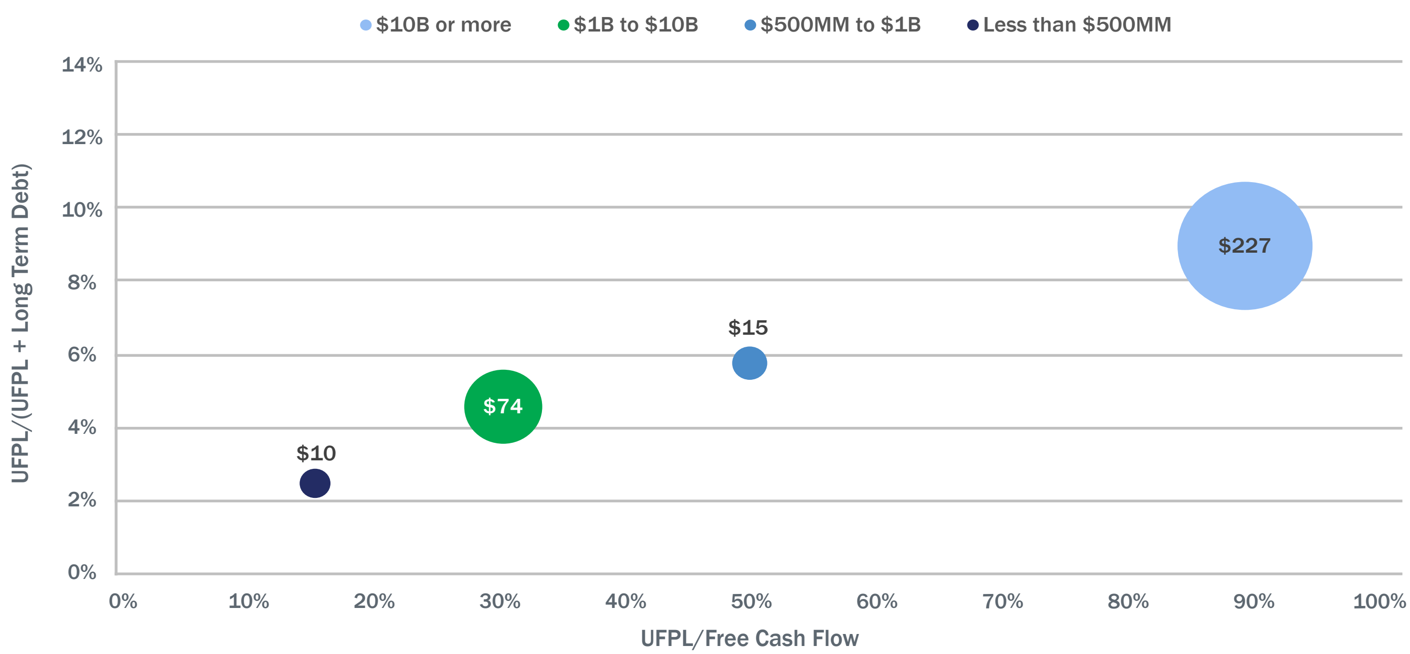
The positive news is that plan assets increased by more than plan liabilities, and funding levels reached their highest levels since 2013. Looking ahead, the strategic and tactical questions will be on how plan sponsors build on this improvement in 2018 and beyond.

Exhibit 8: Unfunded Pension Liability Impact by Plan Size, 2017



Prepared by Conning, Inc. Source: ©2013-2017 Bloomberg L.P.
Size of bubble is unfunded pension liability in $B

For 2017, Conning's analysis found that total pension assets increased more than pension liabilities for the 496 companies in its database. Assets grew 12%, driven in large part by a strong increase in plan sponsor contributions during the year. Pension liabilities increased only 6% and, as a result, plan funding status improved.

UFPL Impact on Equity and Free Cash Flows Improves

In 2017, all plan size categories decreased UFPL as a percentage of free cash flow and as a percentage of long-term debt plus UFPL (Exhibit 8 displays the 2017 figures). The largest plans saw their combined UFPL decrease from 92% in 2016 to 88% of combined free cash flow in 2017. Plans with $1 billion from 47% of free cash flow to $10 billion saw their UFPL decrease to 30%.

