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Insights

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THE PENSION PLAN UNDERFUNDING DILEMMA: ANALYZING THE TRENDS

BY OWAIS RANA AND SCOTT HAWKINS

EXECUTIVE SUMMARY

The funding status of corporate defined benefit (DB) pension plans remains a subject of concern for many company officers and is not going away soon. Surprises requiring unexpected (and sometimes sizeable) contributions to pension plans can have a significant impact on a company's financial position. In recent years, more corporate officers have come to feel the pain of diverting cash from core business needs or from their shareholders to shore up employee pension plans.

Conning has examined U.S. corporate pension plan data from the past five years, in aggregate and by various segments, to help develop a clearer view of plan funding and to understand the impact of funded status on earnings and capital. While conditions differ somewhat by plan size and by industrial sector, companies on average are currently in a holding pattern:

- Plan assets may be increasing as capital markets improve, but liabilities are rising as well, as longer-term interest rates hold to near historical lows.
- Unfunded pension liabilities are more of a concern, however, as in 2016 they represented a greater portion of company net income, according to the data Conning studied, representing a greater potential drain on company financials.

Companies hoping for improvement in plan funding status may have to take more active measures, as it will likely require more refining of investment strategies to generate meaningful improvements. De-risking efforts appear to be on the upswing, as evidenced by plans reducing equity exposure and seeking to better match assets to liabilities. However, these efforts exacerbate the stress on companies looking to improve their positions, as demand for longer-term bonds to meet longer-term liabilities may increase and further raise those bond prices. Meanwhile, about half of the plans we looked at reported funding levels of less than 80%, indicating that they will likely require contributions in the near future to improve funding. In addition, with PBGC premiums on the rise, companies will want to maintain a certain level of funded status to manage those premium costs better. We expect the demand to better match plan assets to liabilities will continue to grow over time.

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In the meantime, companies will be managing a delicate balance: a variety of factors could cause a minor slip in plan funding levels, requiring company dollars to go toward additional pension plan contributions and away from other important business needs, causing further pain in the board room.

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A DATA-DRIVEN MODEL FROM CORPORATE 10Ks

Conning sought to develop a data-driven understanding of corporate pension plan metrics by going right to the source. We gathered the 10K reports of publicly traded companies within the Russell 3000 index with defined benefit pension plans and focused on the 389 that consistently provided pension data from 2012 through 2016.

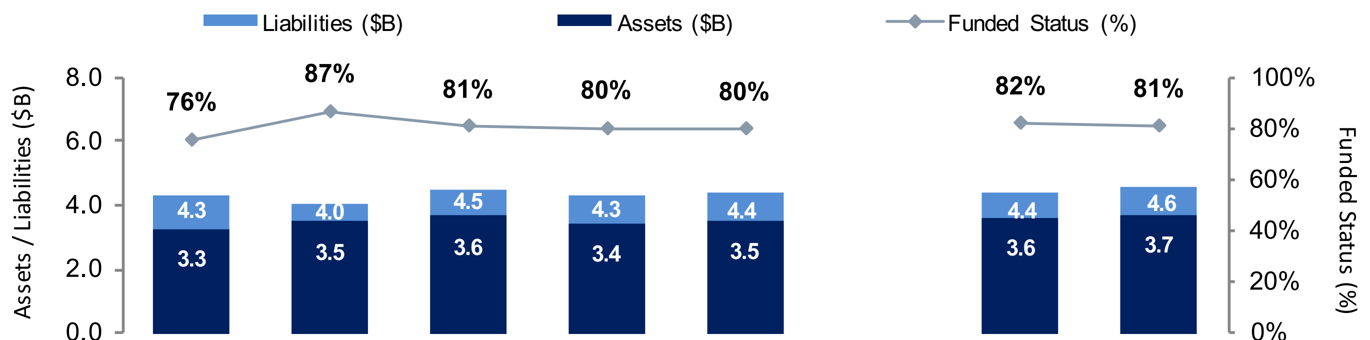
From this data, we created a profile of an "average" DB plan, or at least average for this group. We were also able to observe how assets, asset allocation, liabilities, and funded status had evolved. Additionally, the 10K data allowed us to further segregate annual performance by plan size and industry sector.

