Exhibit No.:	_______________
Issue(s):	Pensions & Retiree Medical (OPEB)
Witness/Type of Exhibit:	Pitts/Direct
Sponsoring Party:	Public Counsel
Case No.:	GR-2017-0215 GR-2017-0216

DIRECT TESTIMONY

OF

DAVID G. PITTS

Submitted on Behalf of the Office of the Public Counsel

LACLEDE GAS COMPANY
MISSOURI GAS ENERGY

CASE NO. GR-2017-0215
CASE NO. GR-2017-0216

September 8, 2017

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DIRECT TESTIMONY

OF

DAVID G. PITTS

LACLEDE GAS COMPANY
MISSOURI GAS ENERGY

CASE NO. GR-2017-0215
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I. INTRODUCTION

Q: PLEASE STATE YOUR NAME AND YOUR BUSINESS ADDRESS.

A: My name is David G. Pitts, and my business address is 33 Amesbury Circle, Crossville TN, 38558.

Q: BY WHOM ARE YOU EMPLOYED AND IN WHAT CAPACITY?

A: I am the sole proprietor of Independent Actuarial Services, an actuarial consultancy specializing in retirement system and economic damage analysis.

Q: WHERE WERE YOU EMPLOYED PRIOR TO INDEPENDENT ACTUARIAL SERVICES?

A: Immediately prior to starting my consultancy, I worked for Moody's Analytics in a group devoted to developing and leasing simulation based risk management software. Within this group, I worked directly with the asset managers, insurers, and investment/actuarial consultants that service the retirement industry. While in this role, I developed a prototype for linking strategic pension asset allocation decisions with indicative credit ratings. Earlier in my career, I spent several years with Towers Watson, Mercer, Buck, and other consultancies, focused primarily on the retirement needs of Fortune 100 companies. I consulted on a variety of pension and retiree medical matters, including benefit design, communication, valuation, risk mitigation, service provider fee analysis, pension financing alternatives, and enterprise risk management.

Q: WHAT IS YOUR EDUCATIONAL AND PROFESSIONAL QUALIFICATIONS?

A: I am a Fellow in the Society of Actuaries, and have a BS in Mathematics from Tufts University.

Q: HAVE YOU TESTIFIED IN OTHER REGULATORY PROCEEDINGS?

A: Yes. I have testified on rate cases in Colorado on behalf of the Public Utility Commission, and in Connecticut on behalf of a public utility. I have also served as an actuarial consultant to commissions in New Mexico and Missouri on retirement matters.

Q: EXPLAIN HOW YOUR BACKGROUND QUALIFIES YOU FOR PROVIDING THIS TESTIMONY TO THE MISSOURI PUBLIC SERVICE COMMISSION.

A: As a pension actuary, I have significant pension and retiree medical valuation experience, and am well versed in the accounting, funding, and risk management issues that are integral in this proceeding.

I have additional experience that is relevant in my testimony, based on my volunteer activity with the Society of Actuaries. First, as the ongoing pension representative of the Enterprise Risk Management Curriculum and Examination committees, I am current on emerging best practices that address risk measurement and mitigation, competencies that were in short supply in the period leading up to the 2007-2008 financial crisis. Additionally, as a member of the former Pension Finance Task Force, I worked on several projects integrating basic principles of finance and economics into retirement actuarial practice.

Finally, as an independent consultant, my analysis is not encumbered by any ongoing actuarial relationships I have with individual companies.

II. PURPOSE OF TESTIMONY

Q: WHAT IS THE PURPOSE OF YOUR TESTIMONY IN THIS CASE?

A: I was hired by the Office of the Public Counsel to perform a review of Laclede's and MGE's pension and retiree medical programs, present my findings, and recommend changes to better align Laclede's policies with established regulatory principles.

III. SUMMARY OF FINDINGS

Q: BRIEFLY SUMMARIZE THE RESULTS OF YOUR REVIEW

A: The combination of the Laclede pension, 401k and retiree medical programs can be thought of as a *retirement system*. Stakeholders in this system include employees and pensioners, Company management, shareholders, and ratepayers.

