Utility Industry Benchmarking Report

Financial Management of Retirement Programs in the Utility Industry

June 2018

AON
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The sources of the information presented are S&P Capital IQ, company 10-k filings, and Aon

Executive Summary

Our research finds that the utility industry[1] continues to sponsor retirement programs with significant, material, and growing obligations. Substantial variation exists in the management of these programs across all the key levers—funding, investment, design, liability management, and actuarial assumptions and methods. The key findings of this report are summarized below.

Fiscal 2017 Financial Position of Pension Plans

A study of the financial position of the pension plans sponsored by the utility industry as reported in 2017 financial statements elicited the following key observations:

- The 2017 year-end funded ratio was 88.8% for the utility industry compared to 83.7% for other S&P 500 companies.
- The average funded ratio for the utility industry has declined 15% over the past 10 years.
  - This decline was driven by underperforming assets, lower discount rates, longer life expectancies, and ongoing benefit accruals.
  - Significant employer contributions helped mitigate these factors.
- Liabilities are expected to grow faster than assets for 30% of utilities if no contributions are made or any other actions are taken.
  - This is a significant decrease from last year's figure of 62%, primarily due to the combination of declining interest rates and improved funded status.

Pension Liabilities: Trends and Benchmarking

We also studied the growth and materiality of pension liabilities in the utility industry:

- Over the past decade, the utility industry's pension liability has increased by more than 86%, which is nearly twice as much as the growth in pension liabilities experienced by the S&P 500 companies.
- As of December 31, 2017, pension liabilities amounted to approximately 30% of the market capitalization of the underlying plan sponsors.
- The ratio of unfunded pension liabilities relative to market capitalization declined in 2017 but has doubled (from 2% to 4%) for the utility industry since 2007.

Pension Investments: Trends and Benchmarking

Pension investments, the other side of the pension balance sheet, were examined as well:

- Asset allocation strategies have changed meaningfully over the past decade, manifested primarily as a shift away from public equities and toward fixed income and alternative investments.
- Significant variation exists within the utility industry, with nine of the 27 companies studied targeting fixed income allocations of less than 35% and eight of the 27 with allocations in excess of 55%.

[1] In this report, "utility industry" refers to S&P 500 electric and gas utilities as summarized on page 3, unless otherwise noted.

The sources of the information presented are S&P Capital IQ, company 10-k filings, and Aon

- While glide path adoption has been prevalent in general industry, there is little evidence to suggest the utility industry is actively de-risking based on funded status triggers, although 2018 may prove a better litmus test.

Pension Funding: Trends and Benchmarking

Other than investment returns on current assets, the main source for asset growth is cash contributions to the plan. The following themes emerged from our study of the historical patterns:

- Since the financial crisis of 2008, the utility industry has made contributions of $42.7 billion, nearly double its benefit accruals ($24.1 billion) over the same period.
- These cash contributions have helped improve the pension deficit in dollar terms since 2008—decreasing the deficit from $26.6 billion to $21.7 billion. During that same time period, the funded status percentage improved from 74% to 89%.
- It also appears the utility industry has made greater use of available post-2008 funding relief measures, since it contributed less (as a percentage of assets) than the average S&P 500 company.

Actuarial Assumptions and Methods

Actuarial assumptions are an important driver of the level, volatility, and trends observed in retirement benefit costs. In reviewing the assumptions disclosed in financial statements, we noted the following:

- Discount rates declined 40 basis points from the prior year, reaching historic lows with an average discount rate of 3.7% for the utility industry.
- Expected return on asset (EROA) assumptions have fallen due to lower capital market assumptions and a shift for some companies into more fixed income assets. For the second year in a row, nearly half of utility plan sponsors lowered their EROA assumption. Over the last 10 years, the average EROA assumption for the utility industry has decreased approximately 130 basis points, from 8.4% in 2008 to 7.1% in 2017.
- Approximately 35% of S&P 500 utilities companies have adopted the spot rate approach. While there are potential rate recovery implications, the observed level of adoption in the utility industry is generally consistent with the broader S&P 500 market.

Postretirement Health and Welfare Program Financing

Utilities also sponsor health and welfare programs with material obligations:

- The utility industry's retiree health and welfare obligations overall are about one-fifth the size of its pension obligations, but are still substantial.
- These obligations are relatively well funded compared to general industry, with an average funded status of 75%.
- Utilities have managed the growth in these obligations in part by making significant plan design changes.

The purpose of this report is to analyze and discuss the data that was observed in company financial statements and other public sources. General industry trends were observed and associated commentary provided. In certain cases, what appear to be outlier positions may be explained by circumstances specific to an organization or the jurisdiction in which it operates.

The sources of the information presented are S&P Capital IQ, company 10-k filings, and Aon

About This Report

In this report, we present data that compares utility companies to each other and to general industry, including observations on trends within the utility industry over time. The focus of this report is on the financial management of retirement programs within the utility industry. This report is intended to be a complement to our March 2018 report, which focused on retirement plan design within the utility industry.

Details on Employers Included

The utility companies represented in this report include those that are in the S&P 500. These 27 companies range in size from 4,000 to 35,000 employees with an average employee population of 13,000.

NYSE Code	Company Name
AES	AES Corporation
LNT	Alliant Energy Corporation
AEE	Ameren Corporation
AEP	American Electric Power Company, Inc.
CNP	CenterPoint Energy, Inc.
CMS	CMS Energy Corp.
ED	Consolidated Edison, Inc.
D	Dominion Energy
DTE	DTE Energy Company
DUK	Duke Energy Corporation
EIX	Edison International
ETR	Entergy Corporation
ES	Eversource Energy
EXC	Exelon Corporation
FE	FirstEnergy Corporation
NEE	NextEra Energy, Inc.
NI	NiSource Inc.
NRG	NRG Energy, Inc.
PCG	PG&E Corporation
PNW	Pinnacle West Capital Corporation
PPL	PPL Corporation
PEG	Public Service Enterprise Group Inc.
SCG	SCANA Corporation
SRE	Sempra Energy
SO	Southern Company
WEC	WEC Energy Group Inc.
XEL	Xcel Energy Inc.

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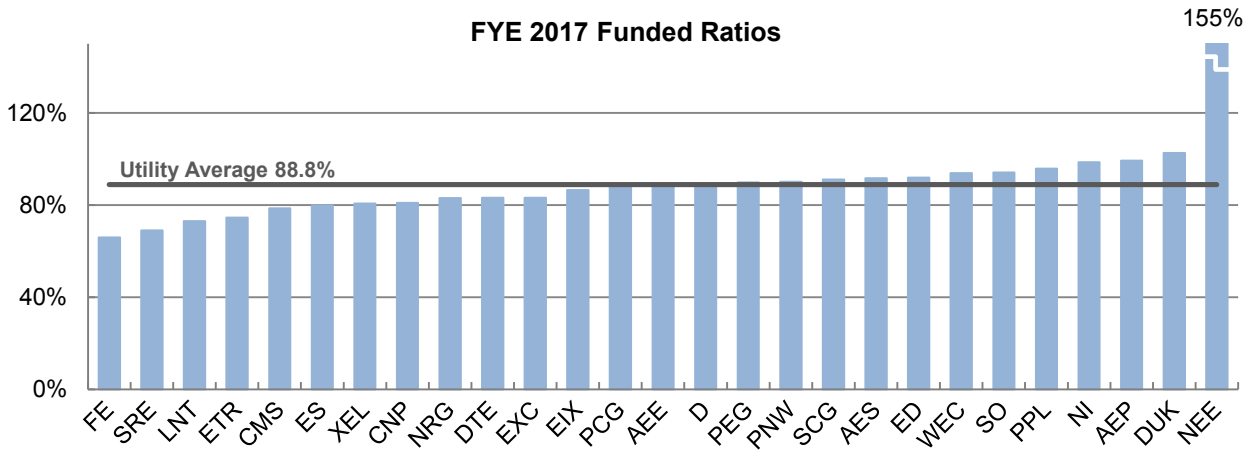
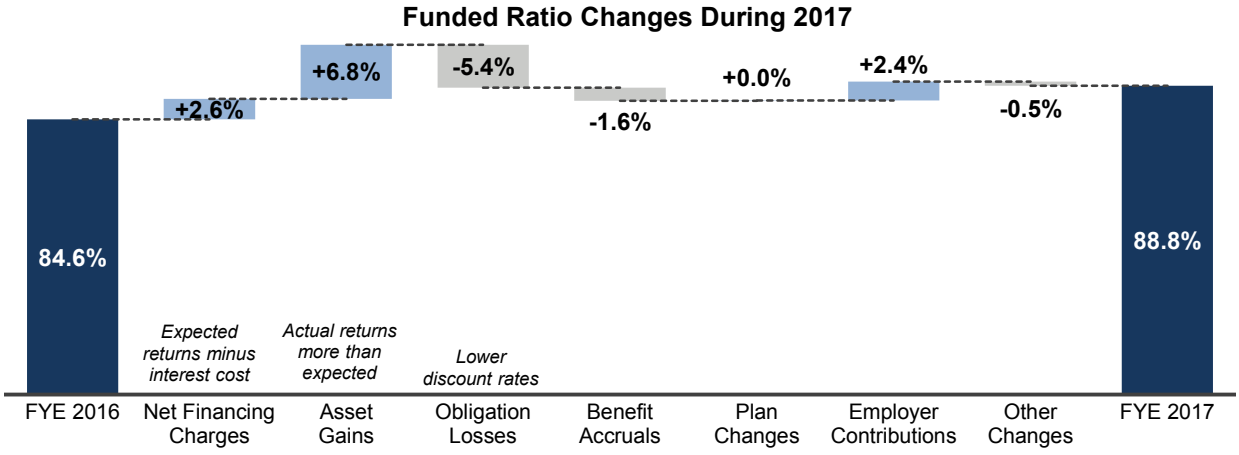
Fiscal 2017 Financial Position of Pension Plans

2017 Pension Funded Ratios

The average year-end 2017 funded ratio for the utility industry, including qualified **and** nonqualified benefits, is 88.8%. This compares favorably to the average funded ratio for the S&P 500 of 83.7%, especially when considering that most utilities are still providing many of their employees ongoing defined benefit accruals. Furthermore, only two utilities (7%) have funded ratios that are less than 70%, compared to 18% of the S&P 500. The chart below shows the funded ratio for each utility.

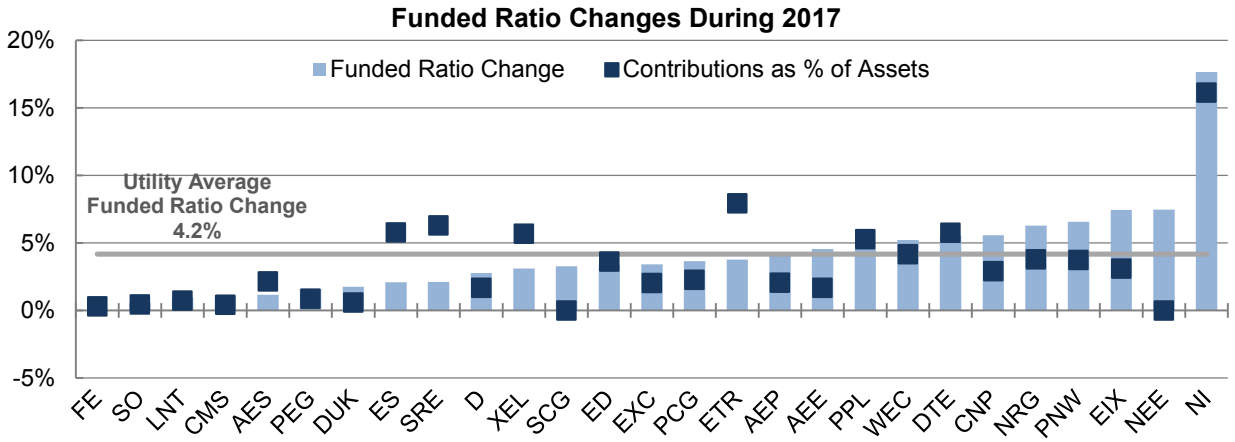


During 2017, the funded ratios for utilities improved 4.2%, compared to an increase of 4.4% for the S&P 500. The improvements were largely driven by favorable investment returns and employer contributions, offset by obligation increases created by lower discount rates. The chart below shows more detail on how the utility industry's funded ratio changed during the prior year.



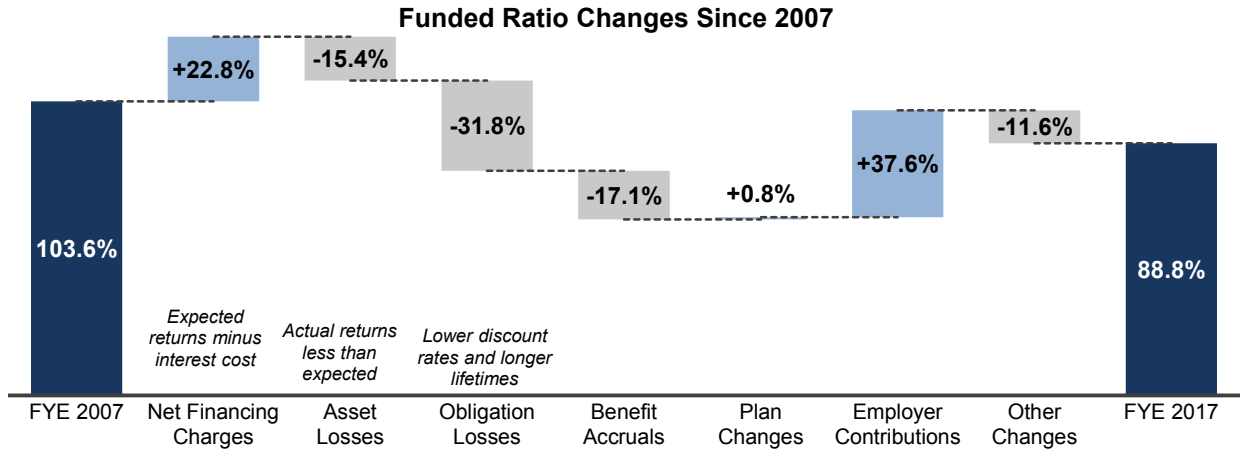
The sources of the information presented are S&P Capital IQ, company 10-k filings, and Aon

The chart below shows the change in funded ratio for each utility during 2017; there was considerable variability within the group. Some of this variability is driven by differences in funding during the year, as can be seen by the employer contributions (as a percentage of plan assets) depicted in the chart.