This average plan model has also given us a benchmark to project how we think assets, liabilities, discount rates, and funded status have progressed through June 30 of this year. While year-end 2017 data will verify plans' actual experience, we think the projections offer a reasonable look at the issues sponsors are currently facing.

"AVERAGE" RESULTS: HOLDING STEADY

Conning's analysis of our average plan found that total pension liabilities increased faster than assets in 2016 compared to 2015, and our projected performance through June 2017 indicated little change in funded status (see Exhibit 1). Overall funded status as of midyear is projected to remain relatively flat at 81%, although it is improved from the 76% measured in 2012.

Exhibit 1: **Pension Plan Tracker**



Pension Plan	2012	2013	2014	2015	2016		Mar 17	Jun 17
Funded Status†	76%	87%	81%	80%	80%		82%	81%
Assets ($B)	3.3	3.5	3.7	3.4	3.5		3.6	3.7
Liabilities / PBO ($B)†	4.3	4.0	4.5	4.3	4.4		4.4	4.6
Discount Rate (GAAP)	3.7%	4.6%	3.7%	4.1%	3.9%		3.9%	3.7%

Prepared by Conning, Inc. Source: ©2012-2017 Bloomberg L.P. FY numbers – Dec. 31 data - actual.
† see disclosure for 2017 data.

Driving the faster growth in pension liabilities in 2016 was the continued decrease in the accounting discount rates, which reached their lowest level in the five-year period of our analysis. Through June 30, our projections indicate that the rate is down to 3.7%. The reduction is mainly driven by the ongoing credit-spread compression, even though underlying U.S. Treasury rates since November 2016 have been marginally higher. At the time of print (September 2017), the 30-year Treasury and corporate discount rate had fallen even further.

In dollar terms, unfunded pension liabilities were $408 billion in 2012, fell to $204 billion in 2013, and have since risen to $346 billion through 2016. Sponsors increased plan contributions by 31% in 2016 over 2015, ending a trend that began in 2013 of lower contributions versus the prior year. Among the plans in Conning's database, 181 increased 2016 contributions, 151 decreased contributions, 16 maintained their contributions, and 40 made no contributions.

UNFUNDED LIABILITIES HIGHER VERSUS NET INCOME

Sponsors are required to close the gap in unfunded pension liabilities (UFPL) and, to do so, rely on some combination of improved investment returns, increases in long-dated yield, and plan contributions. As a result, those liabilities represent a potential demand on a company's net income. UFPL is also viewed as unsecured senior debt by lenders and rating agencies, and increases in UFPL can affect credit ratings, leading to higher costs of capital.

To evaluate the potential impact of UFPL, Conning measures it against net income and the combination of UFPL and long-term debt. In 2016, the $346 billion in UFPL represented 73% of the combined net income for the companies in our database, up from 68% in 2015. The major driver was a decrease in net income, as 167 companies reported lower net income in 2016. Of these companies, 100 reported both lower net income and higher UFPL in 2016 than in 2015.

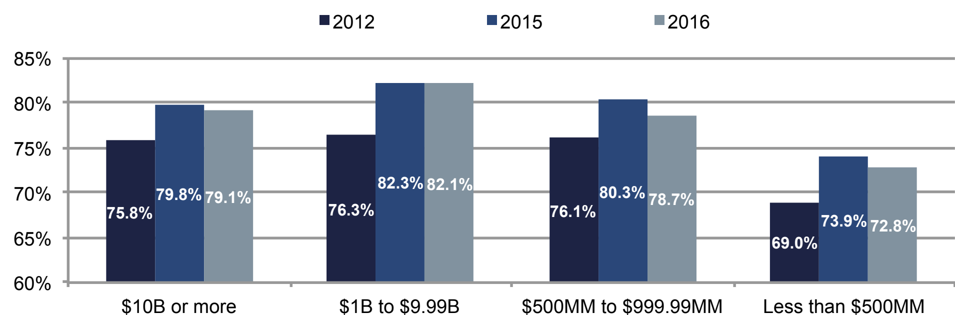
The UFPL ratio was essentially unchanged relative to the overall long-term debt of the companies in 2016, however, holding steady at 8.2%, but long-term debt at the companies rose 5% in 2016, similar to the rise in UFPL.