Employees and pensioners have benefitted from this system, as their total retirement package is quite generous – more valuable than their counterparts in non-regulated utilities, and far more valuable than the general ratepaying public.[1] Shareholders have been enriched by this system, as they enjoy near riskless profit on the financing of

[1] See attached "Non-Bargained New Hire Retirement Survey" from Moody's Analytics and "Utility Industry Benchmarking Report" from Aon for more information on the differences between regulated and non-regulated retirement benefits.

pension deficits through rate base.[2] Company management benefits from the system, as they enjoy substantial "tail winds" in meeting financial targets within various incentive programs. Each of these stakeholders benefit at the expense of ratepayers, in particular *future* ratepayers, who are saddled with increasing amounts of pension and retiree medical debt.

The system dynamics are as follows: (a) retirement costs have been systematically understated, (b) risk exposures borne by ratepayers have been actively downplayed, and (c) ratepayers have been subject to excessive plan maintenance fees. The system perpetuates since current utility rates are kept artificially low relative to the true cost of providing the retirement package. In keeping retirement costs artificially low, much of the cost of benefits *already earned* is being put to future generations of ratepayers. These dynamics violate established regulatory principles of expense fairness and reasonableness, and revenue/expense matching.

The policies which led to these outcomes are permissible under the current funding and accounting regimes, and are unfortunately prevalent within the regulated utility sector. However, these outcomes could have been avoided under Spire's stewardship through more proactive management of the various retirement financial policies under its control.

[2] The Company can borrow at cost-of-debt, and then immediately earn pre-tax weighted average cost of capital on contributions made into a trust. Such actions are generally considered credit neutral, as companies are exchanging one form of debt for another. See p. 2 of attached "Pension de-risking gathers pace…" Special Comment from Moody's Investor Service.

Finally, there is a clear difference expressed in the way non-regulated companies manage the various retirement policies vs. their non-regulated counterparts. Non-regulated companies more proactively manage costs and risks, increasingly within a holistic corporate finance perspective, in their quest to maximize shareholder value. Regulated companies also seek to maximize shareholder value – however in this instance, to the detriment of ratepayers.

IV. ANALYTICAL FRAMEWORK

Q: DESCRIBE YOUR FRAMEWORK FOR PERFORMING YOUR ANALYSIS

A: Retirement system finance is complex, in that there are elements of operational cost, investing activity, and debt financing. There are several layers of cashflows that must be examined. The analysis is complicated by the arcane accounting and funding rules which tend to obfuscate the underlying economics. For example, accounting rules under GAAP do not adequately address the price of risk, and include arbitrary "smoothing techniques" that mask the underlying economics. Funding rules under ERISA are driven largely by tax policy which is independent of current market realities.[3]

Q: WHAT ARE THE PRIMARY CASHFLOWS YOU ARE CONSIDERING IN YOUR ANALYSIS?

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[3] MAP-21 created a "corridor" around the "24 Month Average Segment Rates" which had the practical impact of lowering minimum funding requirements. The corridor is not market-based, however. See attached "Funding Stabilization and PBGC Premium Increases" release from Aon Hewitt.

A: I will address each of the relevant cashflows in turn.

The first cashflow to be examined is between employee and Company. Employees "give up" current compensation in exchange for a deferred payout structure in the form of pensions and retiree medical. The long-term nature of these benefits leads many practitioners to describe such arrangements as "bond-like". FASB refers to such deferred compensation arrangements as "debt-like."[4] Moody's treats unfunded pension liabilities as corporate debt in its rating process.[5] The obvious question for this first order level of financing becomes "are the costs of these debt-like obligations properly measured and disclosed?" The answer is important for regulated entities that seek to ensure service is provided at reasonable and fair prices. Like other forms of debt, the liability is interest sensitive. For regulated entities, the interest accrual on this debt-like obligation is "passed through" to ratepayers in the form of allocated costs.

The second set of cashflows to examine relates to the cost allocation methodology. Since ratepayers are ultimately responsible for paying the retirement benefits of utility workers, the question becomes "are the deferred compensation costs of the workforce properly allocated to the customer base receiving utility service?" If not, then future generations

[4] See page 4 of attached "Financial Statement Adjustments in the Analysis of Non-Financial Corporations" methodology paper from Moody's Investor Service.
[5] See page 4 of attached "Financial Statement Adjustments in the Analysis of Non-Financial Corporations" methodology paper from Moody's Investor Service.

of ratepayers are responsible for paying the pensions of former workers, an intergenerational inequity.