Looking Back Over the Last 10 Years

Ten years ago, the average year-end funded ratio for the utility industry was 103.6%, about 15% higher than the current average of 88.8%. The chart below shows how the industry's funded ratio has changed over the past 10 years.



Asset returns underperformed expectations during this period. The 2008 financial crisis resulted in significant asset losses, and the recovery that followed has not been strong enough to offset those initial losses. Overall, while actual asset returns during the 10-year period exceeded interest on the obligations (as measured by the combined impacts of net financing charges and asset losses in the above graph), asset returns did lag expectations.

Obligation losses can be attributed to two main factors: lower discount rates and longer life expectancies. The average discount rate for utilities has declined 260 basis points over the last 10 years (3.7% at year-

The sources of the information presented are S&P Capital IQ, company 10-k filings, and Aon

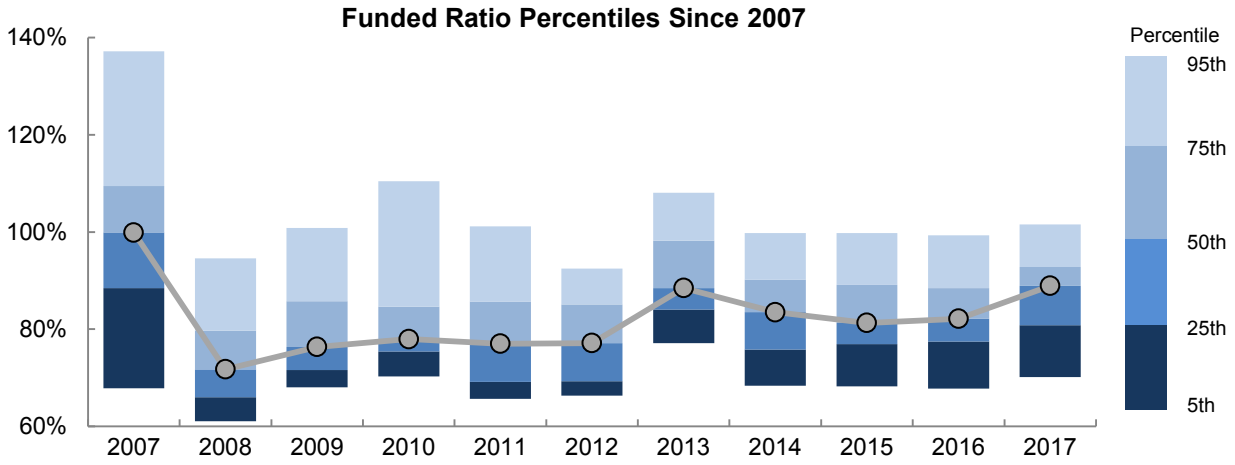
end 2017 versus 6.3% at year-end 2007). In addition, most companies did not reflect any mortality improvement in benefit obligations 10 years ago. As a result, benefit obligation losses occurred when assumptions were updated to reflect mortality improvements and the adoption of the new base mortality table that was published in 2014.

In contrast to the S&P 500, the utility industry has maintained a high level of ongoing benefit accruals. Although there have been numerous plan design changes over the years, they have not yet resulted in a significant reduction in overall benefit accruals. During 2017, benefit accruals represented 2.0% of benefit obligations, compared to 2.1% 10 years ago.

Utilities made significant contributions to their pension plans during the past 10 years to help offset otherwise declining funded ratios. Other changes have consisted primarily of the impact of acquisitions, benefit payments, and currency exchange rates for foreign pensions.

Funded Ratio Variance

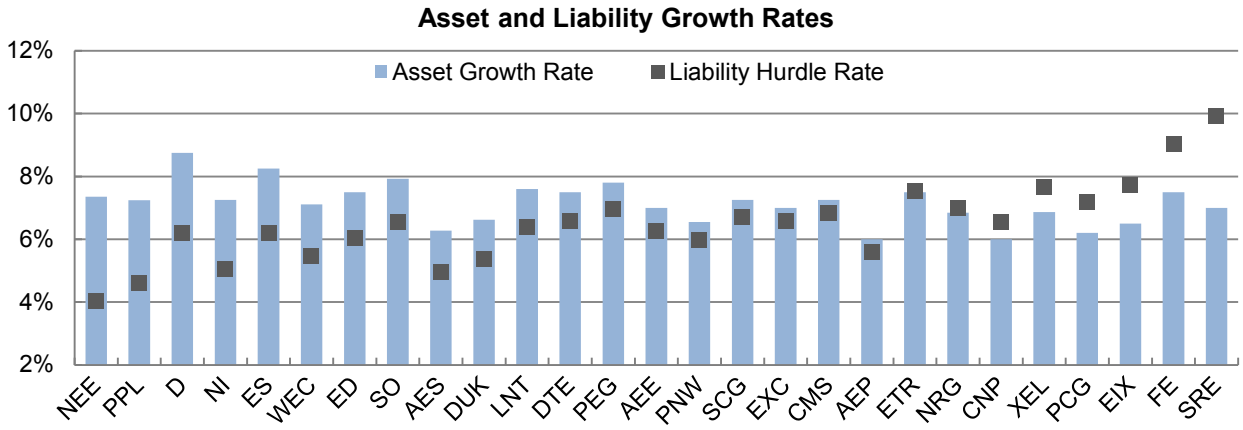
There is less variance in funded ratios across the utility industry today than there was 10 years ago. The following chart shows how the distribution of funded ratios among utilities has changed over time. This change can be attributed to two primary factors. First, the 2008 asset losses had a more meaningful impact on the higher-funded plans. Second, the Pension Protection Act of 2006 increased the funding requirements for the lower-funded plans.



The sources of the information presented are S&P Capital IQ, company 10-k filings, and Aon

Looking Ahead

If changing market conditions and other unknown events are taken out of consideration, potential future changes to funded ratios can be anticipated by comparing asset and liability growth rates. For this purpose, the asset growth rate is the long-term expected rate of return and the liability growth rate (hurdle rate) is annual benefit accruals plus interest on obligations, both stated as a percentage of plan assets. The chart below shows these two measures for each utility.



Funded ratio improvements are expected for those companies with asset growth rates that exceed the liability hurdle rate. Meanwhile, those with a liability hurdle rate that exceeds the asset growth rate need to make contributions or take other actions to maintain or improve their funded ratios.

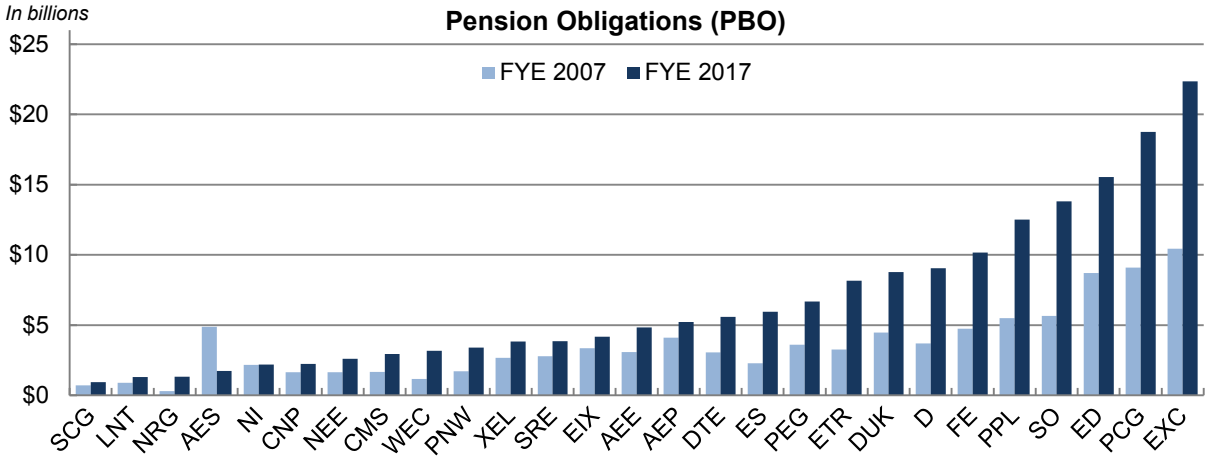
The sources of the information presented are S&P Capital IQ, company 10-k filings, and Aon

Pension Liabilities: Trends and Benchmarking

Pension benefit obligations (PBOs) are often a large liability on the balance sheet of many plan sponsors in the utility industry. As such, they tend to receive a lot of attention from board members, shareholders, and other financial stakeholders. With most utility companies still offering open defined benefit pensions, the expectation is that the attention given to the liability side of the balance sheet will continue in the future.

Trends in Obligation Changes

Over the past decade, utility industry pension benefit obligations have increased by more than 86%, from $97 billion to $181 billion. Over the same time period, S&P 500 pension benefit obligations grew by nearly 60%, from $1.4 trillion to $2.2 trillion—meaning that the utility industry now accounts for about 8.5% of the projected benefit obligation of the entire S&P 500. Some of the reasons for this significant growth are lower discount rates in 2017 than in 2007, longer life expectancies, merger and acquisition activity, and generous ongoing benefit accruals in the utility industry.



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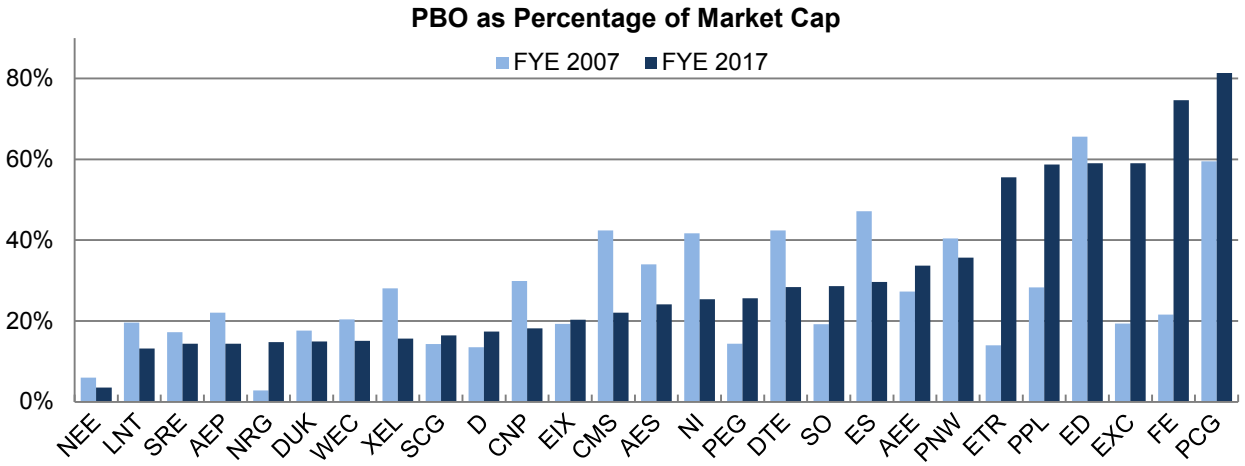
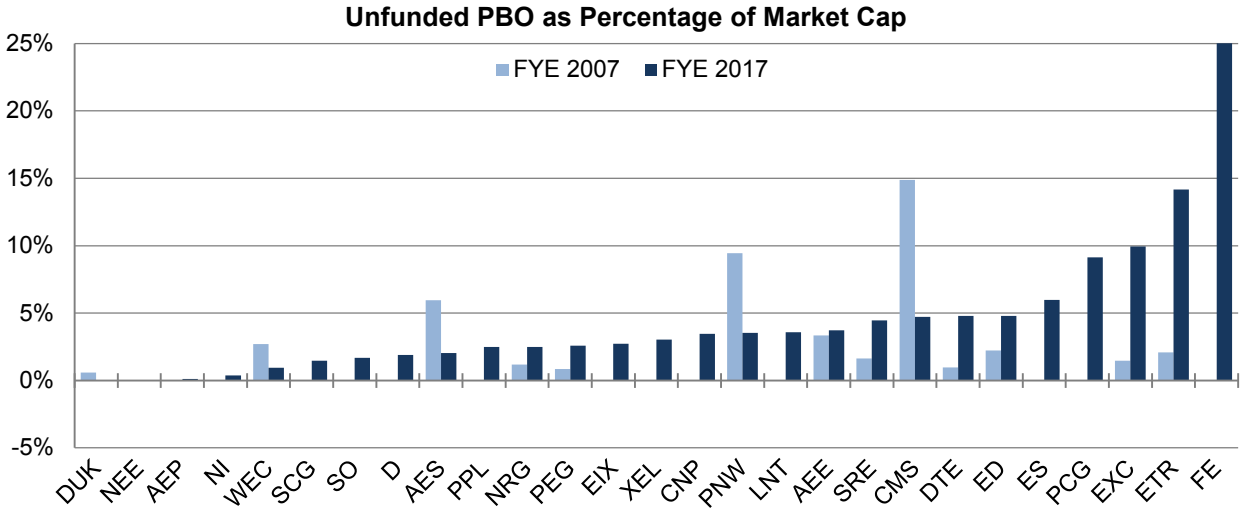
Materiality of Pension Benefit Obligations

As of December 31, 2017, pension benefit obligations amounted to approximately 30% of the market capitalization of the underlying plan sponsors. This compares to an average of 9% for all S&P 500 companies, and 13% when considering only those S&P 500 companies reporting defined benefit obligations.

Over the last 10 years, the materiality of pension obligations for the utility industry grew by 3%, from 27% in 2007. We have already commented on the more significant growth in the obligations themselves. Of course, the market values of the plan sponsor companies have also increased in the aggregate—although here we see quite a disparity in terms of the change observed over the past decade.



At the same time, the average ratio of unfunded PBO relative to market capitalization has doubled for the utility industry, from 2% to 4% over the 10-year period ending in 2017, with some degree of consistency across the industry.