The ratio of UFPL to free cash flow for plans with $500 million to $1 billion decreased from 69% in 2016 to 50%. The plans with less than $500 million in assets produced a combined decrease from 21% to 15% of free cash flows in 2017.

Looking across the period 2013-2017, plans with less than $500 million in assets saw their combined UFPL range from a low of 15% of free cash flow to a high of 24%. The largest plans saw their combined UFPL range from a low of 30% of free cash flows to a high of 92%. Plans with $1 billion to $10 billion generated a range from 26% to 56% of free cash flows. Plans with $500 million to $1 billion produced a range of 32% to 69%.

> ***"As yields rise, demand for long-duration fixed-income assets may increase as plans shift their allocations toward liability-matching/LDI strategies."***

Offsetting that positive news was the continued decrease in the accounting discount rates, which reached their lowest level in the five-year period covered in this report. The reduction was mainly driven by credit-spread compression, even though underlying U.S. Treasury rates were marginally higher over 2017. As a result, unfunded liabilities were 6.0% of equity, 15.8% of retained earnings, 52.0% of net income, and 54.8% of free cash flow. These are the lowest percentages since 2013.

Plan performance continued to be influenced by external factors in 2017. The enactment of the Tax Cuts and Jobs Act in 2017 reduced corporate tax rates, allowing some plan sponsors to repurpose funds from taxes to plan contributions in order to augment their tax positions. Increases in PBGC premiums and the adoption of new mortality tables continued to motivate de-risking efforts for some plan sponsors. As a result, plans continue liability-driven investing (LDI) strategies, lump-sum payments to qualified members and pension risk-transfer transactions.

Notable pension risk-transfer transactions in 2017 included:

- International Paper's $1.3 billion liability transfer and The Hartford's $1.6 billion liability transfer to Prudential Financial
- Accenture's $1.0 billion liability transfer to AIG and MassMutual
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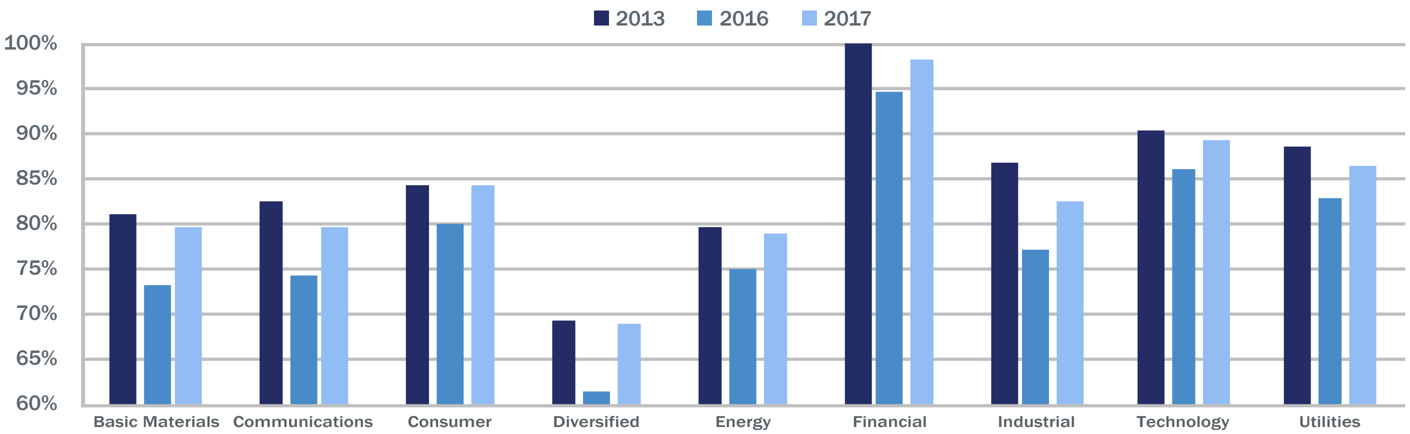
In 2017, investment de-risking continued to have an impact on asset allocations. These de-risking efforts include the diversification of growth portfolios away from equities and the adoption of LDI strategies that better match assets to liabilities. Looking ahead, as yields continue to rise, Conning expects that demand for long-duration fixed-income assets will increase as plans continue to de-risk and shift their allocations toward liability-matching/LDI strategies.

