

Conning's Annual Corporate Pension Review – 2018: Continued Improvement

June 2019

ASSET MANAGEMENT | WHITE PAPER

Conning's Annual Corporate Pension Review—2018 studies the financial health of the U.S. corporate defined benefit (DB) industry through the analysis of the U.S. DB pension plans of the 3,000 largest U.S. corporations. This set of plans was then reduced to a sample universe of 658 U.S. corporate DB plans that provide data from the end of 2014 to the end of 2018, and this sample universe serves as the basis for our findings.

KEY FINDINGS

- » Average funded status improved to 86.9% in 2018 from 85.5% in 2017 (see **Exhibit 1**).
- » This improved funded status was driven by an 8.0% decrease in plan liabilities in 2018, which was greater than the 6.4% decrease in assets over the same period.
- » The average pension plan discount rate increased to 3.84% from 3.64%, contributing to the 2018 decrease in pension liabilities.
- » The 2018 average long-term expected return on assets (EROA) was 6.18% p.a., a decrease of 17 basis points from 2017 and its lowest level since 2014.
- » Unfunded pension liability, which is the difference between liabilities and assets, was on average a lower percentage of company free cash flow in 2018 than in 2017 (32.7% versus 56.1%).
- » Unfunded pension liabilities were also on average a lower percentage of total company equity in 2018 than in 2017 (4.4% versus 5.4%).
- » Total unfunded pension liabilities were on average 5.0% of the total long-term debt (inclusive of the pension liabilities) in 2018, an improvement on the previous year's 6.1%.
- » Overall, fixed income assets increased less than one percent of total assets in 2018, but fixed income remained the largest asset allocation between fixed income, equities, and alternative investment (42.3%, 30.3% and 27.4%, respectively).
- » Amongst all sectors, the most well-funded pension plans were in the Financial sector (96.5%), whereas the least-funded were in the Energy sector (78.5%).

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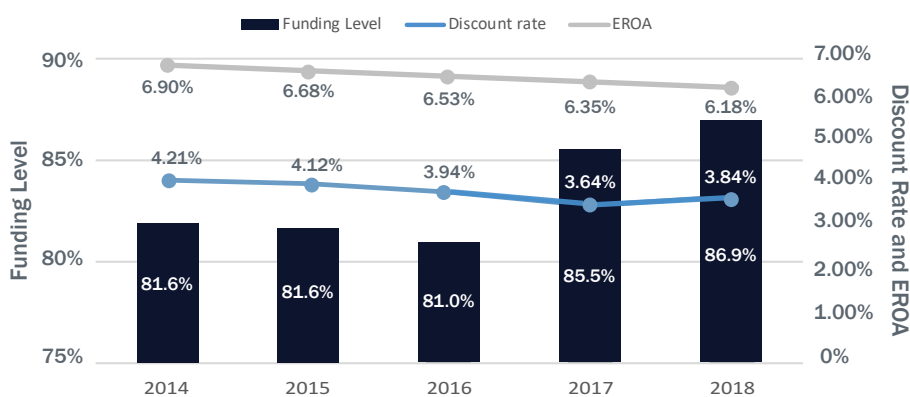
Contact Information

In addition to this report, Conning's LDI Team produces monthly reports to track pension plan funding trends throughout the year. These monthly tracker reports can be found [here](#).

Contact us at LDI@conning.com

Learn more about Conning's LDI approach and try the interactive [Pension Risk Analyzer](#).

Exhibit 1: Funding Status, 2014 – 2018



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EXECUTIVE SUMMARY

In 2018, Conning’s analyses found that total pension liabilities decreased more than pension assets for the 658 companies in its sample universe. Aggregate plan assets decreased 6.4%, driven in large part by a combination of investment losses among a few large corporate plans and net benefits (i.e. benefits net of contributions made) paid by plan sponsors over the course of the year. Even after factoring in benefit accrual and benefit payments made over the year, total pension liabilities decreased 8%, mainly due to an increase in the discount rate used to calculate plan liabilities.