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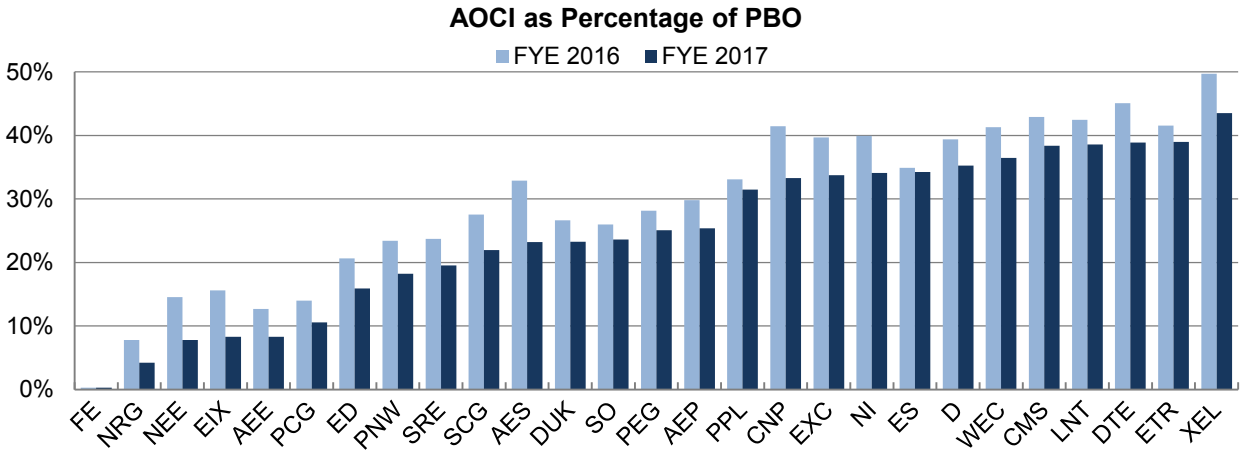
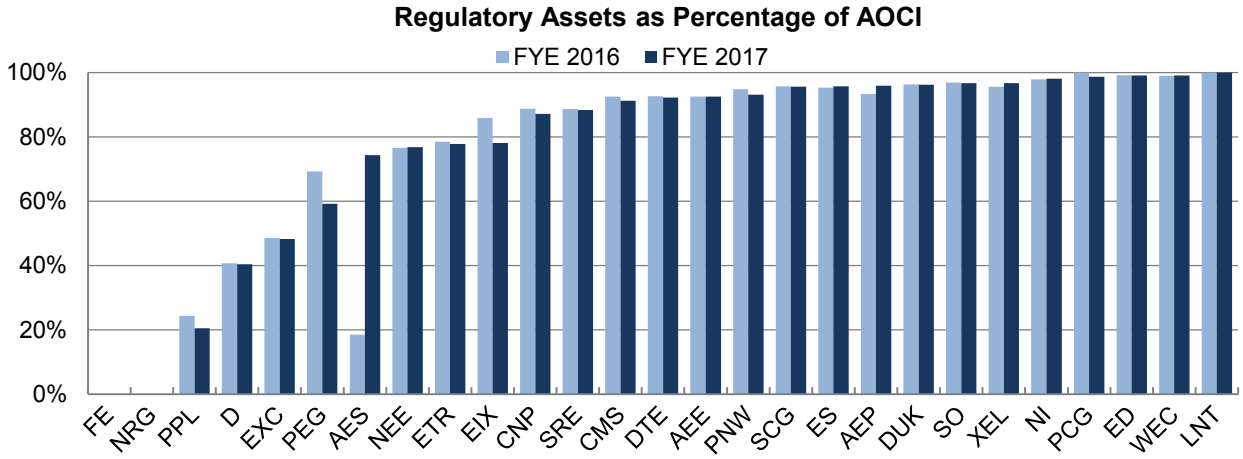
Regulatory Asset Treatment

When pension plans incur gains or losses due to demographic or economic experience not accounted for by the assumptions, the losses create (gains reduce) a liability for the plan that is not immediately expensed. Instead, it is typically recorded as accumulated other comprehensive income (AOCI) with the general expectation that these gains or losses will be reflected in pension expense in later years. As shown in the following chart, many pension plans have a large portion of deferred losses in AOCI compared to the amount of their pension liability. This percentage has decreased slightly from 2016.



Since pension expense is normally included as a cost of service in the rate-making process, utility companies generally recover pension costs through rates charged to customers. As a result, a regulatory asset is created (reduced) for these losses (gains) that the company is expected to recover through future rates. The chart below depicts the percentage of AOCI associated with pension benefits that are covered by a regulatory asset. In general, companies that are primarily regulated have a very high AOCI percentage, while companies with significant international or nonregulated businesses are expected to recover a lesser portion of AOCI in future years.



The sources of the information presented are S&P Capital IQ, company 10-k filings, and Aon

For most plan sponsors, the portion of AOCI considered as a regulatory asset has stayed constant from the prior year.[2]

Looking Ahead

As mentioned in our benchmarking report published in December 2017, 12 of the 27 utilities have closed their defined benefit plans to new entrants—a trend we expect will continue. All of the remaining 15 companies that still offer defined benefit plans to new entrants provide the defined benefit via a cash balance design rather than the generally more expensive final average pay design. Therefore, we expect the future growth of obligations to be smaller than what we have seen in the past 10 years.

While many utilities have reported lump-sum windows for vested terminated participants, obligations have not been significantly reduced. Other de-risking actions that have been widely adopted across general industry, such as purchasing annuity contracts from an insurer, have seen far lower levels of interest from the utility industry. This is not unexpected, since the rate recovery process may make it less appealing for a utility company to meaningfully reduce its pension plan footprint—which could potentially impair the full recovery of pension costs.

It is reasonable to conclude that the combination of higher PBGC premiums and the recent accounting changes (ASU 2017-07) will see many utility industry companies further consider reducing their pension liabilities via various de-risking activities.

[2]FYE 2016 regulatory assets and AOCI shown above for AES include non-regulated business in Brazil. AES no longer had a controlling interest in this business effective November 2017.

The sources of the information presented are S&P Capital IQ, company 10-k filings, and Aon

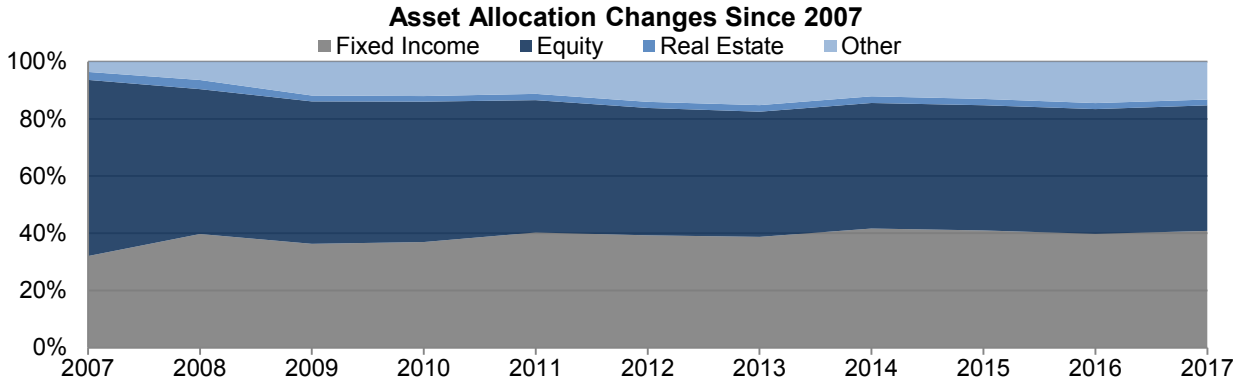
Pension Investments: Trends and Benchmarking

Investments represent the primary lever for managing the cost and risk of a retirement program. Conventional wisdom suggests that long-term investments such as pension funds should adopt a diversified asset allocation with the majority invested in public equities. The traditional 60% equity/ 40% fixed income portfolio has historically been considered a reasonable asset allocation. Over the past several decades, pension plan sponsors have diversified their holdings within the equity (now frequently referred to as “return-seeking”) and fixed income (now commonly referred to as “liability-hedging”) segments of the portfolio.

Trends in Asset Allocation

Over the past decade, a variety of factors have caused pension funds in general to shift their focus to one of risk management. Allocations to public equities have declined—many replaced with allocations to fixed income and alternative investments such as private equity and hedge funds. Catalysts for these changes are well documented: changes in regulation that call for volatile performance to more immediately impact income and cash flow statements, increasing numbers of plan closures and freezes, and higher levels of market volatility. Additionally, improved funding has reduced the return requirements for many plans, allowing them to de-risk their investment strategies. Utilities have followed a similar trend with a nearly 20% reduction in allocation to equities since 2007 and roughly 10% increases to fixed income and other investments.

The utility industry is exposed to many of the same factors cited above, but to a lesser degree. Fewer utilities have closed their pension plans, and none of the 27 included in this study have fully frozen their plans. As such, the utility industry retains a slightly higher allocation to public equities (44%) than general industry (38%) and a slightly lower allocation to fixed income (41%) than general industry (43%).

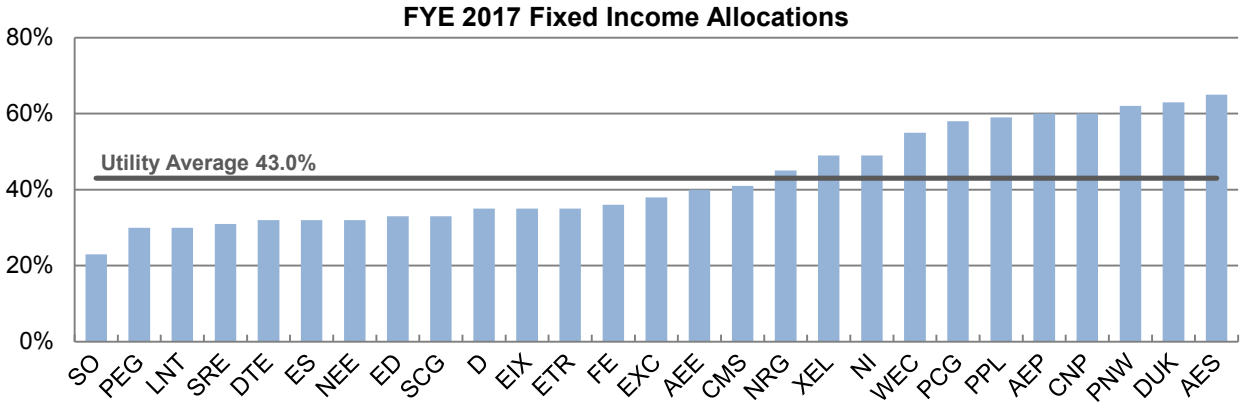


It is noteworthy that much of the activity in terms of changes in asset allocation occurred early in this 10-year period, specifically in 2008 and 2009. Of course, the reduction in equities and increases in fixed income observed in this period were very likely market-driven, given that equity prices fell precipitously during and after the financial crisis. Utilities did not rebalance back to their prior asset allocations; instead, the smaller equity allocations persisted, as did the corresponding larger allocations to fixed income and other investments. In fact, there has been little change in fixed income asset allocation observed since 2011, and only a slight shift out of equities and into alternatives. This result should not come as a surprise, considering that pension plans have generally remained underfunded over this period despite a movement upward in 2017.

The sources of the information presented are S&P Capital IQ, company 10-k filings, and Aon

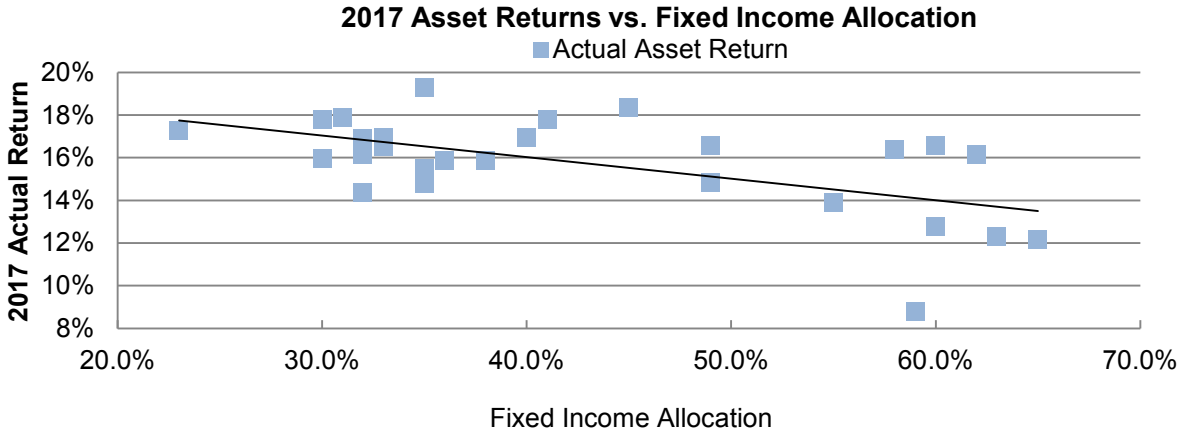
Investment Strategies by Company

We studied the target asset allocation across our utility industry group, using the allocation to fixed income as a proxy for the degree of de-risking. We see tremendous variation in allocations to fixed income—nine of the 27 companies have an allocation less than 35%, and eight of the 27 have target allocations equal to or greater than 55%.



2017 Investment Returns

2017 was a strong year in capital markets, with global equities generally posting returns in excess of 20% and long-duration fixed income returning approximately 10%. Of course, rates of return varied considerably for utility sponsors in 2017, ranging from 9% to 19%. Although all asset classes performed well, the exceptional performance of equities meant that companies with a higher allocation to equities posted stronger returns during the year, as noted in the chart below.