SECTORS HIGHLIGHT VARIATION

Categorizing the plans according to their industry sector — nine sectors are represented among the plans in Conning's study — reveals significant variations in funded status and discount rates. The number of companies within each sector varies, from one in the Diversified sector to 152 in the Consumer sector.

Among these sectors, Industrial and Consumer had the largest share of defined benefit pension assets (26% and 23%, respectively) in 2017. Their dominance likely reflects the presence of large, long-establish companies such as General Motors, GE, and Procter & Gamble. Combined, those two sectors represent approximately $1.1 trillion in plan liabilities.

Exhibit 9: Funding Level by Sector

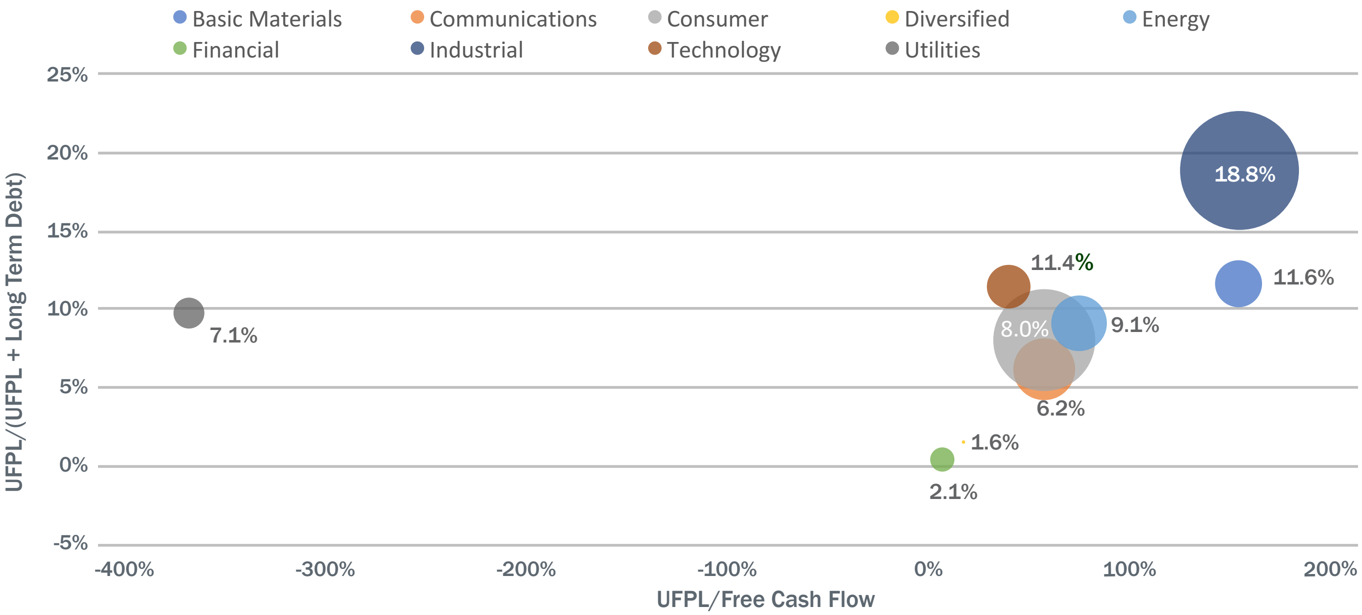


Prepared by Conning, Inc. Source: ©2013-2017 Bloomberg L.P.
Financial Sector 2013 Funding Level = 101.8%

All Sectors Improve Funding Status in 2017

Compared to 2016, all sectors improved their funding status in 2017 (see Exhibit 9). The Diversified sector (albeit just one company in this study) increased its funding status to 69% from 62%. Basic Materials improved its funding status to 80% from 74% in 2016. The Industrial sector's funding status rose to 83% in 2017 from 77% in 2016. The Consumer sector rose to 85% from 80%.

Exhibit 10: Unfunded Pension Liability Impact by Sector, 2017



Prepared by Conning, Inc. Source: ©2013-2017 Bloomberg L.P.
Size of bubble is unfunded pension liability in $B

Over a longer period, all sectors except Consumer remain below their 2013 funding status level. That said, four sectors — Basic Materials, Diversified, Energy, and Technology — are within one percentage point of their 2013 levels. The Financial sector remains the most highly funded, at 98%.