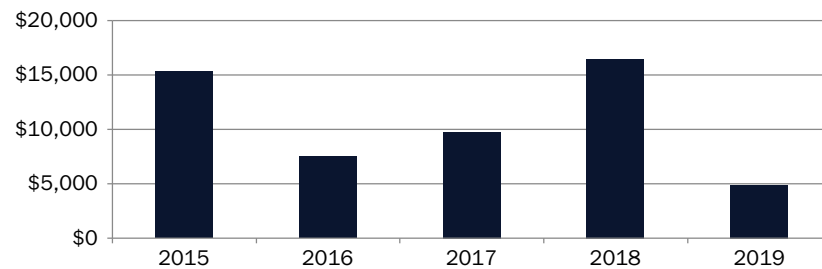
The improvement in unfunded pension liabilities (UFPL) reduced the UFPL relative size against several balance sheet and income statement items. For example, UFPL was on average 4.4% of equity, 12.4% of retained earnings, 35.7% of net income, and 32.7% of free cash flow. These are the lowest percentages over the observation period of 2014 through 2018 and also reflect U.S. corporate financial strength, particularly following attractive federal tax law changes at the end of 2017.

Plan performance continued to be influenced by external factors in 2018. Increases in interest rates led, on average, to a rise in the discount rate used to calculate pension liabilities. However, even after these improvements, increases in Pension Benefit Guaranty Corp. (PBGC) premiums remain a concern. Similarly, equity markets were volatile at times in 2018, particularly during the fourth quarter. That volatility reminded plan sponsors with

significant exposure to equities of the close inverse relationship between equity markets and UFPL. Those concerns and exposures are likely to further promote de-risking efforts such as the implementation of liability-driven investing (LDI) strategies, lump-sum payments to qualified members and pension risk-transfer (PRT) transactions.

As we remain in a low rate environment for longer, Conning sees a continuation of the PRT trend into 2019 (see **Exhibit 2**) and an increased focus on prudent downside risk management. The final quarter of last year served as a harsh reminder of the negative consequences from surplus volatility and many plan sponsors are no longer looking to take an implicit (or otherwise) bet on interest rates. Instead, sponsors are now focusing on their equity and bond allocations, looking at hibernation strategies, and new, more innovative, ways to conduct a PRT transaction in a cost-effective manner. In the year ahead, pension plan sponsors will need to navigate these tumultuous times with caution, as heightened recessionary risks, a global economic slowdown, yield curve inversion, low returns and lower interest rate yields, all remain as hurdles along sponsors’ pension plan journeys.

Exhibit 2: U.S. PRT Liability Volumes (\$ in millions)



Prepared by Conning, Inc. Source: ©2019 Conning, Inc.

(as of March 31)

Total Plan Funded Status Improves in 2018 as Liabilities Decrease

Plan sponsors are concerned about the impact of unfunded pension liabilities (UFPL), and their variability, on company financials. In 2018, increases in funded status reduced the average size of UFPL as a percentage of capital and earnings compared to the prior year, and the key reason for this was the decrease in plan liabilities.

Funding Status Improves as Discount Rates Rise

On average, in 2018 plans saw their funded status increase 147 basis points from the prior year, with UFPL falling to \$249 billion in 2018 from \$301 billion in 2017. Most plans' asset portfolios experienced a volatile 2018 and ended the year on a negative note, with assets on average detracting from the falls in UFPL. Conning's review of the plans with significant UFPL reduction over 2018 found that the most common driver of the improvement was an increase in discount rates.

On average, plan funded status increased to 86.9% from 2017's 85.5%. Over the five-year (2014-2018) period, funded status began at 81.6% and stayed broadly level until a material increase in 2017. In dollar terms, UFPL fell from \$377 billion in 2014 to \$249 billion in 2018.

Aggregate plan liabilities decreased 8% in 2018 to \$1.9 trillion from \$2.1 trillion in 2017. This decrease was widespread, reported by 588 of the 658 companies in our sample universe. The main reason for the lower liabilities was an average increase of 22 basis points in the discount rate used to calculate them. This increase was greater among larger plans; for example, plans with \$10 billion or more in assets reported an average increase of 39 basis points in the discount rate, while plans with less than \$500 million in assets reported an average increase of 15 basis points.

Plan Assets Decrease as Contributions Decline and Larger Plans Book Losses

Aggregate plan assets decreased 6% in 2018, primarily due to net benefit payments made and investment losses. This was also not helped by a drop in contributions over 2018 vs. 2017. The drop in contributions may be a surprise given September 2018 was the last month of a federal tax benefit stemming from the end of 2017 tax law changes encouraging accelerated contributions. However, the reduction was in aggregate driven by the larger plans since plans under \$1 billion in assets on average increased contributions. In 2018, pension assets were \$1.7 trillion, compared to \$1.8 trillion the prior year. Plan sponsors reported an aggregate \$2.5 billion investment loss on assets in 2018, compared to a \$6.7 billion gain in 2017.