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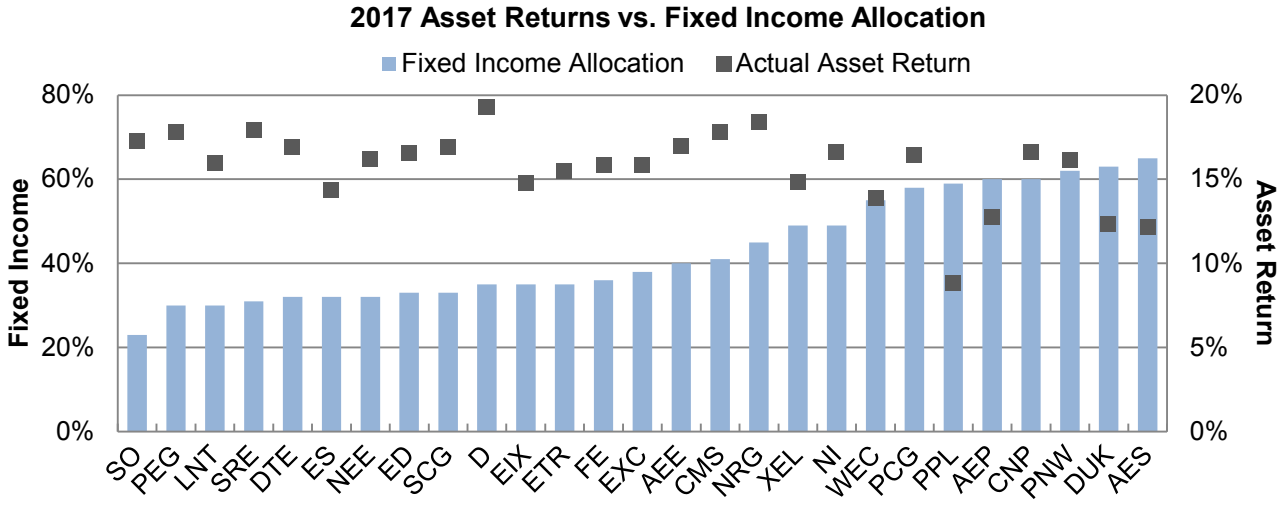
In addition, other factors such as the geographic mix of equity exposure, duration and credit quality of fixed income holdings, active management, and size and performance of alternative assets all contributed to the dispersion in returns. The chart below plots 2017 actual rate of return against fixed income allocation for each utility.

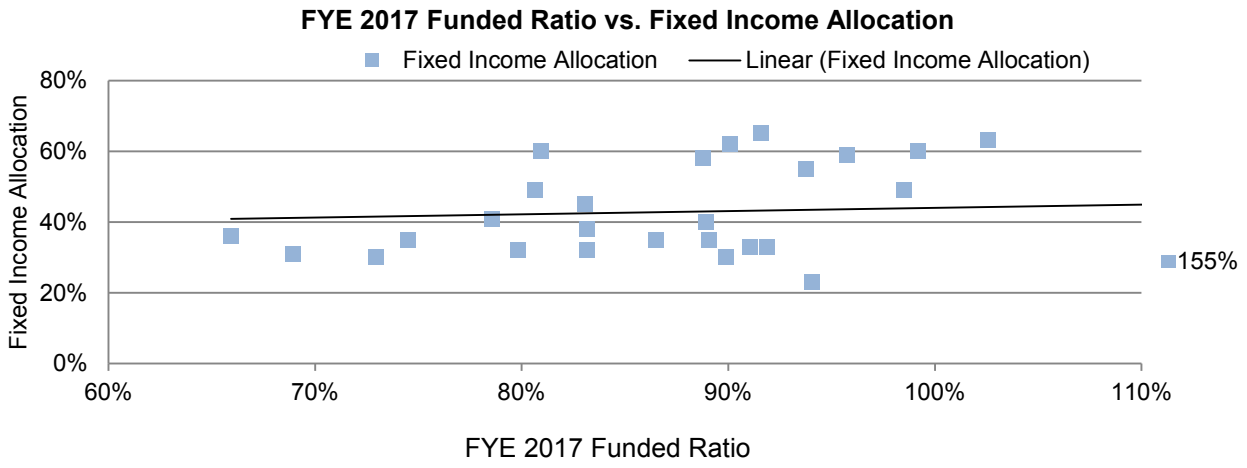


Influence of Glide Paths on Asset Allocation

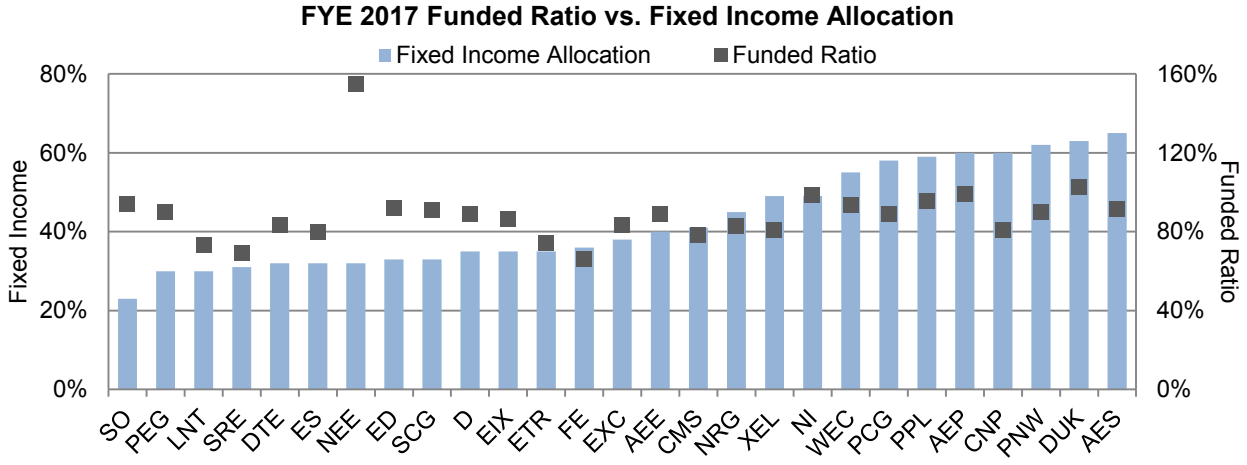
Another clear trend across the pension industry since the financial crisis of 2008 has been the development and adoption of glide path strategies to manage investments. Simply stated, glide paths provide a framework in which a pension plan's strategic asset allocation is directly linked to its funded ratio. As funded ratio improves, the allocation to return-seeking assets such as equities declines and is replaced with increasing allocations to high-quality fixed income with duration characteristics that tend to match those of the pension liability.

While certain utilities have adopted glide path strategies, a close examination of the data suggests that funded ratio is not strongly correlated with asset allocation in the utility industry. In the chart below, we plotted the year-end 2017 funded ratio against the target allocation to fixed income. In the extremes, it does appear funded ratio is driving asset allocation, since those with higher funded ratios tend to invest more heavily in fixed income while those with lower funded ratios tend to invest more aggressively. However, the variation among those "in between" leads to a low overall industry correlation. This is likely due to the fact that the utilities included in this analysis do not include any frozen plans, whose asset allocations tend to be more highly correlated to funded ratio.

The sources of the information presented are S&P Capital IQ, company 10-k filings, and Aon



The chart below provides an additional view of the correlation of fixed income allocation to funded ratio by company.



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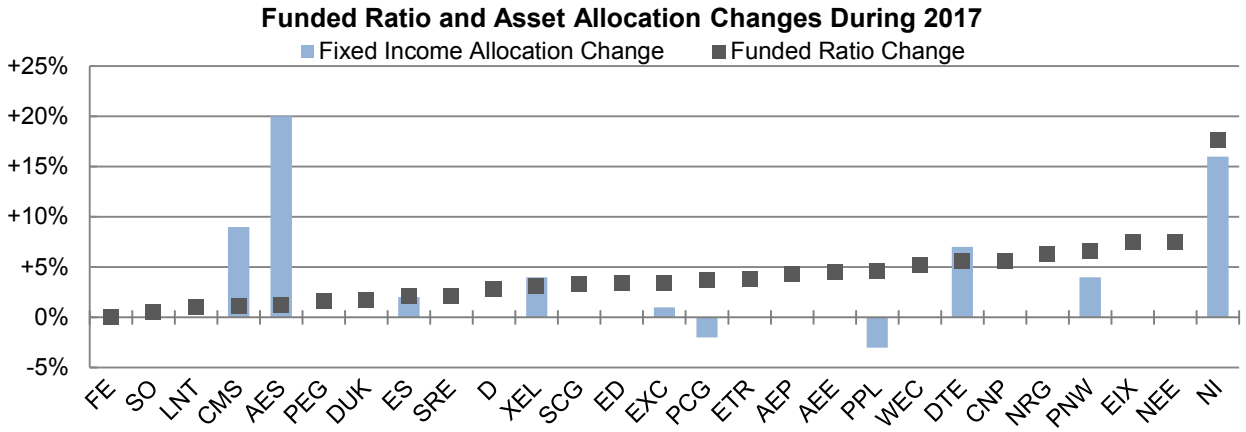
2017 Changes in Target Asset Allocation

A closer look at the change in target asset allocation during 2017 indicates that 10 of the 27 utilities included in our study changed their targets during 2017. Eight increased their allocation to fixed income by amounts ranging from 2% to 20%, while two others reduced their allocation to fixed income by less than 5%. Compared to last year, we saw more changes in asset allocation during 2017, suggesting that funded ratios are improving to the point that glide path triggers are being met. Funded ratios continued to improve significantly in early 2018, which may have triggered additional de-risking.



While certain companies made clear decisions to de-risk their portfolios by increasing their target allocation to fixed income, those actions did not appear to be exclusively driven by improvements in funded ratio. Liability growth rates, plan demographics, the risk preference of the plan sponsor and parent organization, and the regulatory framework in which they operate all influenced the pension investment strategy for an organization.

Return-Seeking Asset Allocation Structure

Another trend observed from the data is the decreased reliance by utility companies on public equities—overall and as a component of the return-seeking portfolio. By “return-seeking portfolio,” we are referring to the segment of the portfolio intended to generate excess returns over the liability. This is complemented by the liability-hedging portfolio consisting primarily of long-duration investment-grade fixed income assets, the goal of which is to mimic the return and volatility profile of the liability.

Since 2007, the composition of the non-fixed income return-seeking allocation has meaningfully changed. Public equities made up 77% of the non-fixed income return-seeking portfolio in 2017, down from 91% in 2007. This specific data point is the result of increasing allocations to “other” investments, primarily private equity and hedge fund strategies. This analysis likely understates the diversification away from public equities as a result of high-yield debt, emerging market debt, and other return-oriented credit strategies being categorized as fixed income. All have emerged as viable return-seeking portfolio components with diversification benefits.

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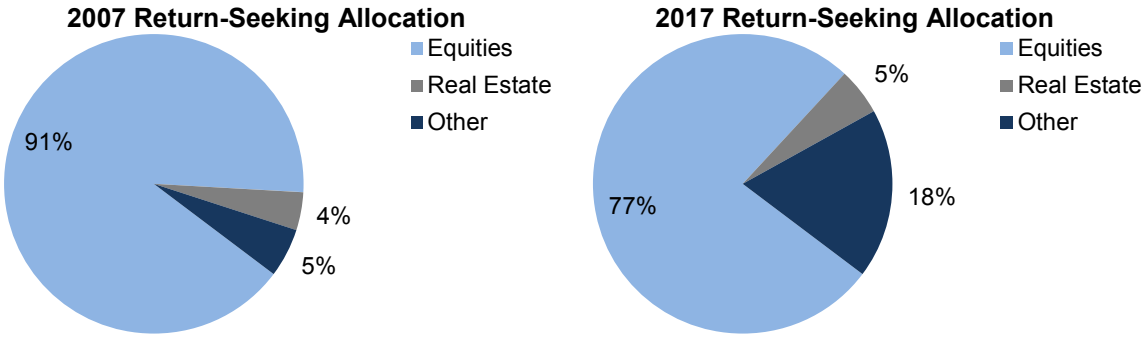


This diversification comes as no surprise given the volatile ride taken by equity investing over the past decade—shining a bright light on how equity risk tended to dominate the aggregate portfolio risk of most pension funds.

Looking Ahead

What might the next 10 years bring? In studying the last 10 years, we have learned that rising interest rates and required pension funding are anything but a given. That said, utilities continue to face generally underfunded pensions with diminished return expectations for most asset classes. This suggests more of the same, barring any significant change in funded position, interest rates, or return expectations.

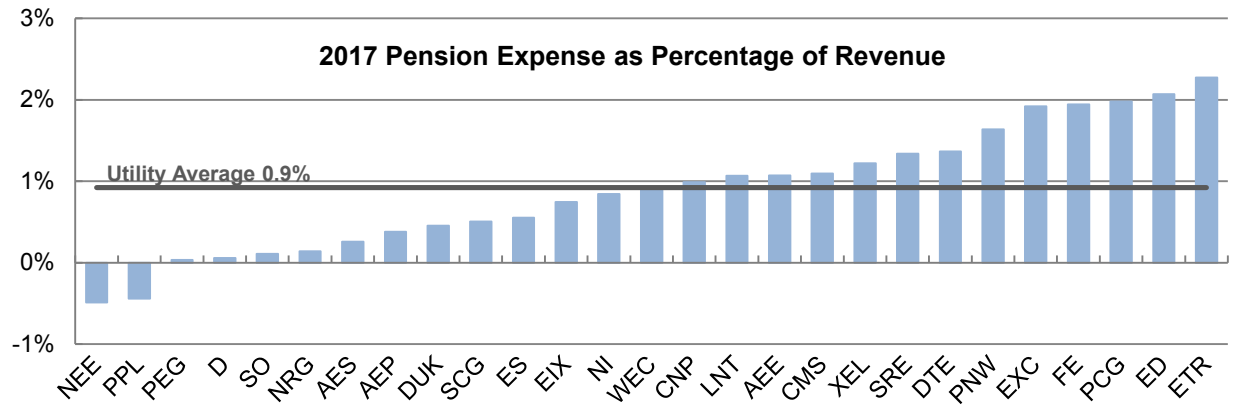
In the end, utilities have been following many of the same trends observable in general industry, albeit at a slower pace. As more utilities move away from defined benefit plans by closing their programs (a trend clearly observed) or ultimately freezing them (a strategy **yet** to be observed), we do expect a continued shift away from public equities and toward fixed income. We would not be surprised to see the pace of de-risking pick up, especially if funded ratio improvements continue.