A related question is what becomes of the money earmarked for retirement that is collected in rates? Does the Company contribute the amount directly into a dedicated pension or retiree medical trust? What if the Company contributes more into trusts than is collected? If there is a mismatch between what is collected in rates vs. what is funded in trusts, will the difference earn a return? If ratepayers are charged pre-tax weighted average cost of capital ("WACC") on excess contributions paid by the Company above and beyond what they've collected in rates, how does that compare to other forms of financing that may be available?

Importantly, how is the Company investing pension and retiree medical assets, i.e., the strategic asset allocation? Since qualified retirement benefits must be funded through a dedicated trust, the costs are ultimately met through a combination of earnings and contributions. How much risk is being undertaken in the hopes of earning additional returns? Do ratepayers understand the level of risks that are being taken? Are there additional risk mitigation techniques that could be employed? Do accounting conventions incent plan sponsors to take on additional risk when managing earnings?

Lastly, are there excess frictional costs, such as Pension Benefit Guaranty Corporation ("PBGC") variable premiums that could be avoided? The following section summarizes my analysis on each of these issues.

V. FINANCIAL ANALYSIS

Understated Costs

TABLE DGP-1	Pensions			OPEBs		
	LAC	MGE	Total	LAC [1]	MGE	Total
2016 Net Periodic Expense						
Service Cost	7.7	2.1	9.8	10.3	0.2	10.5
Interest Cost	13.9	7.5	21.4	7.1	1.0	8.1
Expected ROA	(16.6)	(10.1)	(26.7)	(7.3)	(1.2)	(8.5)
Amort PSC	0.4	-	0.4	0.8	(0.5)	0.3
Amort Loss	6.3	1.4	7.7	3.5	0.3	3.8
Net Periodic Expense	11.7	0.9	12.6	14.5	(0.3)	14.2
Discount Rate	4.40%	4.50%		4.00%	4.30%	
Compensation Increase	3.00%	3.00%		3.00%	N/A	
Expected Return on Assets	7.75%	7.75%		6.00%	4.75%	

[1] Medical, Life, Group, Senior Officers Life

Table DGP-1 shown above summarizes the 2016 net periodic expense development included in the actuarial reports provided during discovery.

There are two shortcomings in the Financial Accounting Standards Board ("FASB") methodology underlying these expense calculations that serve to underprice the true economic cost of the retirement programs.

First, the "discount rate" shown above for pensions is based on the "settlement rate" guidance put forth by FASB.[6] However, the FASB guidance fails to capture the nature of

[6] The PBGC provides protections up to specified maximums on qualified pension benefits in the event the plan sponsor is unable to meet its obligations.

the pension promise both in theory and in practice. Since pensions are protected under ERISA[7], the theoretical construct of using anything other than US treasury securities as a discount rate introduces an element of default which is contrary to the nature of the promise. In addition, pension liabilities using the FASB settlement rates typically underestimate the market price of pension liabilities. In practice, FASB liabilities are often 10-15% below the market value that is observed in the growing and competitive risk transfer market.[8]

Second, the expected return on asset component of periodic expense does not reflect the inherent riskiness of a portfolio strategy.[9] It is nonsensical that a Company can boost its earnings simply by taking a highly aggressive investment strategy in its pension fund – although that is precisely what happens. As an example, the net periodic pension expense of $12.6 million shown above would almost double to $24 million if the Liability Driven Investing ("LDI") strategy adopted by the Company were fully in force – a perfectly reasonable investment strategy.[10]

[7] The PBGC provides protections up to specified maximums on qualified pension benefits in the event the plan sponsor is unable to meet its obligations.
[8] Examples include the GM and Verizon retiree risk transfer transactions with Prudential.
[9] The LDI strategy is a perfectly reasonable alternative for Companies to employ, as "low risk" portfolios are by definition on the Efficient Frontier.
[10] The LDI strategy is a perfectly reasonable alternative for Companies to employ, as "low risk" portfolios are by definition on the Efficient Frontier.

Non-transparent Financial Risks

Based on the 2016 Annual Report, Laclede Gas pension assets were invested 57% in equities and 43% in debt. While the <u>expected</u> return on such a portfolio is greater than the expected return of a lower risk LDI portfolio, by no means is the expected return guaranteed. In fact, the current asset allocation strategy is probably not much different than what was in place immediately prior to the financial crisis which generated losses in the tens of millions of dollars.