Most of the investment losses—\$1.5 billion—were among plans with assets of \$10 billion or more. Those losses were concentrated within two companies, General Electric and Procter & Gamble, which had combined plan investment losses of \$1.1 billion in 2018.

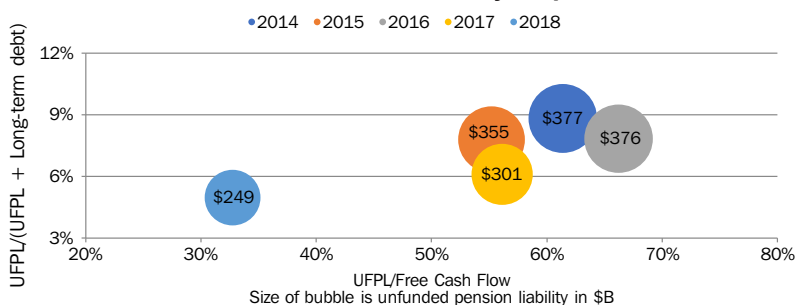
Plan sponsor 2018 aggregate contributions of \$66.7 billion were 6% lower than 2017. Among the plans in Conning's sample universe for 2018, 290 increased contributions, 269 decreased them, and 99 made no change. The largest companies were responsible for most of the contribution decreases: companies with plan assets of \$10 billion or more generated \$3.8 billion of the total decrease, while companies with plan assets between \$1 billion and \$10 billion reported an aggregate decrease of \$1.6 billion. The remaining companies reported a combined \$913 million increase in contributions.

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

UFPL are viewed as unsecured senior debt by lenders and rating agencies. Significantly large UFPL can lead to credit downgrades and a higher cost of capital. At the same time, a requirement to close a UFPL gap over time usually consumes some amount of free cash flow and/or retained earnings. Both these issues are reasons for plan sponsors to consider approaches such as LDI strategies aimed at reducing UFPL variability. Additional strategies to reduce the amount and variability of UFPL could be to improve risk-adjusted investment returns, increase plan contributions, or, in conjunction with an LDI approach, a combination of all three.

To evaluate the relative size of the UFPL against corporate financials, Conning measures it against free cash flow and the combination of UFPL and long-term debt (see **Exhibit 3**). In 2018, the \$249 billion in UFPL represented 32.7% of the combined free cash flow for all the companies in Conning's sample universe. This was lower than the previous year because free cash flow increased 41% in 2018 to \$760 billion and total UFPL decreased 17%.

Exhibit 3: Unfunded Pension Liability Impact



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UFPL as a percentage of overall long-term debt decreased to 5.0% in 2018 from 6.2% in 2017. This decrease was driven by the lower UFPL itself and aggregate long-term debt increasing to 2.4% in 2018.

Experience Varies by Plan Size

There was a noticeable difference in funded status changes among different sized plans.

Conning categorized the plans in its sample universe into four groups based on plan asset size:

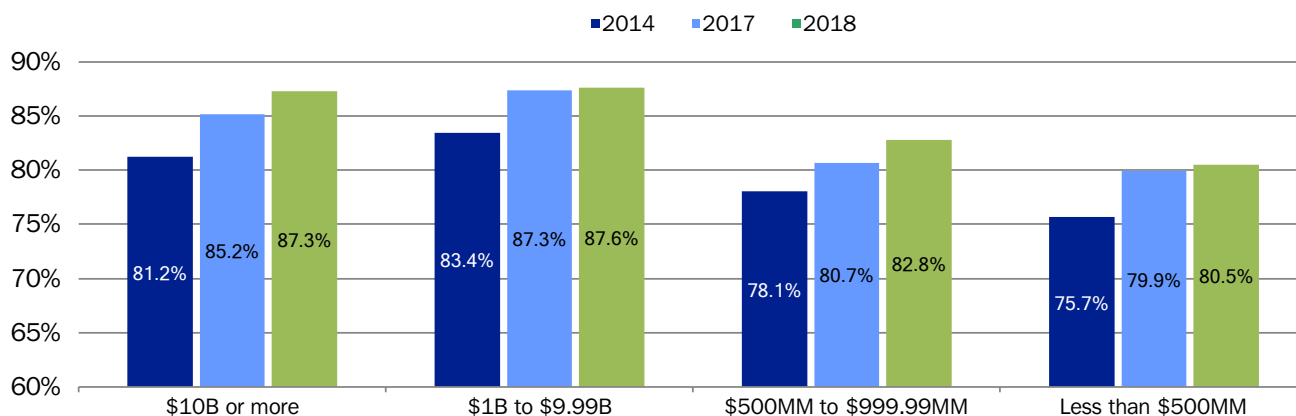
- | | | | |
|--------------------------|-----------|------------------------------|-----------|
| 1) \$10 bil or more: | 42 plans | 3) \$500 mil – \$999.99 mil: | 103 plans |
| 2) \$1 bil – \$9.99 bil: | 174 plans | 4) Under \$500 mil: | 339 plans |