Average discount rates for the nine sectors in 2017 ranged from 3.17% per year for Technology to 3.91% per year for Utilities, and all sectors had a decrease in their average discount rate from 2016. Among the sectors, Utilities had the lowest decrease at only 23 basis points per year.

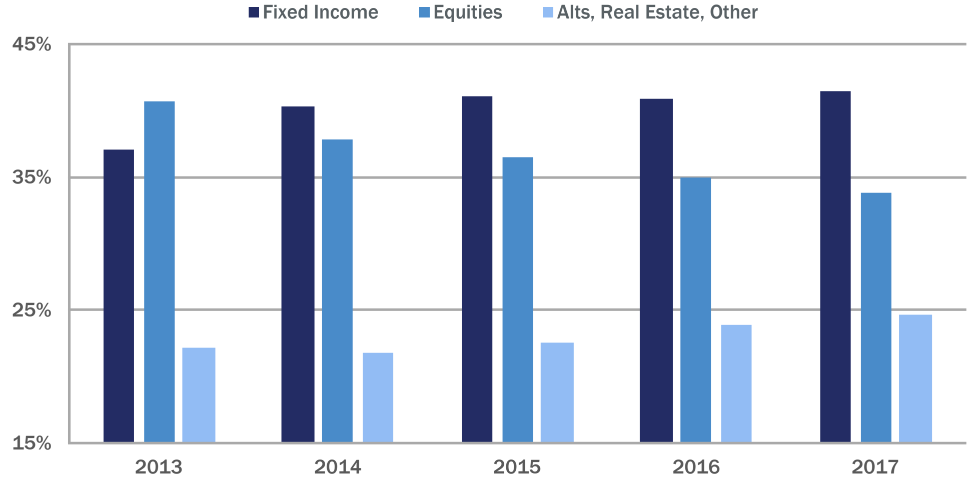
Financials UFPL Impact on Capital and Free Cash Flows Had Narrowest Variability

When analyzing the impact of UFPLs on free cash flows by sector (see Exhibit 10), the number of sectors amplifies the impact of companies with net losses in a given year. In some cases, the UFPL exceeded the sector's free cash flow. For example, 20 of the 31 companies in the Utilities sector reported negative free cash flows in 2017. Over the 2013-2017 observation period, the Utilities sector has reported negative free cash flows. Companies with negative cash flows could have less financial cushion to absorb unexpected plan contributions and, therefore, a stronger incentive to consider LDI.

ASSET ALLOCATION STRATEGIES CONTINUE SHIFT TOWARD FIXED INCOME

Efforts by plan sponsors to reduce funding level variability has led to the adoption of LDI strategies. One effect of these strategies is the continued shift in asset allocations toward fixed income, as seen in Exhibit 11. Equities were 41% of total plan assets in 2013 and decreased steadily to 34% in 2017. Conversely, fixed-income securities increased from 37% to 42% over the same period. With interest rates remaining low during this period and concerns about funded status variability high, plan sponsors have traded lower volatility against higher equity returns.

Exhibit 11: Aggregate Asset Allocation, 2013-2017



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Smallest Plans Retain Highest Equity Allocation

Efforts by plan sponsors to reduce funding level variability has led to the adoption of LDI strategies. The effect of those strategies is seen in the shift away from equities toward fixed income, regardless of plan size. However, that shift has not been uniform, as demonstrated in Exhibit 12. The largest companies had the smallest increase in fixed-income assets, though their portfolios have traditionally held the highest percentage of fixed-income assets, at 42%. The smallest companies retained the highest percentage of equities, at 43%, in 2017. The generally lower funding status of the smaller plans is a likely reason for the higher percentage of equities since those assets could potentially generate higher growth.

Exhibit 12: Change in Asset Allocation by Plan Size, 2013-2017

Plan Size	Fixed Income	Equities	Alts, Real Estate, Other
$10B or more	+9.8%	-48.9%	+11.3%
$1B to $10B	+14.9%	-53.0%	+10.2%
$50MM to $1B	+12.1%	-50.5%	+4.9%
Less than $500MM	+17.2%	-59.1%	+16.4%

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Asset diversification strategies away from equities, driven by LDI or portfolio diversification, has also led to an increase in Alts, Real Estate, and Other asset classes.