The current Spire portfolio has significant asset/liability mismatch risk – the very same risk that drove the Savings and Loan crisis in the 1980's. Witness Glenn Buck acknowledges this volatility when he states:

> "Prior to the 2002 case, the Company's rates were based on pension expense as calculated pursuant to FAS 87 and FAS 88. Our experience during those years was that FAS 87 and FAS 88 had produced unacceptable volatility and cash flow effects in setting rates." (Buck direct, p. 6)

An inherently risky investment strategy cannot reduce cost volatility simply by changing accounting conventions.

Misallocation of Costs Among Ratepayer Generations

TABLE DGP-2								
			Pensions				OPEBs	
Funded Status 9/30/2016		LAC	MGE	Total		LAC [1]	MGE	Total
Discount Rate		3.50%	3.50%					
Funded Status								
	PBO/APBO	361.9	192.2	554.1		182.8	25.1	207.9
	FVA	246.0	149.7	395.7		134.9	24.8	159.7
	unfunded	115.9	42.5	158.4		47.9	0.3	48.2
	% funded	68.0%	77.9%	71.4%		73.8%	98.8%	76.8%
AOCI								
	Unrecognized Losses	109.4	23.3	132.7		36.8	6.6	43.4
	Prior Service Cost	3.1	5.0	8.1		1.0	(4.4)	(3.4)
	Total	112.5	28.3	140.8		37.8	2.2	40.0
Expected Cashflows 2017								
	Trust Contributions	29.0	-	29.0		10.7	-	10.7
	Benefit Payments	30.9	16.7	47.6		10.0	2.3	12.3
					[1]	Medical, Life, Group, Senior Officers Life		

Table DGP-2 shown above summarizes selected accounting disclosure information from the actuarial reports provided during discovery.

The AOCI entries indicate there is $181 million of "unrecognized" amounts. Under GAAP, these "unrecognized amounts" ultimately flow through into expense, either through the FAS87/106 amortization process, or through FAS88 accelerations. Translating this to English: there is $181 million in expense that has *yet to be allocated* to ratepayers under GAAP[11]. There are technical reasons why GAAP allows this to occur, primarily related to ineffective amortization and smoothing techniques[12].

The funded status entries also indicate the plans are underfunded by $207 million[13]. Unfortunately for the ratepayer, very little of the $181 million in future expense will go toward eliminating the plan deficits. In fact, $157 million is owed to the Company in the form of prepaid assets.[14] Thus, ratepayers currently have unfunded retirement obligations of $364 million: $157 owed to the Company, plus $207 owed to the plan trusts.

Excessive Fees

I have not performed a comprehensive expense review analysis, however there are two obvious areas where ongoing plan maintenance fees have been excessive: first in the amount of PBGC insurance premiums that have been incurred, and second in the amount of finance charges that have been assessed on prepaid assets.

PBGC Premiums

The Moving Ahead for Progress in the 21st Century Act (MAP-21) enacted in 2012 significantly increased PBGC premiums for underfunded pension plans, by dramatically

[11] Equals $140.8 + 40.0
[12] See attached "The smoothing of pension expenses: a panel analysis" research paper by Xiaowen Jeng
[13] Equals $158.4 + 48.2
[14] Schedule E-5, Noack Direct

increasing the "Variable Rate" portion of the premium[15]. In response, most plan sponsors sought to minimize the variable premiums through accelerated funding. PBGC variable premiums can be thought of as a penalty, since the payment goes to the PBGC and not the pension plan.

The table below summarizes the PBGC premium history for LAC and MGE during the last few years.

LACLEDE RETIREMENT INCOME PLAN			MGE RETIREMENT INCOME PLAN		
Plan Year	PBGC Premium		Plan Year	PBGC Premium	
2016/17	Flat Variable Total	$170,624 999,810 1,170,434	2016	Flat Variable Total	$93,952 326,400 420,352
2015/16	Flat Variable Total	139,992 731,592 871,584	2015	Flat Variable Total	86,070 239,736 325,806
2014/15	Flat Variable Credit Total	122,157 0 (210) 121,947			

As indicated, the LAC and MGE plans paid variable premiums to the PBGC of $2.4 million. These premiums could have been mitigated had the Company chosen to fund more money into the pension trusts. However, as indicated in the response to DR-5006,

[15] See attached "Funding Stabilization and PBGC Premium Increases" publication from Aon Hewitt

"We typically fund the minimum amount." Laclede's current funding policy makes no attempt to minimize the frictional cost of PBGC variable premiums.