Funding Status Improves Across All Plan Sizes

As **Exhibit 4** illustrates, all four categories reported higher funded status in 2018 compared to 2017, and all four were also above 2014 funded status levels. We believe this reflects specific efforts to improve funded status by corporations.

Plans with \$10 billion or more in assets increased their aggregate funded status to 87.3% in 2018 compared to a level of 85.2% in 2017. Plans with \$1 billion to \$9.99 billion in assets saw an improvement to 87.6%. Plans with \$500 million to \$999 million in assets experienced an increase to 82.8%. The smallest plans—those with less than \$500 million in assets—saw their aggregate funded status rise to 80.5%. This was the first time the smallest plans broke the 80% funded status level over our 2014 - 2018 observation period.

Exhibit 4: Funding Status by Plan Asset Size, 2014 – 2018



Prepared by Conning, Inc. Source: ©2014 – 2018 Bloomberg, L.P.

Exhibit 5: Plan Liabilities, Calendar Year Percentage Change in Value, 2016 – 2018

	2016	2017	2018
\$10B or more	7.9%	6.8%	-9.5%
\$1B to \$9.99B	-7.0%	2.0%	-5.8%
\$500MM to \$999.99MM	1.9%	7.1%	-4.9%
Less than \$500MM	3.5%	-4.0%	-4.5%

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Plans with \$10 billion or more in assets reported an average 9.5% decrease in plan liabilities in 2018. Plans with \$1 billion to \$9.99 billion in assets and \$500 million to \$999.99 million in assets had average decreases of 5.8% and 4.9%, respectively, over 2018. Plans with less than \$500 million in assets experienced an average 4.5% decrease in plan assets over the same period (see **Exhibit 5**).

The main factor contributing to the decrease in plan liabilities was the average increase in discount rates used to calculate liabilities, as seen in **Exhibit 6**. Plans with \$10 billion or more in assets reported an average increase in the average discount rate of 39 basis points. Plans with \$1 billion to \$9.99 billion reported an average increase of 20 basis points. Plans with \$500 million to \$999.99 million had an average increase of 25 basis points, and the smallest plans had an average increase of 15 basis points.

The 2018 decrease in plan liabilities more than offset the decrease in plan assets, as presented in **Exhibit 7**. Plans with \$10 billion or more in assets reported an average 7.3% decrease in assets over 2018. Plans with \$1 billion to \$9.99 billion in assets and \$500 million to \$999.99 million in assets had average decreases of 5.4% and 2.4%, respectively, over 2017 amounts. The smallest plans, those with less than \$500 million, experienced a 3.8% average decrease in plan assets.

Plan contributions decreased in 2018 (see **Exhibit 8**). However, this decrease was concentrated among the larger plans, with smaller plans increasing their contributions. Plans with \$10 billion or more in assets decreased plan contributions 8.5% on average in 2018 versus 2017. Plans with \$1 billion to \$9.99 billion in assets decreased their 2018 contributions 7.5% on average. Plans with \$500 million to \$1 billion increased their contributions 13.4% on average in 2018, and the plans with less than \$500 million in assets increased their contributions by 23.5% on average in 2018.

As funding levels have improved, plan sponsors will face strategic and tactical questions around how they will build on this improvement in 2019 and beyond.

UFPL As a Percentage of Total Debt and Free Cash Flow Improves

On average over 2018, all plan size categories saw UFPL decrease as a percentage of free cash flow and as a percentage of long-term debt plus UFPL. The largest plans saw UFPL fall on average over 2018 to 41% of combined free cash flow from 84% in 2017. Plans with \$1 billion to \$9.99 billion saw their UFPL decrease on average in 2018 to 24% from 37% of free cash flow in 2017. The ratio of UFPL to free cash flow for plans with \$500 million to \$999.99 million decreased on average in 2018 to 66% from 75% in 2017. The plans with less than \$500 million in assets produced an average decrease to 18% from 20% of free cash flow in 2017.