LARGER PLANS HAVE MORE EXPOSURE TO CONTRIBUTION "SURPRISES"

There was a noticeable difference in funding-level changes among plans of different sizes, however.

Smaller plans reported lower funded status in 2016 compared to 2015, while larger plans were roughly unchanged. When viewed against 2012, though, there were noticeable improvements across all size categories (see Exhibit 2). Those most affected: plans with $500 million to $999 million in assets experienced a funded-status decrease of 1.6% in 2016 from 2015. The smallest plans, those with less than $500 million in assets, had a 1.1% decrease in 2016.

Exhibit 2: **Funding Status By Asset Size**



Prepared by Conning, Inc. Source: ©2012-2016 Bloomberg L.P. The selected years 2012, 2015 and 2016 as shown above are representative of past performance over this period. Omitted years are in line with the years shown.

One factor contributing to the larger decrease in funded status by the smaller plans is that their discount rates decreased more than the larger plans (see Exhibit 3). Plans with $500 million to $999 million had the largest decrease of 23 basis points, while plans with less than $500 million had a 17-basis-point decrease. The very largest plans, with $10 billion or more in assets, reported a 2-basis-point decrease in the discount rate.

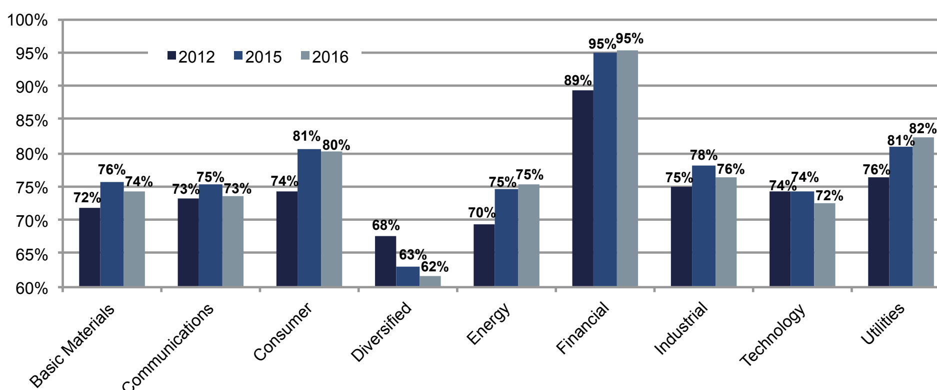
The larger concern for corporate officers is how much of a potential difference their plans will experience year to year in their UFPL, possibly requiring them to make unexpected (and potentially significant) contributions to their plans. We looked at the ranges of UFPL versus net income over our five-year period and discovered that plans with less than $500 million had the tightest range of UFPL exposure (17% to 53% of net income), while the largest plans had the widest range (44% to 100% of net income). The comparison of UFPL to UFPL-plus-long-term-debt proved similar. So, the larger the plan, the greater the impact a surprise contribution would likely have.

Exhibit 3: **Discount Rates by Plan Size**

Plan Size	2012	2015	2016
$10B or more	4.3%	4.2%	4.2%
$1B to $9.99B	4.3%	4.1%	4.0%
$500M to $999.99M	4.2%	4.2%	4.0%
Less than $500M	4.3%	4.0%	3.8%

Prepared by Conning, Inc. Source: ©2012-2016 Bloomberg L.P. The selected years 2012, 2015 and 2016 as shown above are representative of past performance over this period. Omitted years are in-line with the years shown.