Rate Base Financing

Rate base financing of incremental contributions to retirement trusts is unreasonable in my opinion, as it forces ratepayers to "borrow" at above market rates[16]. Conceptually, ratepayer debt is swapped from "mortgage-like" debt (at mortgage interest rates) to "credit card-like" debt (at credit card interest rates). Consider:

- Prepaid pension and retiree medical assets are based on financing choices unilaterally placed on ratepayers. The Company sets accounting and funding policy.
- The Company controls how much cash is contributed into the trusts. Funding policies which reference "between the minimum required by federal funding standards and the maximum amount that would be deductible for tax purposes" (DR-5006) are not terribly meaningful. By way of example, under this policy the LAC plan could contribute anywhere between $18 million and $239 million for the 2015 plan year (10/1/2015 Actuarial Report).

[16] While there is no active market for ratepayers to borrow directly, it is important to note that the credit worthiness of ratepayers is quite high, especially when a negotiated settlement is obtained. Rates approaching municipal bond rates might be appropriate, rather than pre-tax WACC as is typical in rate base returns.

- While many utilities claim they are simply following GAAP in setting expense, it is permissible to accelerate recognition of losses[17]. The impact of accelerating loss recognition would be to control the growth of prepaids, and better align costs with the generation of workers driving those costs, a key regulatory principle[18].
- Laclede was unable to provide projections indicating exactly how long the prepaids would remain in rate base.
- This treatment is especially harsh when one considers the events surrounding the financial crisis. Through no fault of their own, ratepayers were subject to massive losses which dramatically reduced pension assets. The federal government dramatically lowered interest rates as part of its stimulus package: cash became very cheap to borrow. Companies were in a position to borrow cash (at historically low interest rates), and then immediately fund the trust back up (covering the losses they created), while simultaneously earning above-market returns on the prepaid. In my opinion, this is a form of arbitrage.
- Finally, prepaid assets result from complicated financing transactions and are very different from typical "investments" such as power plants.

[17] See attached "Pre-empting FASB: mark-to-market pension cost accounting" practice note from Russell Investments.
[18] Witness Glenn Buck acknowledges this goal:; "One of the primary objectives is to ensure that pension and OPEB costs are assigned to the time periods in which benefits are earned." (Buck Direct, p.4).

The following table demonstrates that ratepayers are paying $7.2 million in additional finance charges above a reasonable amount (i.e., based on a long-term cost of debt).[19] If a more reasonable rate of return is applied, the prepaid can be fully amortized over a 20 year period for a minor increase in rates.

TABLE DGP-3			
Return	Laclede Proposed @ WACC	OPC Proposed @ Wgt Cost LTD	Revenue Requirement Difference
Prepaid Pension/OPEB	153,687,092	153,687,092	
Deferred Income Taxes	(58,033,783)	(58,033,783)	
Net Rate Base	95,653,309	95,653,309	
Tax Grossed Up ROR/Cost of Debt	11.6%	4.2%	
Return on Rate Base	$11,087,861	$3,978,221	($7,109,640)
	MGE Proposed @ WACC	OPC Proposed @ Wgt Cost LTD	
Prepaid Pension/OPEB	2,812,626	2,812,626	
Deferred Income Taxes	(1,062,076)	(1,062,076)	
Net Rate Base	1,750,550	1,750,550	
Tax Grossed Up ROR/Cost of Debt	11.6%	4.2%	
Return on Rate Base	$202,919	$72,805	($130,113)
Amortization	LACLEDE	OPC	
Prepaid Pension/OPEB	153,687,092	153,687,092	
Amortization Period	0	20	
Amortization	$0	$7,684,355	$7,684,355
	MGE	OPC	
Prepaid Pension/OPEB	2,812,626	2,812,626	
Amortization Period	0	20	
Amortization	$0	$140,631	$140,631
		Net	$585,232

[19] See Ahern Direct, Schedule PMA-D1

VI. RECOMMENDATION

My analysis and review of the Laclede retirement system suggests there are a few areas where policies can be improved to better align the system dynamics with established regulatory principles. My recommendations are as follows:

A. Create a 20-year amortization payment to write down the prepaid assets. At the same time, lower the return on prepaids from pre-tax WACC to pre-tax cost of debt. This would have the practical effect of keeping rates unchanged while simultaneously addressing the intergenerational inequity problem.