Exhibit 6: Average Discount Rates, 2016 – 2018

	2016	2017	2018
\$10B or more	4.07%	3.79%	4.18%
\$1B to \$9.99B	3.97%	3.68%	3.88%
\$500MM to \$999.99MM	3.94%	3.65%	3.90%
Less than \$500MM	3.91%	3.60%	3.75%

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Exhibit 7: Plan Assets, Calendar Year Percentage Change in Value, 2016 – 2018

	2016	2017	2018
\$10B or more	6.8%	12.5%	-7.3%
\$1B to \$9.99B	-7.2%	8.2%	-5.4%
\$500MM to \$999.99MM	0.3%	12.1%	-2.4%
Less than \$500MM	3.8%	1.1%	-3.8%

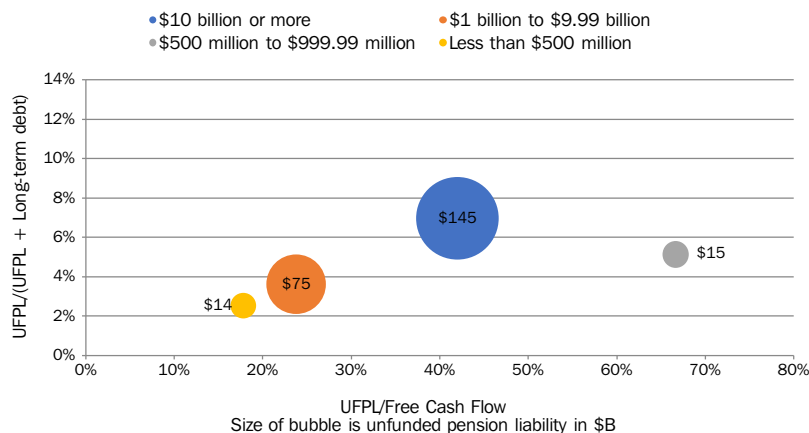
Prepared by Conning, Inc. Source: ©2016 – 2018 Bloomberg, L.P.

Exhibit 8: Plan Contributions, Calendar Year Percentage Change in Value, 2016 – 2018

	2016	2017	2018
\$10B or more	50.4%	72.4%	-8.5%
\$1B to \$9.99B	4.6%	19.4%	-7.5%
\$500MM to \$999.99MM	94.7%	-42.8%	13.4%
Less than \$500MM	0.3%	-4.6%	23.5%

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Exhibit 9: Unfunded Pension Liability Impact by Plan Size, 2018



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Looking across the observation period, plans with less than \$500 million in assets saw their average UFPL decrease in aggregate from 35% in 2014 to 18% in 2018. The largest plans saw their UFPL decrease on average from an aggregate high of 84% of free cash flow to a low of 42% in 2018. Plans with \$1 billion to \$9.99 billion generated a decrease from 54% to 24% of free cash flow. Plans with \$500 million to \$999.99 million produced a decrease of 106% to 67%.

Exhibit 9 displays the current 2018 UFPL against the two key corporate financials by plan size.

Analysis by Sector Highlights Variations

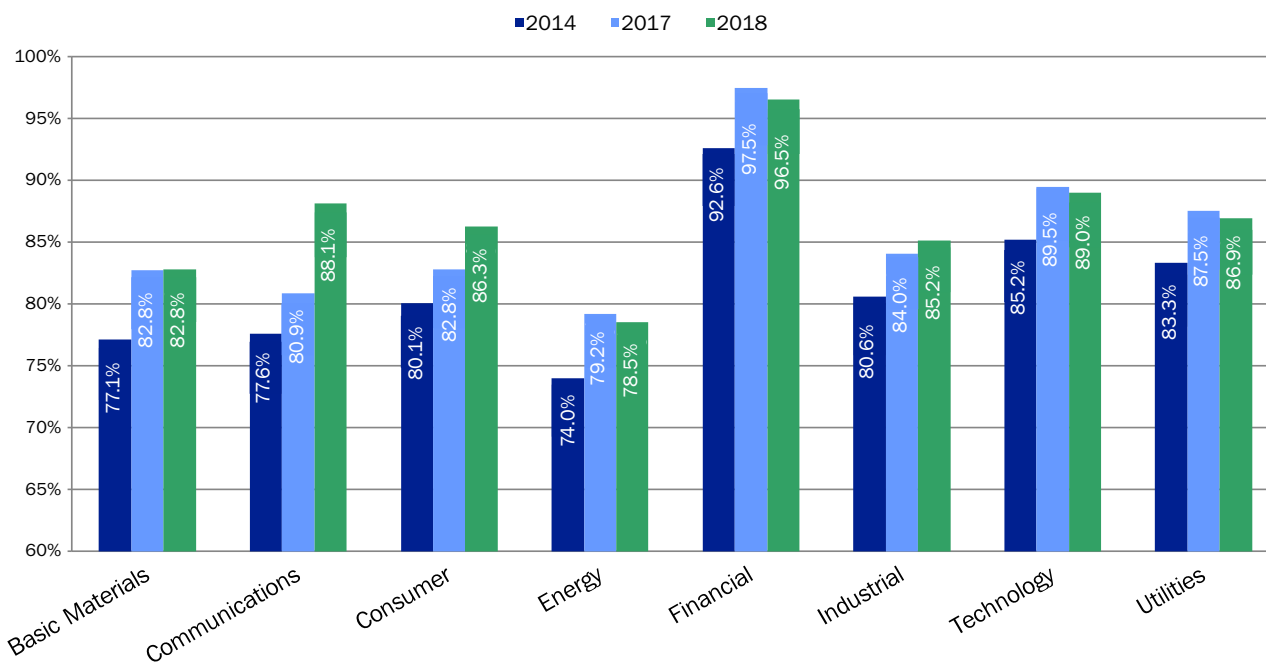
Categorizing the plans according to their industry sector revealed significant variations in funded status and discount rates. There are eight industry sectors represented among the plans in Conning's sample universe, and the number of companies within each sector range from 28 in Technology to 178 in Consumer.