The sources of the information presented are S&P Capital IQ, company 10-k filings, and Aon

Pension Expense on the Income Statement: Trends and Benchmarking

Many utilities focus on the pension costs that run through the income statement, since this metric is included in earnings that are reported to investors and is also typically the basis for rate recovery of pension costs for regulated businesses.

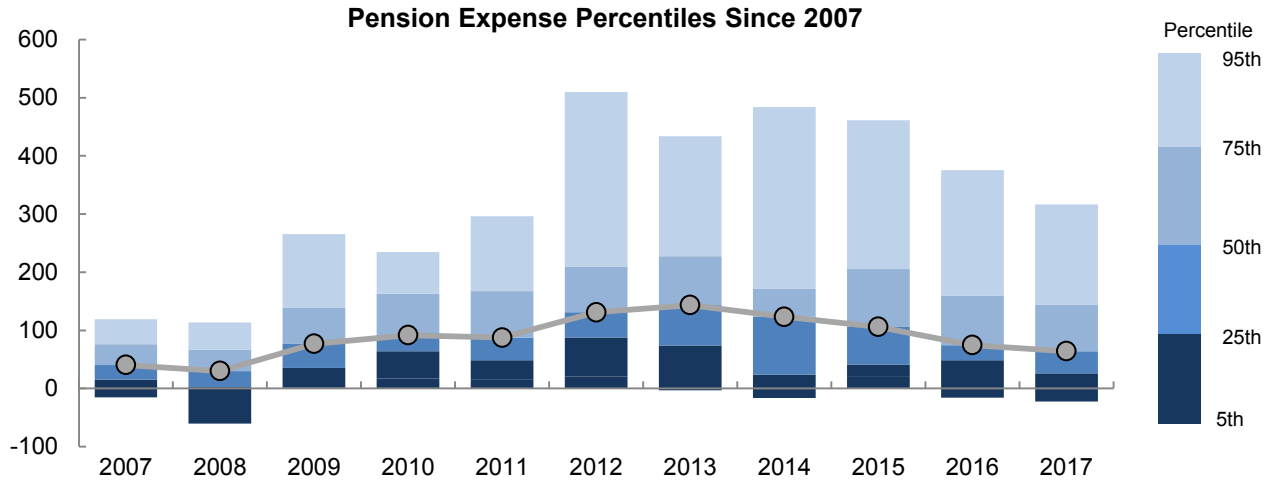
Like many of the data points discussed in this paper, the level of pension expense (shown below as a percentage of revenue) varies dramatically for each utility. Certain utilities are generating pension income, making their pensions a profit center in the company's annual statement of profit and loss. However, for the vast majority of utilities, pension expense is a drag on profits—the more intuitive outcome. In certain cases, pension expense exceeded 2% of gross revenues in 2017.



As has been noted above, pension finances can be quite volatile. This is certainly the case for pension expense. The chart below shows the distribution of pension expense over the past 10 years. During this time, a gradual increase is observed after the financial crisis, peaking during the 2012–2014 time frame; afterward, expense gradually declines. This delayed recognition of the asset losses incurred during the financial crisis has two primary causes:

- Pension expense, by definition, defers the impact of current-year events that generate gains or losses. In general, for companies other than those using "mark-to-market" accounting, gains or losses that occur in a given year are deferred and amortized into expense over a period of years, commonly 10 to 12.
- The asset value used in the pension expense calculation is further "smoothed" over a period of up to five years, such that asset losses in a particular year are not fully reflected until up to five years later.

The sources of the information presented are S&P Capital IQ, company 10-k filings, and Aon

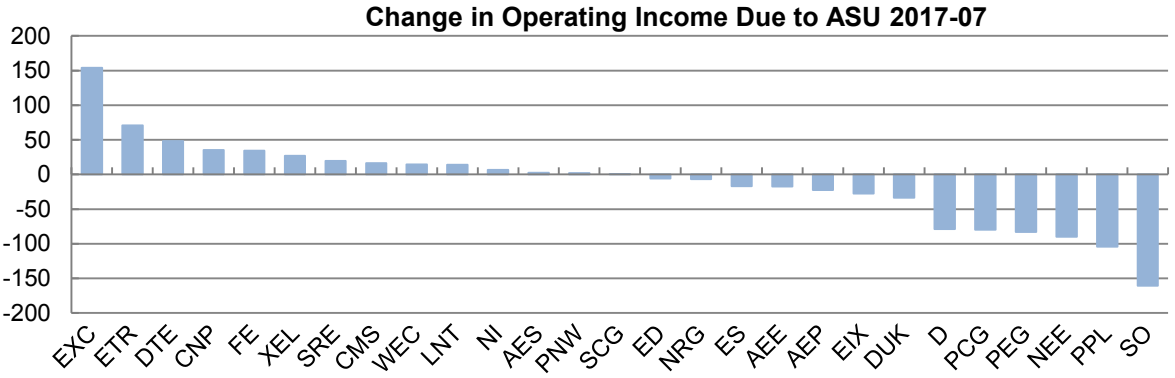


Accounting Standard Update (ASU) 2017-07

On March 10, 2017, the FASB adopted ASU 2017-07, which changed the financial statement presentation requirements for pension and OPEB expense under ASC 715. The key changes are as follows:

- Service cost must be reported in the same financial statement line items as other current employee compensation costs.
- All other components of expense must be presented separately from service cost, and outside any subtotal of income from operations.
- Only the service cost component of expense is eligible for capitalization.

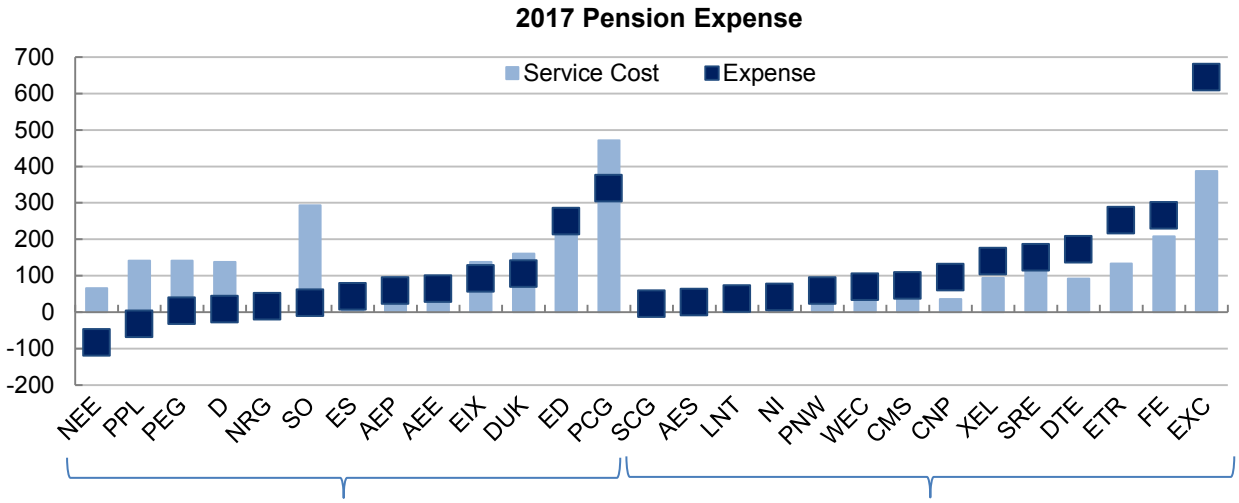
The change in presentation and the resulting impact on operating metrics impacted all pension sponsors, in particular those with material pension programs such as utilities. The table below shows the change in operating income resulting from the changes in ASU 2017-07.[3] Those with negative outcomes saw a decline in operating income due to an increase in post-capitalization pension costs reflected in operating results. Those with positive results saw an improvement in operating income.



[3]Assumes 40% capitalization rate for pension costs for all companies; for illustrative purposes only.

The sources of the information presented are S&P Capital IQ, company 10-k filings, and Aon

The variation across utilities is driven by the relationship of service cost to total pension expense. In those organizations for which service cost exceeded pension expense, which is common for well-funded plans or those with higher expected return on asset assumptions, the change in ASU 2017-07 generally increased pension expense included in operations but reduced overall post-capitalization expense reflected in the income statement. In organizations for which pension expense exceeded service cost—typically lesser funded plans or those with less aggressive investment strategies—the opposite impact was observed.



Companies Where Service Cost Exceeds Expense
Adverse impact on operating income but favorable impact on overall post-capitalization income statement

Companies Where Expense Exceeds Service Cost
Favorable impact on operating income but adverse impact on overall post-capitalization income statement

The change in eligibility for capitalization was also material for utilities. This not only affected reported earnings on the income statement, it also complicated rate recovery—because in many jurisdictions post-capitalization pension expense is a component of rates.

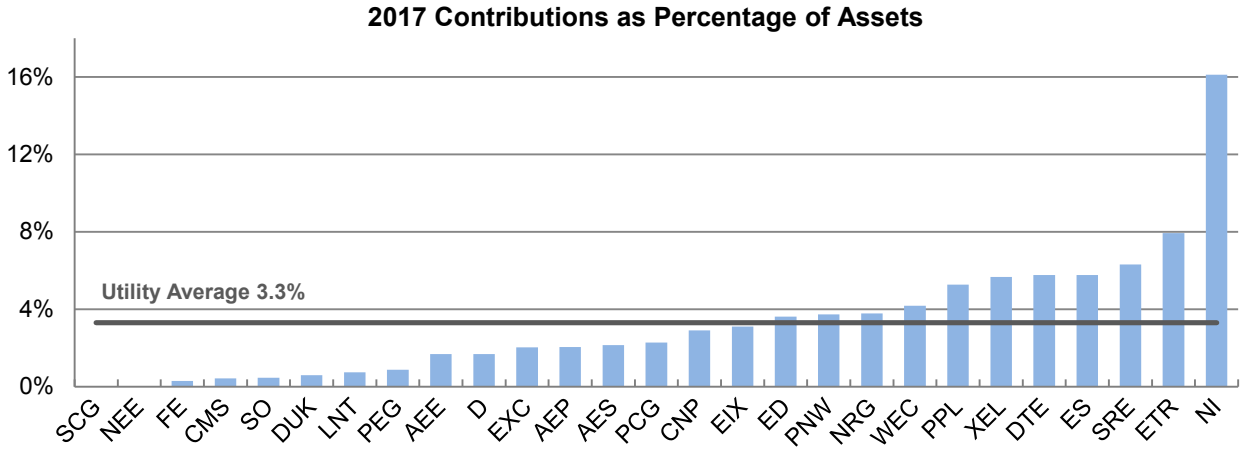
Quite a few utilities struggled with the implementation of this new accounting standard and the potential need to track expenses, and more importantly capitalized asset levels, separately for GAAP and regulatory purposes. For some, this introduced the potential for significant complexity to accounting operations. In the end, some utilities adopted the new accounting standard for all purposes, GAAP and regulatory; in other cases, separate books were maintained, with the differences being held at an aggregated—and therefore more manageable—level.

The sources of the information presented are S&P Capital IQ, company 10-k filings, and Aon

Pension Funding: Trends and Benchmarking

Other than investment returns on current assets, the main source of asset growth and funded status improvement is cash contributions to the plan. Minimum pension funding rules are legislated, although many plan sponsors consider discretionary contributions in addition to the minimum contribution required by law. This has been particularly true over the last few years as plan sponsors have been faced with dramatic increases in PBGC premiums for underfunded plans while at the same time enjoying lower levels of minimum required contributions due to legislative relief enacted by MAP-21 (Moving Ahead for Progress in the 21st Century Act) in 2012 and further extended by HATFA (Highway and Transportation Funding Act) in 2014 and BBA (Bipartisan Budget Act) in 2015.

Due to differences in funded levels and the opportunity for discretion mentioned above, we see tremendous variation in the amount of pension contributions made during 2017. Note that the data presented below includes contributions to qualified pension trusts, as well as any benefit payments made directly from company assets for unfunded plans such as nonqualified pension plans or arrangements.

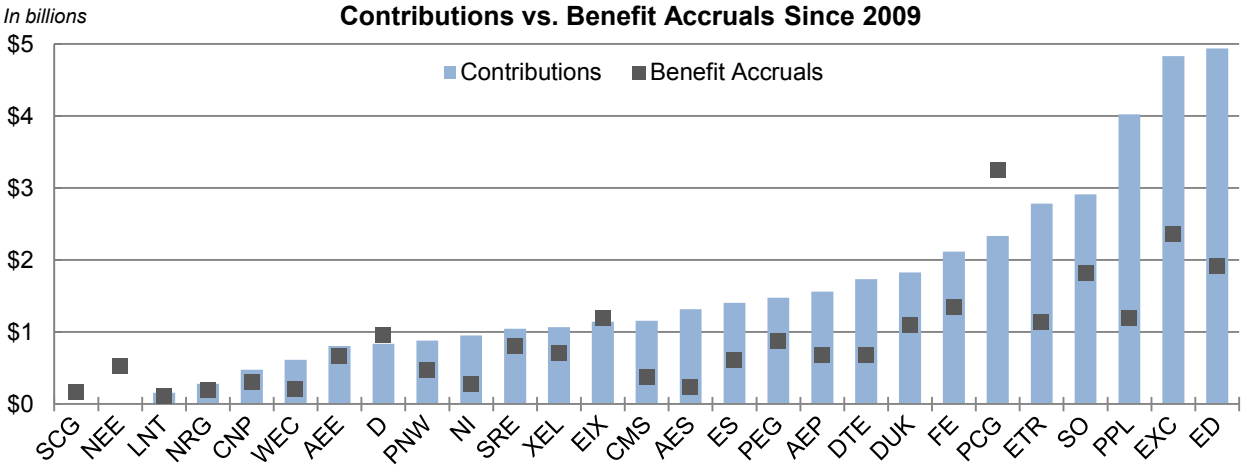


Trends in Pension Funding

After the market downturn of 2008, many plan sponsors experienced a dramatic drop in their funded percentages. In fact, the utility industry average funded percentage dropped significantly more than the S&P 500 plan sponsors' average percentage.