B. Change funding policy to minimize the frictional costs of PBGC variable premiums.

C. Mandate a strategic financing review, considering options such as "borrow-to-fund" strategies that take advantage of historically low interest rates, enabling companies to de-risk more rapidly (e.g., accelerate the glidepath).[20]

D. Mandate an independent retiree medical benefit review, recognizing the dramatic differences in relative richness between MGE and LAC programs.

Q: **DOES THIS CONCLUDE YOUR TESTIMONY?**

A: Yes.

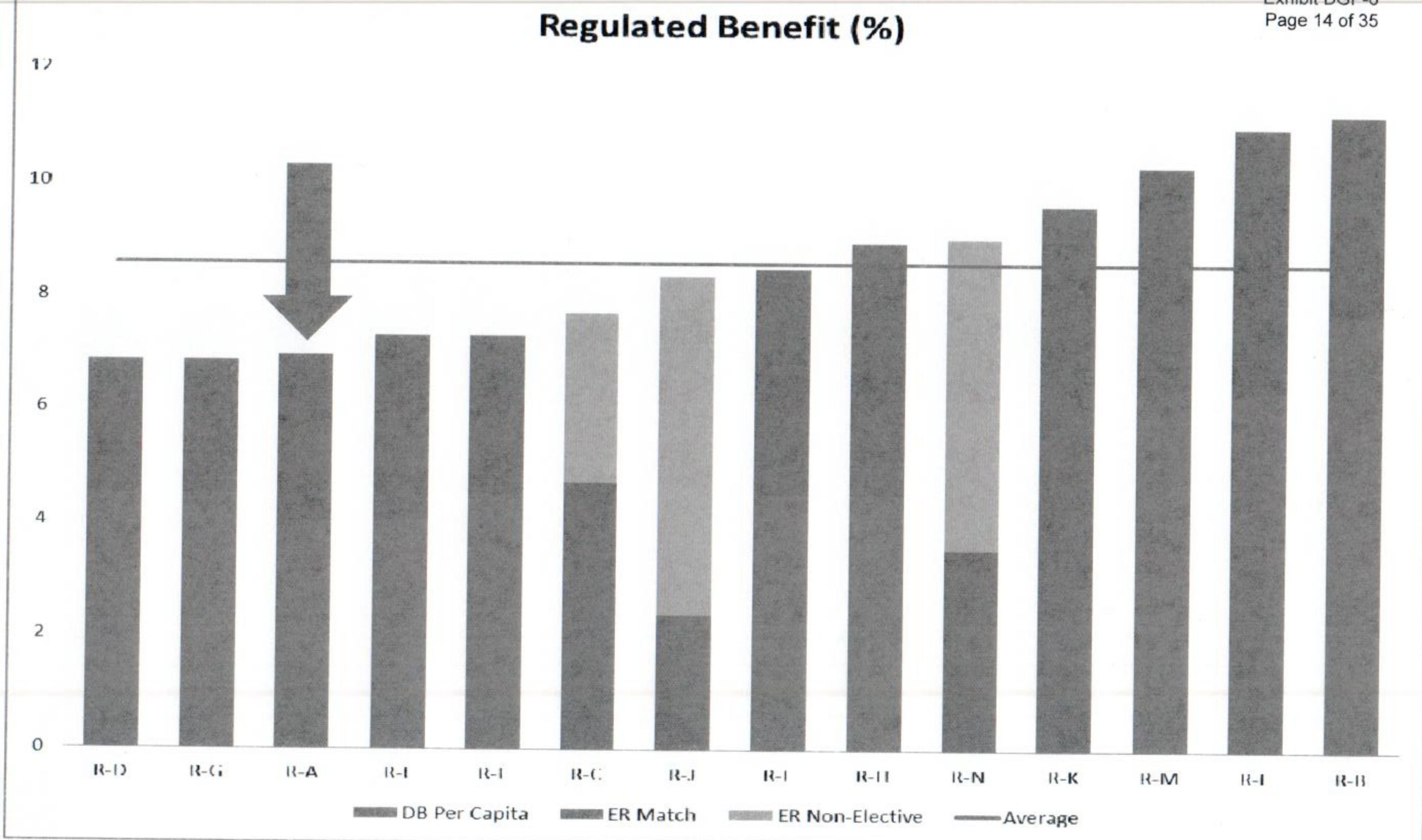
---

[20] See attached "Pension Funding Strategy" whitepaper from Aon Hewitt.