Among these sectors, Industrial and Consumer had the largest share of DB pension plan assets (31% and 23%, respectively) in 2018. Their DB plan size dominance likely reflects the presence of large, long-establish companies such as General Motors, GE, and Procter & Gamble. Combined, Industrial and Consumer sectors represent approximately \$848 billion in plan liabilities.

Energy, Financials, and Utilities Improve Funding Status in 2018

Compared to 2017, all but four sectors on average improved their funded status in 2018 (see **Exhibit 10**), as Energy and Utilities reported slight decreases. Basic Materials funding status was on average essentially flat at 83%. Communications on average generated the largest improvement in funding status, to 88% from 81%. The Consumer sector on average rose 3% to 86%.

Exhibit 10: Funding Level by Sector, 2014-2018



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Financials continued to on average have the highest funded status in 2018 at 97%. The Industrial sector's funded status on average rose to 85% from 84% in 2017. The Technology sector's funded status was on average unchanged at 89%. All sectors are on average above their 2014 funded status levels.

Average discount rates for the eight sectors increased in 2018, and ranged from 2.50% p.a. for Technology to 4.02% p.a. for Utilities. Energy and Utilities had the largest increases on average of 37 basis points and 35 basis points, respectively.

UFPL Impact on Total Debt and Free Cash Flow had the Narrowest Variability

The size of UFPLs against free cash flow and long-term debt by sector for 2018 is illustrated in **Exhibit 11**. In only one sector – Utilities – was UFPL not a positive fraction of that sector's free cash flow. Utilities reported a negative percentage of UFPL against free cash flow due to negative free cash flow in aggregate for the sector during 2018, not because of a negative aggregate UFPL* (no sector had a negative aggregate UFPL in 2018).

The Financial sector had the lowest UFPL to total debt ratio and the lowest UFPL among all sectors, demonstrating that it was the best capitalized sector from a pension plan funding perspective. The Industrial sector, on the other hand, had the highest UFPL and the highest UFPL to free cash flow ratio or total debt ratio, indicating that companies in this sector had the second-worst ability to fully satisfy the pension plan funding deficit purely from free cash flows during 2018 while, as illustrated, Utilities had the worst.