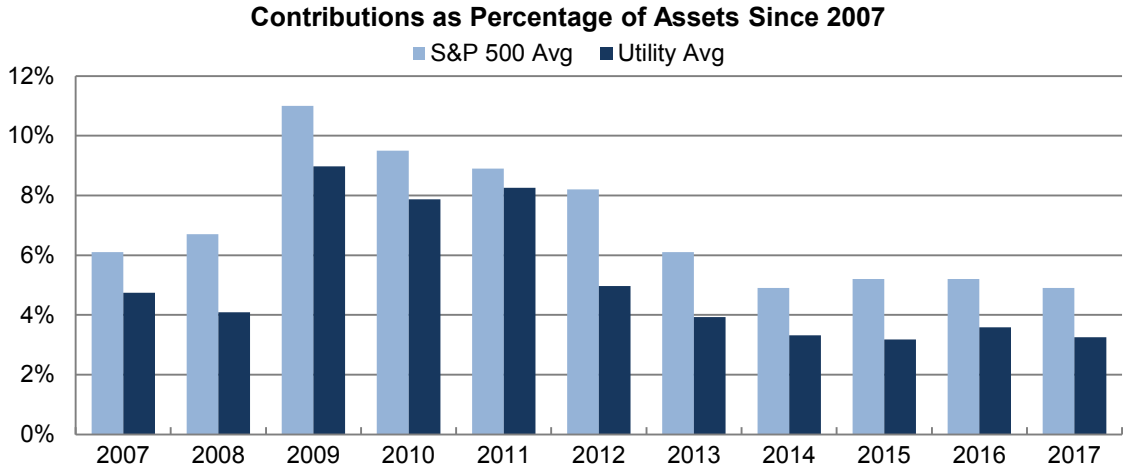
The sources of the information presented are S&P Capital IQ, company 10-k filings, and Aon

But since 2008, the average funded percentage for the utility industry has improved from 74% at the end of 2008 to 89% at the end of 2017. The pension deficit (in dollar terms) also decreased, from $26.6 billion to $21.7 billion. This funded percentage improvement was achieved with contributions ($42.7 billion) nearly twice as large as benefit accruals ($24.1 billion) over the same period, as shown in the chart below.



Influence of Pension Funding Relief Measures on Pension Contributions

Based on published financial data, the utility industry average funded percentage has improved from 2008 through 2017 by more than that of the average S&P 500 plan sponsor (74% to 89% versus 75% to 84%, respectively). What makes this observation even more interesting is that this was achieved in spite of the utility industry's contributions being consistently lower as a percentage of assets.

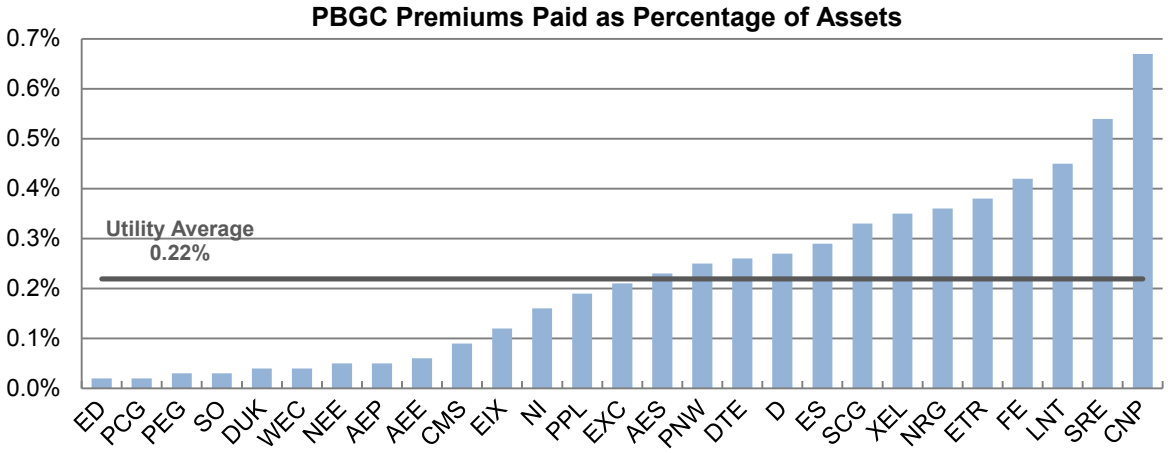


Based on this information, it appears the utility industry made greater use of the available post-2008 funding relief measures (MAP-21, HATFA, BBA)—it contributed less (as a percentage of assets) than the average plan sponsor, even though its funded ratio was considerably lower in the aftermath of the market downturn of 2008.

The sources of the information presented are S&P Capital IQ, company 10-k filings, and Aon

PBGC Premiums

Recent and future large increases in PBGC premiums have certainly influenced pension funding strategy for many plan sponsors, including the utility industry. According to 2017 PBGC filing information, the average funded status position (for PBGC purposes) for the utility industry is 96%, compared to the 91% median funded ratio for the universe of plan sponsors. The total PBGC premium as a percentage of assets is 0.22%, on average, for the utility industry—compared to a 0.35% average for all plan sponsors.

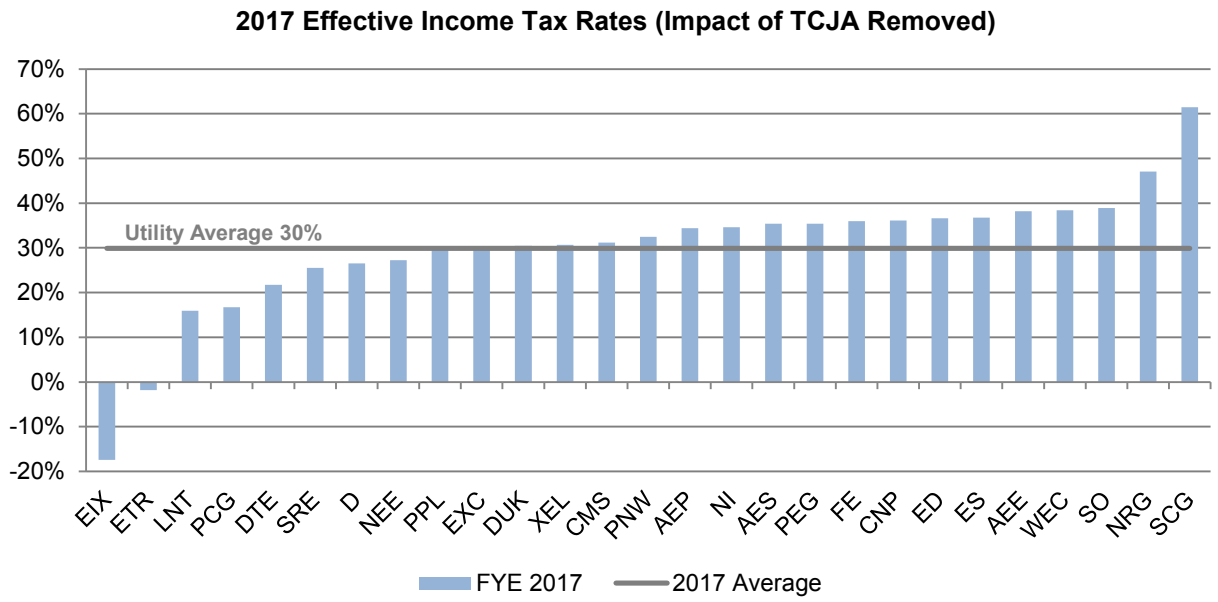


Note that 19 of the 27 surveyed utilities are paying variable rate premiums, with 12 of the 19 at the PBGC variable rate premium (VRP) cap in 2017. For this group, discretionary funding—at least to some extent—would not reduce PBGC premiums. Rather, headcount reduction would be a more effective strategy to mitigate PBGC premium levels.

Tax Cuts and Jobs Act

On December 22, 2017, the U.S. Government passed the Tax Cuts and Jobs Act (TCJA), one of the largest tax bills in decades. Among other provisions, the TCJA reduced the federal corporate income tax rate from 35% to 21% beginning January 1, 2018. Effective tax rates, as reported for the 2017 fiscal year and excluding the impact of TCJA, averaged around 30%. Going forward, the legislation is expected to lower the effective income tax for most corporations, including the utility industry.

The source of the information presented is PBGC filings, Aon



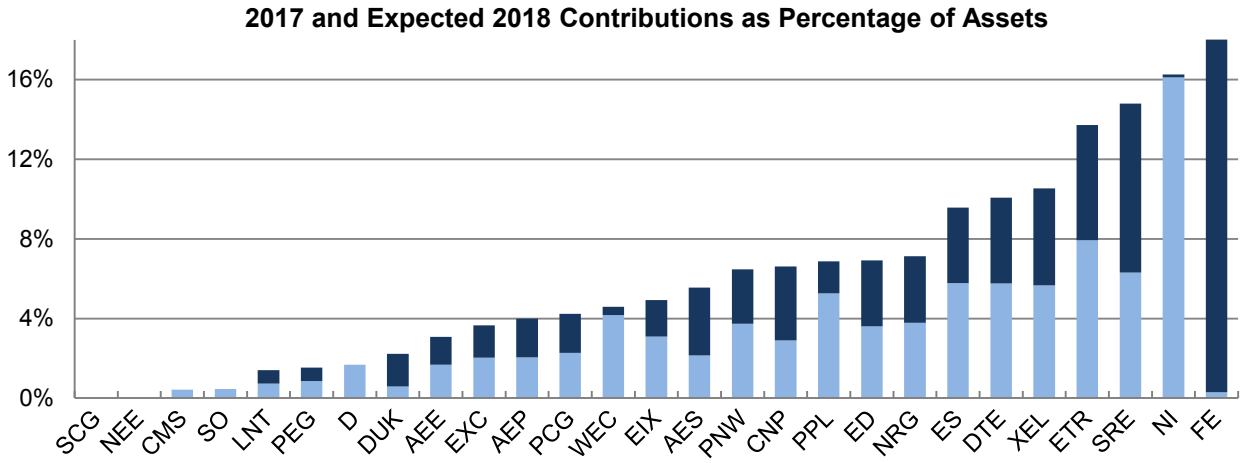
As a result of the lower anticipated tax rates going forward, opportunities exist to potentially save on future tax assessments by making contributions to defined benefit pension plans and treating them as 2017 tax year deductions. Contributions paid prior to September 15, 2018 (for calendar year tax years) can be applied to the 2017 tax year and therefore can be deducted at the corporate income tax rate for the 2017 plan year. Similar opportunities may exist in certain situations with 401(h) accounts.

Looking Ahead

We expect the amount of discretionary pension funding to increase in 2018 and beyond for all industries, including the utility industry. The recently passed tax reform act presents a tax deduction opportunity for contributions, particularly those made in 2018. The PBGC premium reduction opportunities, the changes in tax regime, P&L impacts, and attractive borrowing rates will continue to serve as catalysts for discretionary funding. The reduced levels of contributions resulting from funding relief may serve to simply defer the issue, because required contributions could ramp up over the coming decade.

Many of the utility companies surveyed are expecting to make contributions in 2018, possibly to take advantage of the higher tax rates applicable to the 2017 plan year. As shown below, utilities are on pace to make contributions (as a percentage of assets) in 2018 in amounts similar to those made in 2017, and this is based just on expectations from their year-end 2017 filings. It may be reasonable to assume that contributions in 2018 will outpace those of 2017 and prior years.

The source of the information presented is PBGC filings, Aon



The application of the VRP cap will also continue to generate interest in settlement activity, given that the savings from reducing participant headcount can be quite compelling in these cases. Strategies like small benefit annuity lift-outs are likely to be appealing to these utilities due to their potential return on investment and the ability to manage settlement accounting impacts.

The source of the information presented is PBGC filings, Aon

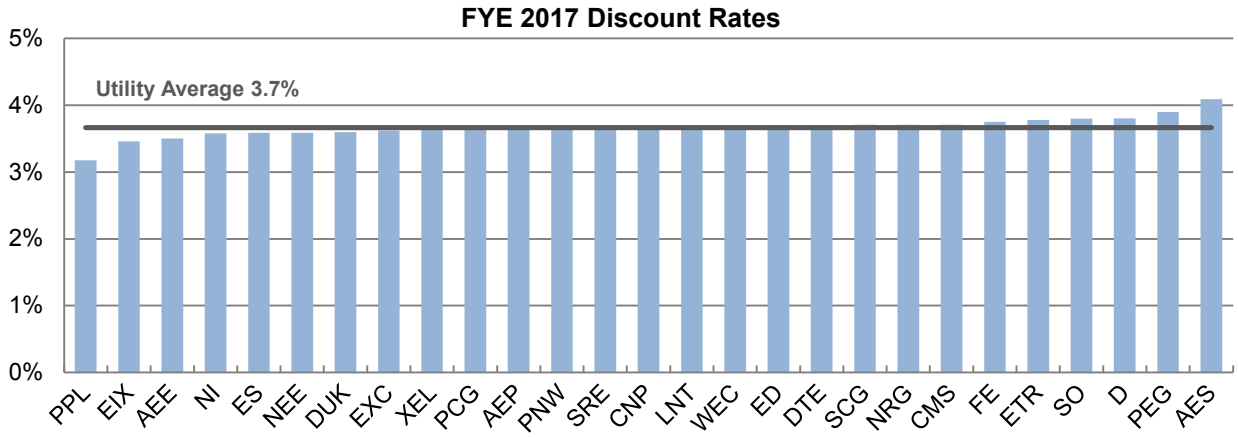
Actuarial Assumptions and Methods

Assumptions are a key component of determining the ultimate cost of retirement and postretirement welfare plans. Given the materiality of utility companies' retirement benefit costs and the importance of actuarial assumptions in determining the level and volatility of costs, those in the utility industry pay particular attention to assumptions.

Discount Rates

Among the S&P 500 companies, fiscal year-end 2017 discount rates for pension and postretirement welfare plans are consistent with those of the majority of plan sponsors across all industries. Yield curve development is based on a broad array of high-quality corporate bonds, not industry-specific considerations.