Exhibit 4: **Funding Status by Sector**



Prepared by Conning, Inc. Source: ©2012-2016 Bloomberg L.P. The selected years 2012, 2015 and 2016 as shown above are representative of past performance over this period. Omitted years are in-line with the years shown.

RESULTS VARY BY INDUSTRY

There are nine industry sectors represented among the plans in Conning's database, and their pension plans had significant variations in funded status and discount rates, as can be seen in Exhibit 4. (The number of companies within each sector varies, from two in diversified to 121 in consumer.)

The industrial and consumer sectors had the largest share of DB pension obligations (32% and 31%, respectively). Their dominance likely reflects the presence of large, long-established companies such as GM, GE, and Procter & Gamble. All the sectors but diversified and technology reported funding status increases between 2012 and 2016.

Discount rates for the nine sectors ranged from 2.96% for technology to 5.04% for diversified. Energy and utilities actually experienced an increase in their average discount rate, by 4 and 12 basis points, respectively, during that period. Among the sectors experiencing a decrease, financials had the lowest at only 6 basis points.

The sectors also had a wide variation in the impact of UFPL on net income and long-term debt, as well as the change in those ratios during the five-year study period. The financial sector had the tightest range (0%-18%), meaning those companies could expect the least significant surprise contributions to their pension plans. The communications sector had the widest range.

INCREASING FIXED INCOME ALLOCATIONS

Efforts by plan sponsors to reduce funding-level variability have led many to adopt liability-driven investing (LDI) strategies, and one effect is the continued shift in asset allocations toward fixed income. Equities, 41% of the total plan assets of the companies in our database in 2013, decreased steadily to 37% in 2016, while fixed income securities increased from 35% to 40% during the same period (see Exhibit 5). While interest rates remained low during this period, funded status variability concerns stayed high and plan sponsors traded away potentially higher equity returns for lower volatility to enhance their pension risk-management focus.

The effect of implementing LDI strategies is seen in the shift away from equities and toward fixed income, regardless of plan size, although the shift has not been uniform (see Exhibit 6). The smallest plans experienced the largest increase in fixed income assets, yet those smaller plans still retained the highest equity allocations, at 43%, in 2016. The generally lower funding status of the smaller plans is a likely reason for the higher percentage of equities because those assets could potentially generate higher growth.

Exhibit 5: **Aggregate Asset Allocation**

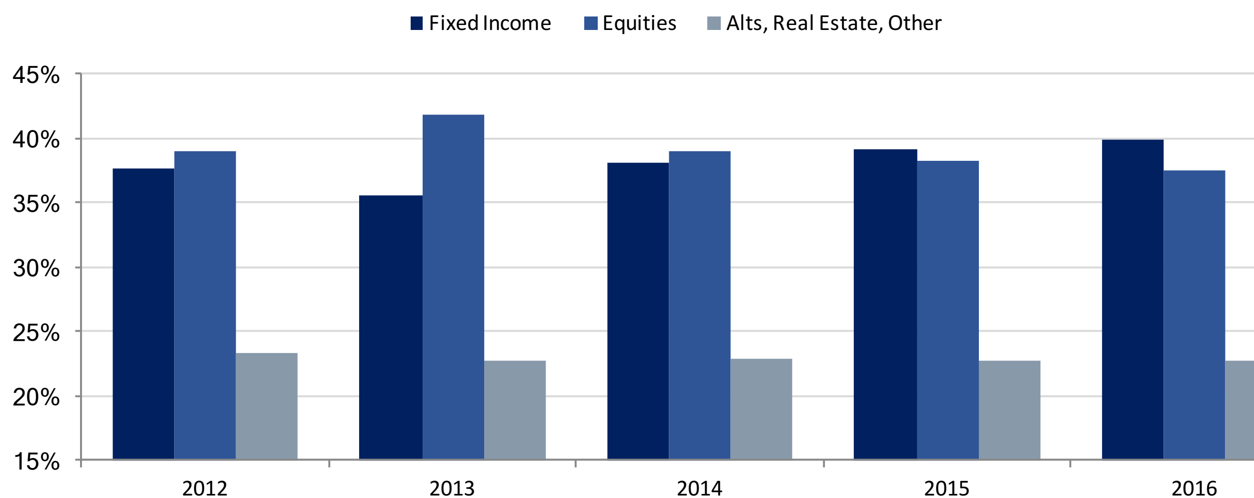


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Exhibit 6: **Change in Asset Allocation by Plan Size**