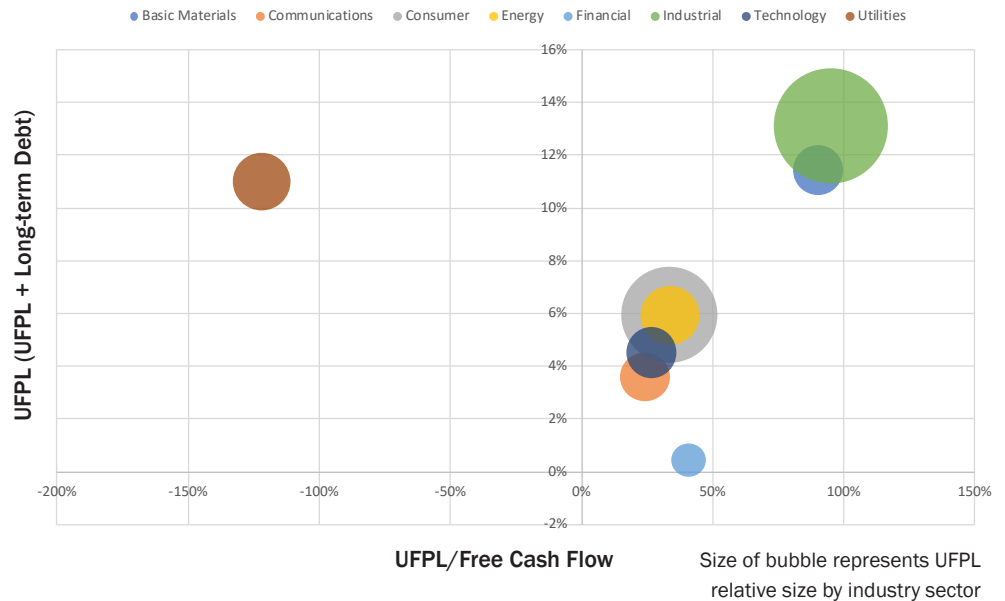
Asset Allocation Recent Shift Toward Fixed Income

Efforts by plan sponsors to reduce funded status volatility has led to the increased adoption of LDI strategies, and one result is the shift in asset allocation toward fixed income (see **Exhibit 12**). Equities were 39% of total plan assets in 2014 and decreased steadily to 30% in 2018; however, most of the shift out of equities was a move to asset classes other than fixed income. Conversely, fixed income securities remained relatively constant at 39% since 2014 and increased to 42% over the course of just the last year.

With interest rates at historical lows and concerns about funded status variability increasingly high, plan sponsors have come to favor lower UFPL volatility, but a marked shift from risk assets to hedging assets has yet to be seen. While the increase in the fixed income allocation is likely due to glidepath triggers being reached or plan contributions, a shift from equities more than likely reflects a change in investor risk preferences. Over the course of 2014-2018, a large part of the equity drawdown has been reinvested in alternatives and real assets, with smaller plans leading the charge with a more than 9% increase (see **Exhibit 13**).

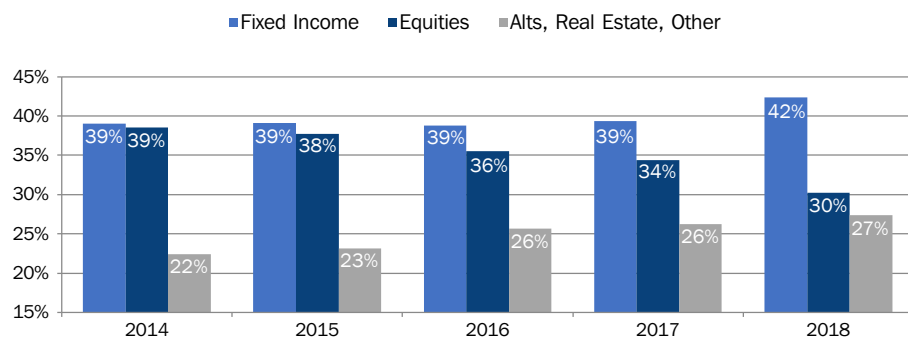
*A negative UFPL would imply a surplus of assets against liabilities.

Exhibit 11: 2018 Unfunded Pension Liability Impact by Plan Sector, Unadjusted for Negative Free Cash Flow



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Exhibit 12: Aggregate Asset Allocation, 2014 – 2018



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Smallest Plans Retain Highest Equity Allocation

Adopting LDI strategies has been a key approach to reducing UFPL/funded status volatility, and the effect is now just beginning to be seen in the shift away from equities toward fixed income in 2018. However, the shift has not been uniform, as **Exhibit 13** highlights. The largest companies in our data saw the highest increase in fixed income assets over the period and their portfolios also held the lowest percentage in equities (29.6%) at the end of 2018. The smallest plans retained the highest percentage of equities, at 35.6% in 2018; their generally lower funded status is a likely reason for this relative bias toward equities since equities could potentially generate growth to bridge their UFPL gap, albeit with potentially more volatility along the way.