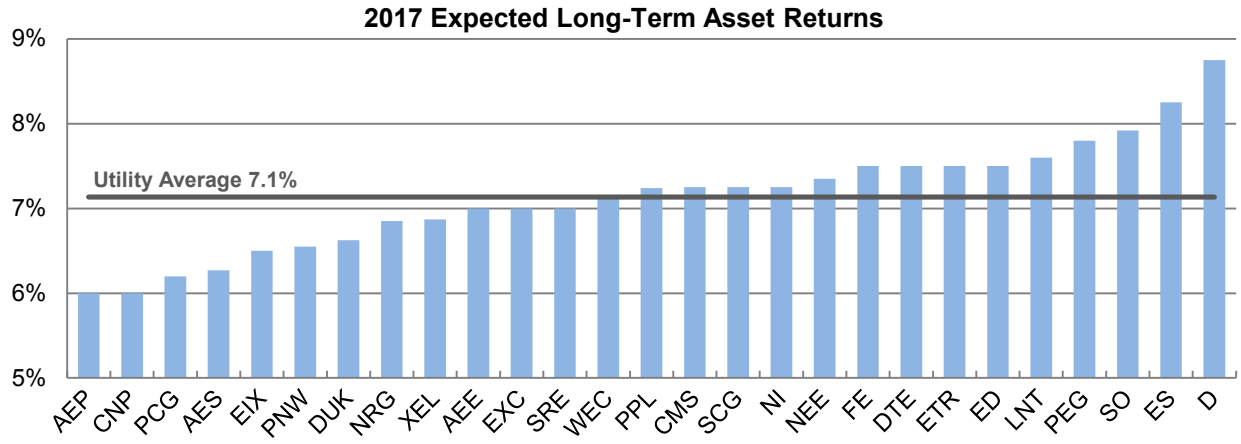
On average, pension discount rates for the utility industry declined 40 basis points from the prior year, reaching historic lows. Rates as of fiscal year-end 2017 are about 280 basis points lower than their peak at fiscal year-end 2008.



The source of the information presented is S&P Capital IQ; Company 10-k filings; Aon

Expected Rate of Return

The chart below shows the expected return on asset (EROA) assumptions used to determine FY2017 expense. Many plan sponsors across all industries have lowered their EROA in recent years because of falling capital market assumptions. For FY2017, 12 of the 27 utilities lowered their return assumption from the prior year, most by at least 20 basis points.

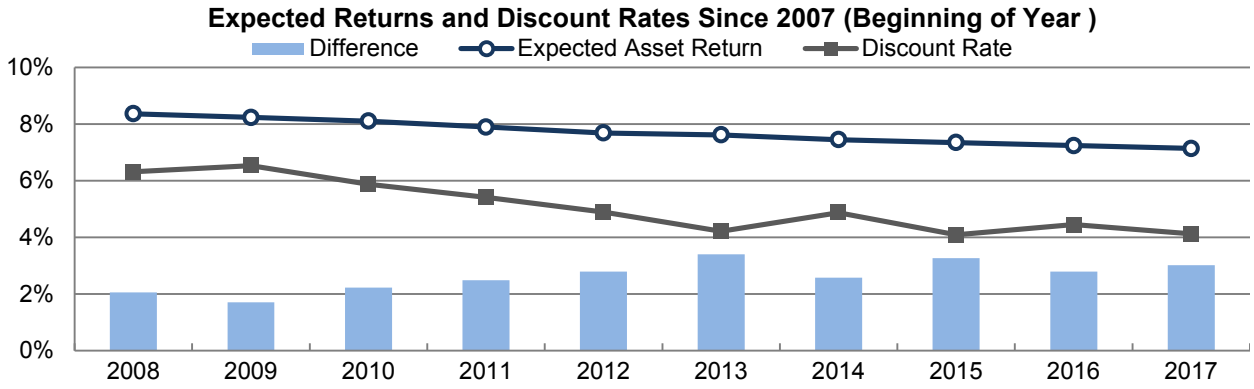


Different factors drive the decision to set an EROA assumption, including asset allocation, capital market expectations, and the time period over which the return is expected to be earned. Utility companies collecting rate recovery through their annual expense may need to reconcile their approach with their respective commissions. Lower assumed returns on assets mean higher expense and may result in a higher cost assessed to rate payers in the near term.

The decline in EROA assumptions over the past decade has been well documented—from approximately 8.4% in 2008 to 7.1% in 2017. This is driven partly by changes in asset allocation; some utilities have shifted their asset allocation toward lower-returning fixed income assets. In addition, general expectations for portfolio returns have declined over this period due to moderated economic growth expectations and persistently low interest rate levels.

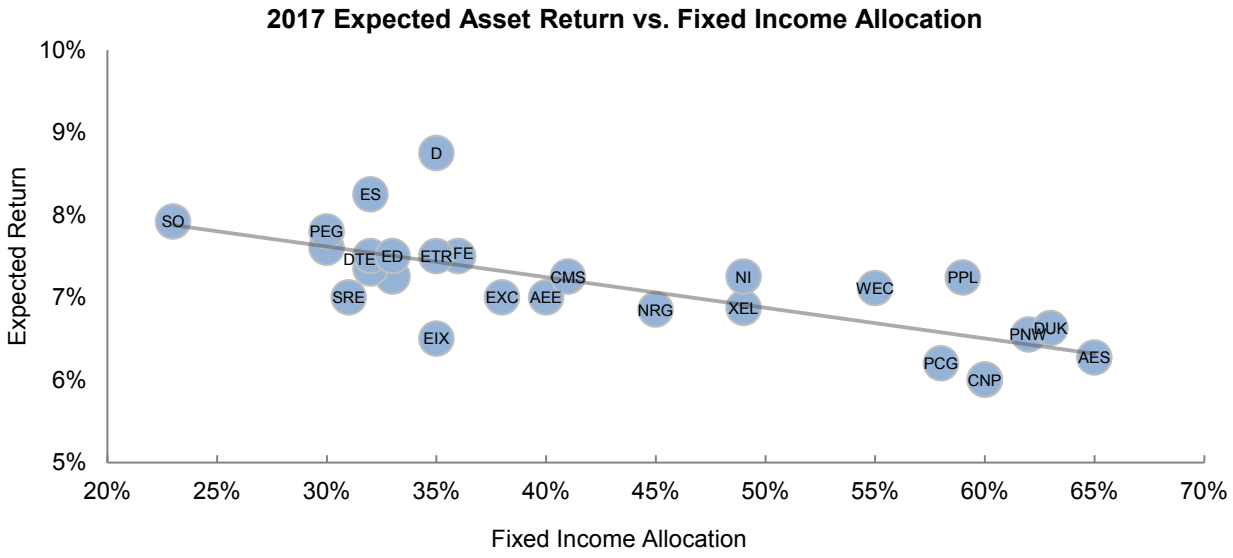
To that point, EROA assumptions have decreased along with discount rates over the past decade. The spread between these two assumptions has increased by approximately 100 basis points over the last 10 years. But although the discount rate movement has shown significant volatility, with adjustments each year-end to reflect current corporate bond spot rates, the EROA assumption has shown a smooth but steady decline to reflect a gradual lowering of return expectations.

The source of the information presented is S&P Capital IQ; Company 10-k filings; Aon



Expected Rate of Return and Asset Allocation

As expected, the EROA assumptions for companies with lower fixed income allocations are higher because of the additional risk in their investment portfolios. If, as expected, plan sponsors continue to shift assets to fixed income over the lifetime of a pension plan, we should continue to see a downward shift in EROA assumptions among plan sponsors across all industries. The average EROA assumption for companies with a target fixed income allocation of 35% or less is 7.6%, and the average EROA assumption for companies with a target fixed income allocation of over 35% is 6.9%.

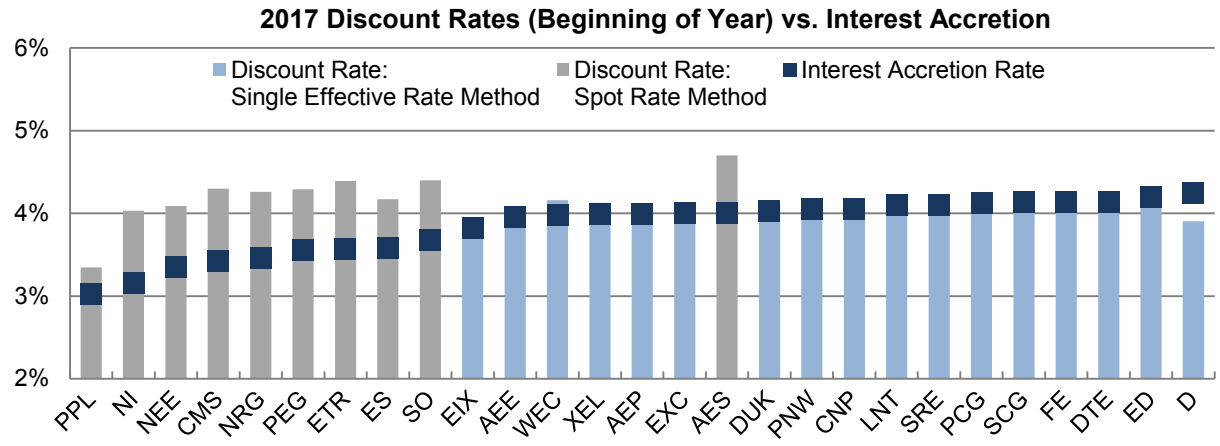


The source of the information presented is S&P Capital IQ; Company 10-k filings; Aon

Spot Rate Approach—Determination of Expense

The spot rate approach has gained traction over the past few years among companies across all industries. This approach uses individual spot rates along a yield curve to determine service cost and interest cost, as opposed to relying on an effective interest rate determined from liability cash flows. Using this approach is attractive because it provides a more accurate, market-based measure of pension expense. It also lowers service cost and interest cost components in the current yield curve environment because it uses lower spot rates in earlier years to determine present values.

The SEC has approved this method for companies that use a yield curve to set their discount rates, but it has rejected its use for plan sponsors that use the so-called "bond-matching" method. Utilities' adoption of the spot rate method also involves considering its implications on rate making. However, as more plan sponsors adopt this method, those that are eligible and have not yet done so may be pressured by regulators or other stakeholders to do so.



Of the 27 surveyed utility companies, 10—or about 35%—have reported adoption of the spot rate method. While there are potential rate recovery implications to be considered, this level of adoption among utilities is generally consistent with what has been observed among the broader set of S&P 500 companies.

Looking Ahead

Actuarial assumptions will continue to be an area of focus for utilities, given the materiality of their retirement programs and the leveraged impact these assumptions have. We expect continued adoption of the spot rate method by those not using a bond-matching method to set the discount rate. We also expect continued downward movement in return expectations for the reasons previously discussed in this report.

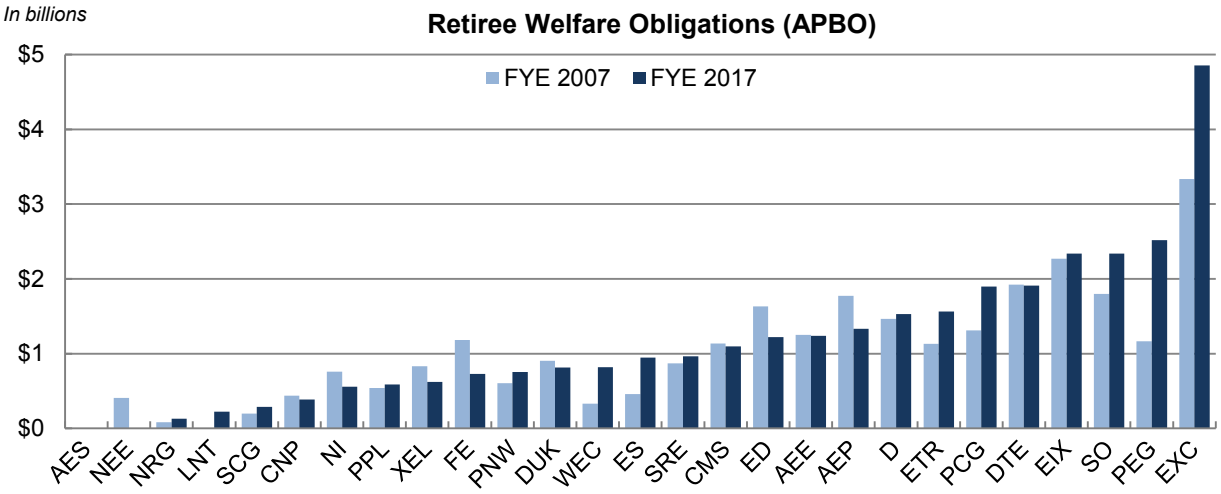
The source of the information presented is S&P Capital IQ; Company 10-k filings; Aon

Retiree Health and Welfare Programs

The retiree health and welfare benefit obligations (APBO) of the utility industry are material, but they are less significant than its pension obligations. Unlike general industry, utilities' obligations tend to be funded, largely due to regulatory requirements. As with pension benefits, utilities have faced the challenge of declining interest rates and volatile asset returns over the last 10 years as they have worked to manage the cost of retiree health and welfare benefits.

Size of Benefit Obligations

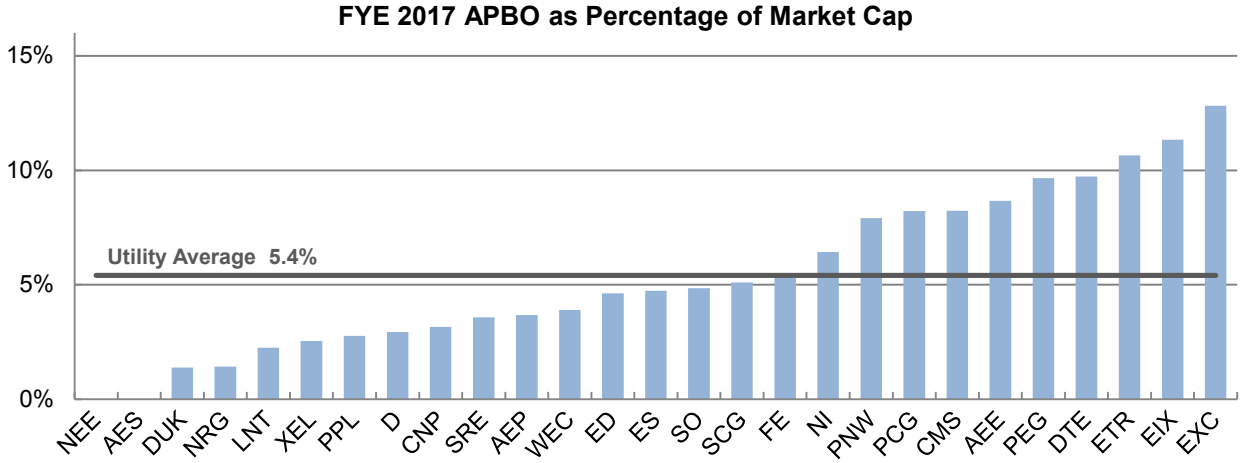
Since 2007, the utility industry's benefit obligations have increased modestly overall, from $28 billion at year-end 2007 to $32 billion at year-end 2017—certainly less than the significant growth in its pension obligations. Utilities have managed the growth in their benefit obligations in part by making significant plan design changes, with some utilities making more aggressive changes than others. The graph below shows the benefit obligations by company, ranked by size, as of year-end 2017.