Plan Size	Fixed Income	Equities	Alts, Real Estate, Other
$10B or more	2.8%	1.1%	-3.9%
$1B to $9.99B	0.0%	-6.4%	6.4%
$500M to $999.99M	6.9%	-8.0%	1.1%
Less than $500M	4.5%	-5.5%	1.0%

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As with plan size, there was a significant variation in the change in asset allocation among the sectors. Again, the shift toward fixed income was noticeable, except for the technology and utilities sectors, which experienced a decrease in fixed income allocations. This decrease was offset by increases in allocations to alternatives, real estate, and other assets (see Exhibit 7).

At the end of 2016, three sectors had more than 40% of their assets in fixed income: communication, energy, and industrials. The consumer and industrial sectors also had 7% dedicated to alternative assets.

A NEED FOR GROWTH

While the averages presented in our data help clarify many points, an obvious point from the pure numbers is that many pension plans may be poorly funded.

Nearly 200 of the 389 plans we studied have a funding status of less than 80% (see Exhibit 8). Regardless of size or industry, these are plans in need of significant asset growth and contributions.

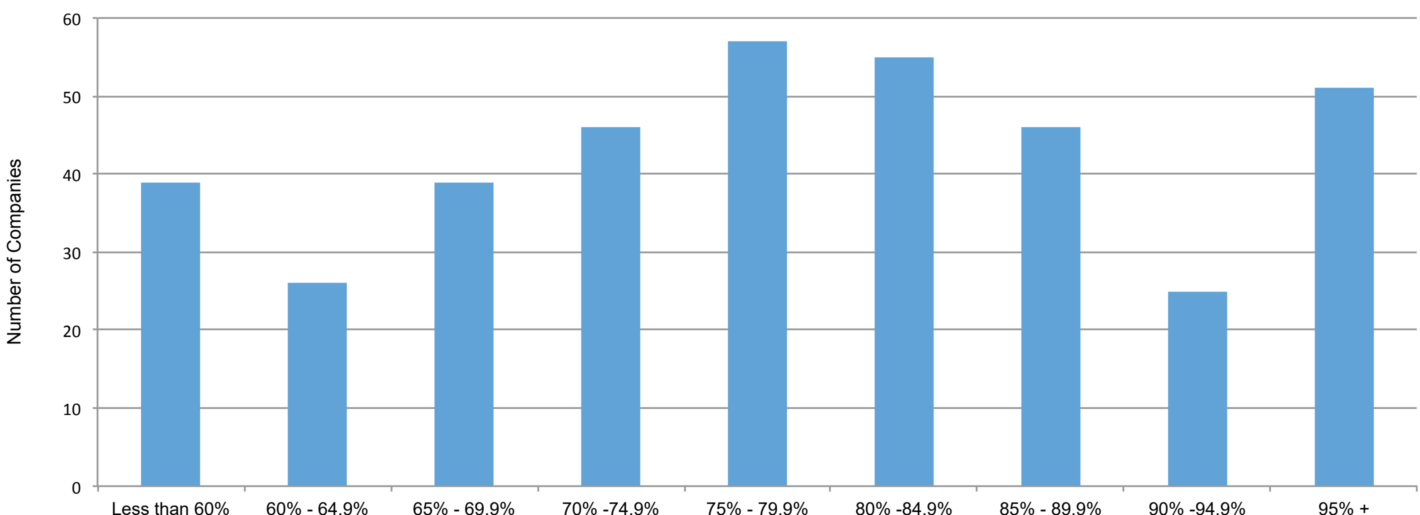
Building a growth portfolio to reach a designated funding status, however, is no less a strategic process. Executing a strategy to reach a funding target may take longer for these sponsors than for those in better funded plans, but it requires the same level of discipline.