Exhibit 13: Change (in %) in Asset Allocation by Plan Size, 2014 – 2018

	Fixed Income			Equities			Alts, Real Estate, Other		
	2014	2018	Change	2014	2018	Change	2014	2018	Change
\$10Bn	38.5%	43.4%	4.8%	37.8%	29.6%	-8.2%	23.6%	27.0%	3.4%
\$1Bn to \$9.99Bn	38.3%	40.6%	2.3%	39.0%	30.7%	-8.3%	22.8%	28.7%	6.0%
\$500M to \$999.99M	38.6%	42.7%	4.1%	39.1%	31.6%	-7.5%	22.3%	25.6%	3.4%
Less than \$500M	38.9%	40.3%	1.4%	46.2%	35.6%	-10.6%	14.9%	24.1%	9.2%

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Asset Allocation by Sector

As with plan size, there was significant variation among industry sectors when it came to changes in asset allocation. Again, the shift toward fixed income was noticeable (see **Exhibit 14**) in certain sectors.

By sector, at the end of 2018, all sectors except Communications and Utilities had at least 40% of their assets in fixed income. Only one sector, Technology, had more than half of its assets in fixed-income securities. As and when rates begin to meaningfully rise, it is expected that this trend to move out of risk assets and into hedging (fixed income) assets will be expected to continue at a more accelerated pace.

Exhibit 14: Change (in %) in Asset Allocation by Sector, 2014 – 2018

	Fixed Income			Equities			Alts, Real Estate, Other		
	2014	2018	Change	2014	2018	Change	2014	2018	Change
Basic Materials	36.6%	41.4%	4.7%	39.5%	31.2%	-8.3%	23.8%	27.4%	3.6%
Communications	38.9%	31.4%	-7.6%	39.1%	28.5%	-10.6%	22.0%	40.1%	18.1%
Consumer	38.0%	42.9%	4.9%	38.4%	30.9%	-7.6%	23.5%	26.2%	2.7%
Energy	43.2%	49.0%	5.8%	45.9%	31.8%	-14.1%	11.0%	19.3%	8.3%
Financial	36.8%	40.5%	3.7%	34.7%	30.1%	-4.6%	28.5%	29.4%	0.9%
Industrial	36.4%	43.4%	7.0%	39.4%	32.4%	-7.0%	24.2%	24.2%	0.0%
Technology	47.6%	54.6%	7.0%	36.2%	14.5%	-21.7%	16.3%	30.9%	14.7%
Utilities	36.2%	34.1%	-2.2%	39.0%	36.3%	-2.7%	24.7%	29.6%	4.9%

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Data and Methodology

The data in this annual review was reported in the 10-Ks of 658 publicly traded companies. These companies were selected because they had consistently filed pension data every year for the period 2014 – 2018. Changes in the composition of the companies in our annual review reflect M&A activity as well as incomplete filings for the five-year period.

We categorized these companies based on their plan assets and business sector (although some assets may be from non-U.S. pension plans). In aggregate, these 658 firms reported \$1.6 trillion in plan assets and \$1.9 trillion in plan liabilities.

It is important to note that asset definitions are not uniform. Conning's analysis of companies' financial statements finds that some firms only report individual stocks as equities, while others 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 not adjusted them.

About This Report

Conning's Annual Corporate Pension Review is a report analyzing the impact of pension plan funded status on companies' earnings and capital. We further analyze these metrics by plan size and corporate sectors to understand differences by business size and focus.

Our reports study a five-year period of company pension plan data, and our 2018 report database is comprised of 658 company pension plans that had financial data for 2014 through 2018. Any reference to pension liability values is assumed to be U.S. GAAP-based pension valuation.

About Conning and LDI

The cornerstone of Conning's LDI philosophy is disciplined pension risk management.

We believe that a robust LDI strategy should be designed to minimize the downside risk associated with a plan's funded status. Every plan should have a clear understanding of its risk appetite in order to develop a risk budget that reflects the considerations of that plan's various stakeholders, anticipated contribution amounts and where the plan may be in its de-risking glidepath.

As a result, we believe each plan requires a customized solution that addresses its unique needs.

About Conning

Conning (www.conning.com) is a leading investment management firm with approximately \$141 billion in global assets under management as of March 31, 2019.* With a long history of serving the insurance industry, Conning supports institutional investors, including pension plans, with investment solutions and asset management offerings, risk modeling software, and industry research. Founded in 1912, Conning has investment centers in Asia, Europe and North America.

*As of March 31, 2019, represents the combined global assets under management for the affiliated firms under Conning Holdings Limited, Cathay Securities Investment Trust Co., Ltd. ("SITE") and Global Evolution Fondsmæglerselskab A/S and its group of companies (the "Global Evolution Companies"). The Global Evolution Companies are affiliates of Conning. 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 controlled entities.

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