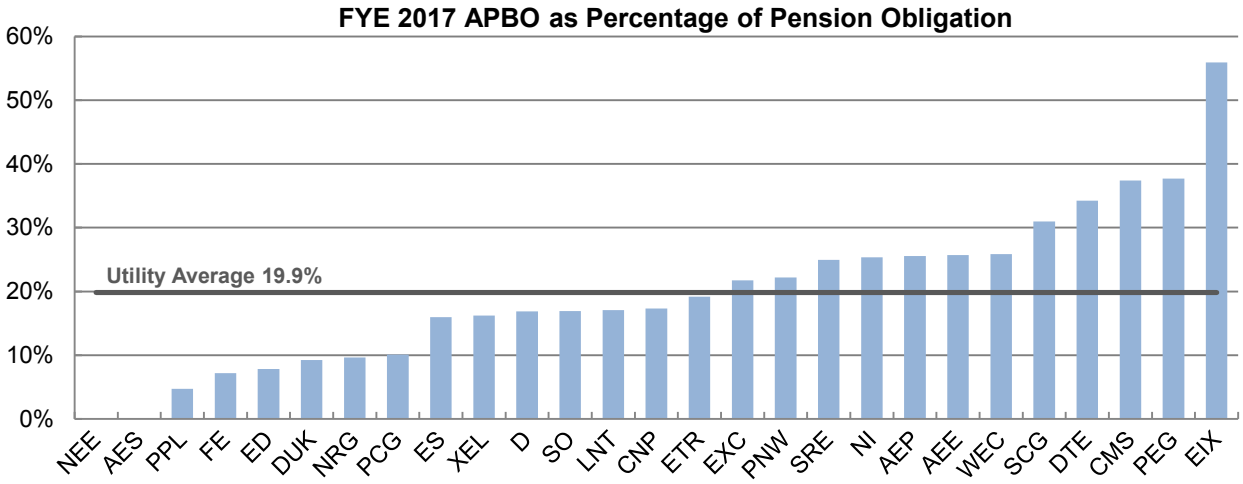
Note: *Since 2015, NextEra Energy, Inc. (NEE) has not reported the reconciliation of its retiree welfare obligations in its annual report.*

The source of the information presented is S&P Capital IQ; Company 10-k filings; Aon

Retiree health and welfare obligation materiality varies widely in the utility industry. The graph below ranks utilities by benefit obligation size as a percentage of market capitalization. The average size of obligations is 5.4% of market capitalization, with eight of the 27 companies having obligations of less than 3% and eight having obligations of 8% or greater.



While the utility industry's retiree health and welfare obligations are about one-fifth the size of its pension obligations, these obligations are still substantial when compared to general industry. The graph below shows the ratio of retiree health and welfare obligation to pension obligation by company. We see significant variation in this ratio by company.

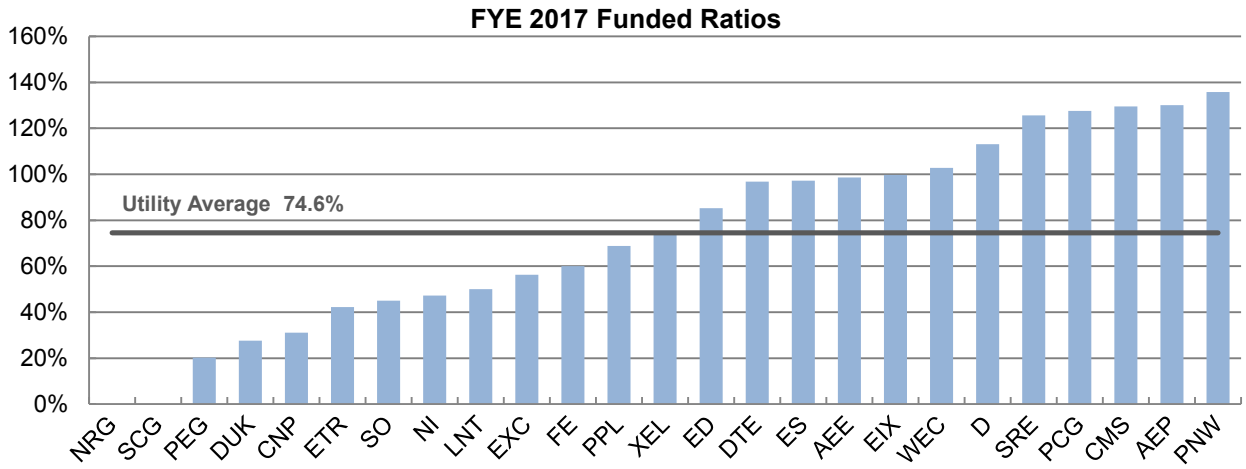


The source of the information presented is S&P Capital IQ; Company 10-k filings; Aon

Funding and Investment Strategies by Company

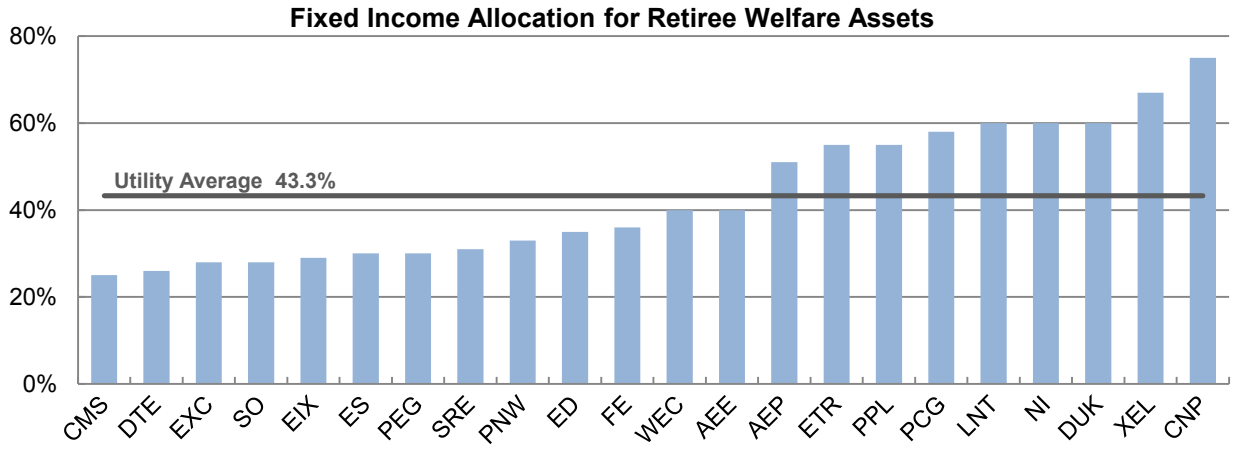
One key difference between pension and retiree health and welfare plans is prefunding. The law requires the funding of pension plans, but prefunding is not legally required for retiree health and welfare plans. Even so, utilities are more likely to prefund their retiree health and welfare benefits and often operate under regulatory agreements that mandate prefunding.

The graph that follows shows retiree health and welfare obligation funded status by utility (for the 25 out of 27 reporting retiree health and welfare obligations). The average funded status is 75%, and 11 of the 25 utilities are funded at a level of 90% or greater. In addition, there is often significant variation in funded ratio among the plans within a single utility organization. Union programs tend to be funded more aggressively than non-union plans because of their more favorable tax treatment. In fact, many utilities are exploring strategies to manage over-funded programs—in particular, VEBAs covering union employees.



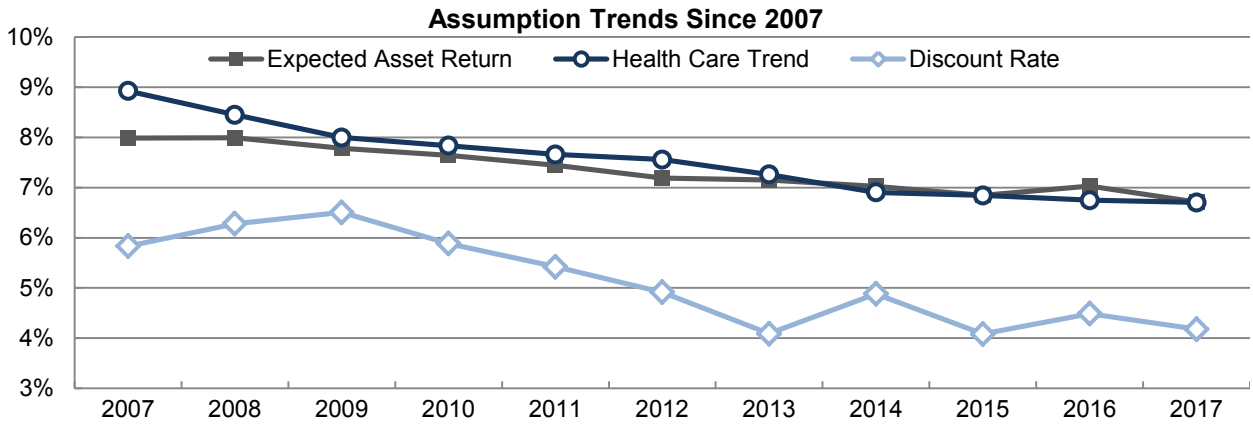
With respect to investment strategies, we see tremendous variation in the allocation to fixed income. 22 of the 27 companies reported targeted assets allocations at year-end 2017, with five of the 22 companies reporting allocations of 30% or less and five of the 22 reporting allocations of 60% or more. Interestingly, we do not see a correlation between a higher funded status and a higher allocation to fixed income. The taxability of the assets supporting a company's retiree welfare plans can also lead to investment strategies that differ from its pension strategy. That being said, when comparing year-end 2016 to year-end 2017, we see an increase in both the average funded status and the average fixed income allocation.

The source of the information presented is S&P Capital IQ; Company 10-k filings; Aon



Trends in Key Assumptions for Retiree Health and Welfare Plans

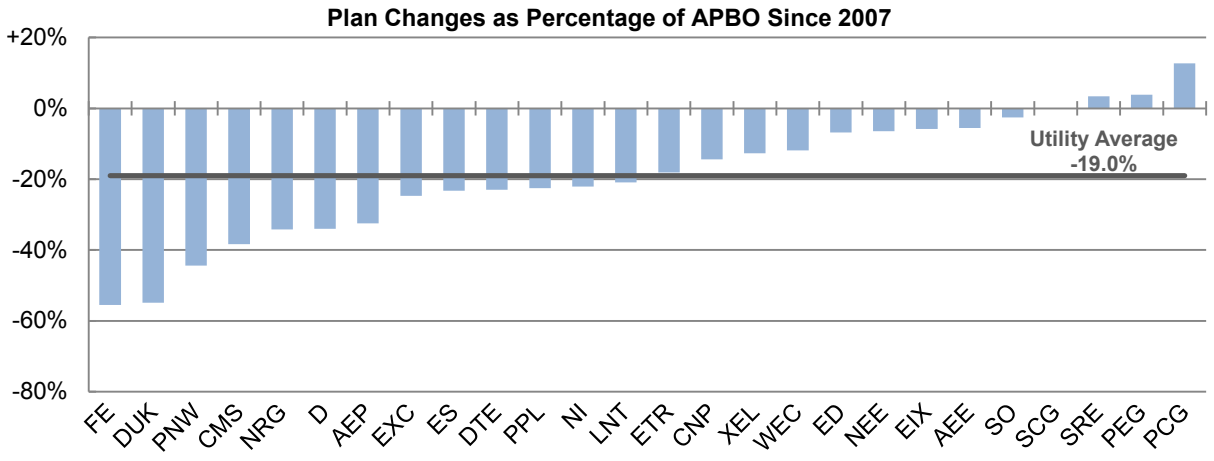
Over the past 10 years, we have seen steady declines in these plans' long-term rate of return and initial trend rate assumptions. This trend is consistent with what we have seen in general industry. The decline in the long-term rate of return reflects lower assumed capital market returns in general, as well as the trend toward de-risking. The decline in the initial health care cost trend rate assumption reflects the general decline in the rate of actual cost increases during this period.



The source of the information presented is S&P Capital IQ; Company 10-k filings; Aon

Benefit Obligation Reductions

Also over the last 10 years, utilities have made plan changes that significantly curtailed or reduced their retiree health and welfare benefit obligations. The graph below shows the aggregation of plan changes as a percentage of benefit obligations by utility. We see a large variation in the extent to which utilities have used benefit changes to reduce benefit obligations. As one might expect, utilities with less well-funded obligations made more significant reductions in their benefit obligations.



The source of the information presented is S&P Capital IQ; Company 10-k filings; Aon

Looking Ahead

Retiree health and welfare—potentially more than any other area—is likely to be impacted by legislative and regulatory activity, since government's role in providing health care continues to be fluid. If history is any indication, the utility industry will continue to identify and implement changes that reduce the companies' financial obligations. The most likely solution for reducing obligations and complying with changing regulations is to move to an exchange solution (where the public market is quite robust) for delivering retiree health care to Medicare-eligible retirees. This change, already under consideration by a number of utilities, often presents cost-saving opportunities for these retiree welfare programs.

The source of the information presented is S&P Capital IQ; Company 10-k filings; Aon

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