Exhibit 7: **Change in Asset Allocation by Sector (2012–2016)**

Sectors	Fixed Income	Equities	Alts, Real Estate, Other
Basic Materials	3.8%	0.8%	-4.6%
Communications	1.4%	-3.1%	1.7%
Consumer	1.9%	-1.4%	-0.4%
Diversified	22.6%	22.1%	-44.7%
Energy	1.7%	-8.4%	6.8%
Financial	0.2%	2.4%	-2.7%
Industrial	4.4%	-1.0%	-3.4%
Technology	-9.0%	-7.0%	16.0%
Utilities	-1.7%	-1.1%	2.8%

Prepared by Conning, Inc. Source: ©2012-2016 Bloomberg L.P.

Exhibit 8: **DB Plans by Funding Status**



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

CONCLUSION

Corporate officers have been increasingly interested in the funding status of their DB pension plans because unexpected contributions required by the plan have had an impact on their companies' bottom line. Our study of corporate data has helped shed light on the companies and plans that have been more vulnerable to these surprise contribution requirements.

Avoiding these surprises is the real goal, however, and it appears plans need to take more significant steps to improve their funding levels and better match plan assets to liabilities or offload them to an insurer at a premium. In response, it appears that more plans are beginning to look at methods such as LDI strategies to address these concerns. Plans in the aggregate seem to be taking smaller, but nonetheless noticeable, steps toward reducing equity exposures and increasing fixed income allocations. As more plans pursue LDI strategies that tend to leverage more long-term fixed income assets, sponsors may find that the price of the assets they need is increasing with the corresponding jump in demand.

We also note, however, that there are still many plans with significant funding issues (i.e., plan funded status less than 80%). These plans, in addition to making contributions, may also need to pursue more aggressive growth strategies initially, then later refine their asset allocations to begin matching assets and liabilities once their funded status improves. Overall, having a well-designed de-risking glidepath is critical to the success of capturing improvement in funded status.

In any case, the guidance of experienced LDI experts may be able to help plans improve their funding levels and help reduce the volatility along the path toward their funding goals.

ABOUT CONNING

Conning (www.conning.com) is a leading global investment management firm with more than $115 billion in global assets under management as of June 30, 2017.* 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 offices in Boston, Cologne, Hartford, Hong Kong, London, New York, and Tokyo.

**As of June 30, 2017, 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.*

Data and Methodology

The data in this quarterly review was reported in the 10-Ks of 389 publicly traded companies. These companies were selected because they had consistently filed pension data every year for the period of 2012 through 2016.

We categorized these companies based on their plan assets and their business sector. Note, those assets may include non-U.S. pension plans. In aggregate, these 389 reported $1.4 trillion in plan assets and $1.7 trillion in plan liabilities.

It is 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 not adjusted them.

Funded status is the percentage of liabilities that are covered by assets. Interest rate hedge ratio is the dollar duration of assets as a percentage of liability dollar duration.

†LDI Hypothetical Model Disclosures

The proprietary model analysis presented herein is for illustrative purposes only. The model relies on a number of assumptions that are generally stated in the Data and Methodology and within the illustrations. The assumptions can be subject to significant uncertainties and contingencies, and such illustrations may change materially in response to small changes in one or more of such assumptions. The data used for this model was obtained from sources deemed reliable, and then organized by Conning, Inc, and was not audited by any third party. Errors could have occurred in the data, in the calculations, or in the preparation of this analysis. Therefore, information contained in this analysis may not be precise.

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In addition to this report, Conning's LDI Team produces quarterly reports to track pension funding trends throughout the year.

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