Asset Allocation by Sector

As with plan size, there was a significant variation in asset allocation among the sectors. At the end of 2017, four of the nine sectors had at least 40% of their assets in fixed-income. The Technology sector had the largest allocation, 58%, of its assets in fixed income at the end of 2017. The Diversified sector had the lowest allocation at 27%.

Examining asset allocation changes by sector, the shift toward fixed income was noticeable. Six of the nine sectors had double-digit increases in fixed-income securities. The Financial sector was the only sector that had a decrease in fixed-income allocations.

Exhibit 13: Change in Asset Allocation by Sector: 2013-2017
Basis points

Plan Size	Fixed Income	Equities	Alts, Real Estate, Other
Basic Materials	+9.2%	+2.8%	+120.9%
Communications	+11.0%	+4.9%	+17.4%
Consumer	+14.8%	+7.6%	+4.0%
Diversified	+0.2%	-1.7%	+26.2%
Energy	+24.1%	-3.8%	-2.5%
Financial	-1.5%	+19.2%	+16.8%
Industrial	+16.0%	+11.7%	+13.8%
Technology	+22.2%	-28.0%	+3.8%
Utilities	+10.6%	+13.6%	+14.4%

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SUMMARY

Conning's Annual Corporate Pension Review — 2017 analyzes the financial health of the U.S. corporate defined benefit (DB) industry. With tax reform and improved economic growth contributing to higher corporate profits, companies may be well-positioned to improve funding levels. Our analysis found that plan sponsors clearly took advantage of these conditions to increase contributions and we expect voluntary contributions to continue until September 2018. Increasing PBGC premiums also contributed to companies' desire to reduce their pension deficits. In addition, some companies took advantage of lower public-market borrowing costs and raised debt to fund their pension contributions.

Those contributions helped improve funding levels to their highest levels since 2013 and reduce unfunded pension liabilities to their lowest level as well. Looking ahead, as funding statuses potentionally improve further and interest rates increase, plan sponsors may find themselves more willing to de-risk plans by implementing LDI strategies or considering a pension risk transfer.

ABOUT THIS REPORT

In this report, Conning analyzes plan funded status and other key financial metrics. These metrics provide meaningful insight for corporate sponsors, chief investment officers (CIOs), and other plan stakeholders as they consider their strategic and tactical options.

Our 2017 database is composed of 496 company pension plans. Those plans had financial data for 2013 through 2017. Any reference to pension liability values is assumed to be U.S. GAAP-based pension valuation.

As in our prior edition, this report analyzes the impact of funded status on companies' earnings and capital. Conning further analyzes these metrics by pension plan size and corporate sectors to understand the differences that size and business focus might have on plans.

DATA AND METHODOLOGY

The data in this annual review was reported in the 10-Ks of 496 publicly traded companies. These companies were selected because they had consistently filed pension data every year for the period of 2013 through 2017.

We categorized these companies based on their plan assets and their business sector, and it is possible that the assets may include non-U.S. pension plans. In aggregate, these 496 plan sponsors reported $1.9 trillion in plan assets and $2.2 trillion in plan liabilities.

It is also important to note that asset definitions are not uniform. Conning's analysis of companies' financial statements has found that some firms only report individual stocks as equities, while other firms include stock mutual funds. A similar mixing of types occurs in fixed income. In this analysis, Conning has used the allocations as reported by the companies and has not adjusted them for this report.

About Conning®

Conning (www.conning.com) is a leading global investment management firm with approximately $122 billion in global assets under management as of March 31, 2018.* With a long history of serving the insurance industry, Conning supports institutional investors, including pension plans, with investment solutions and asset management offerings, award-winning risk modeling software, and industry research. Founded in 1912, Conning has investment centers in Asia, Europe and North America.

***As of March 31, 2018, represents the combined global assets under management for the affiliated firms under Conning Holdings Limited, and Cathay Securities Investment Trust Co., Ltd. ("SITE"). SITE reports internally into Conning Asia Pacific Limited, but is a separate legal entity under Cathay Financial Holding Co., Ltd. which is the ultimate controlling parent of all Conning entities.**