ATTACHMENTS

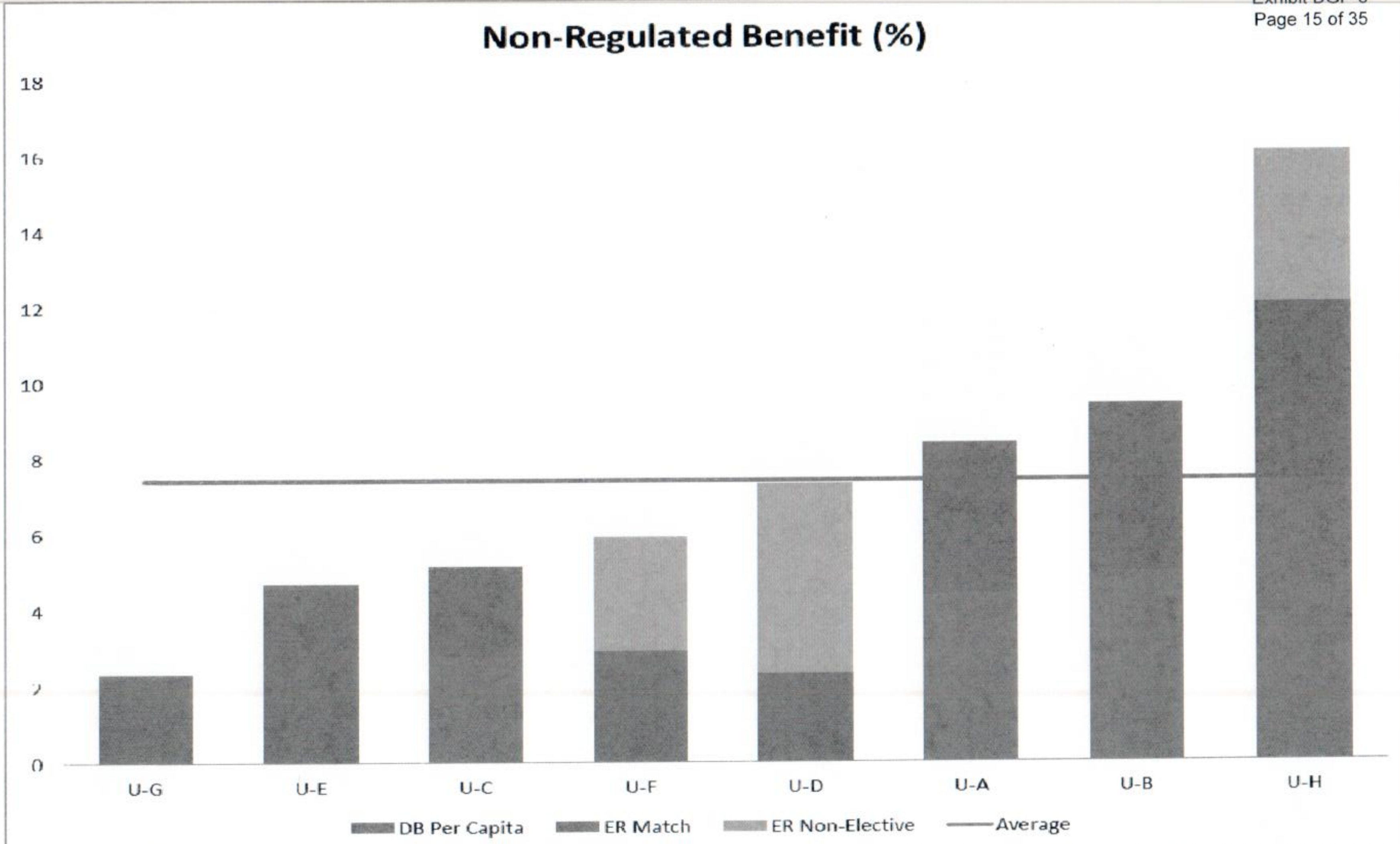
Attachment	Title
A	Non-Bargained New Hire Retirement Survey
B	Utility Industry Benchmarking Report
C	Moody’s Investor Service Special Comment on Derisking
D	Funding Stabilization and PBGC Premium Increases
E	Moody’s Investors Service Financial Statement Adjustments
F	FASB SEC Materials
G	FASB Glossary of Terms
H	The smoothing of pension expenses: a panel analysis
I	Pre-empting FASB: mark-to-market pension cost accounting
J	Pension Funding Strategy

Chart 1-R: New Hire Retirement Costs As a % of Payroll Regulated Utilities



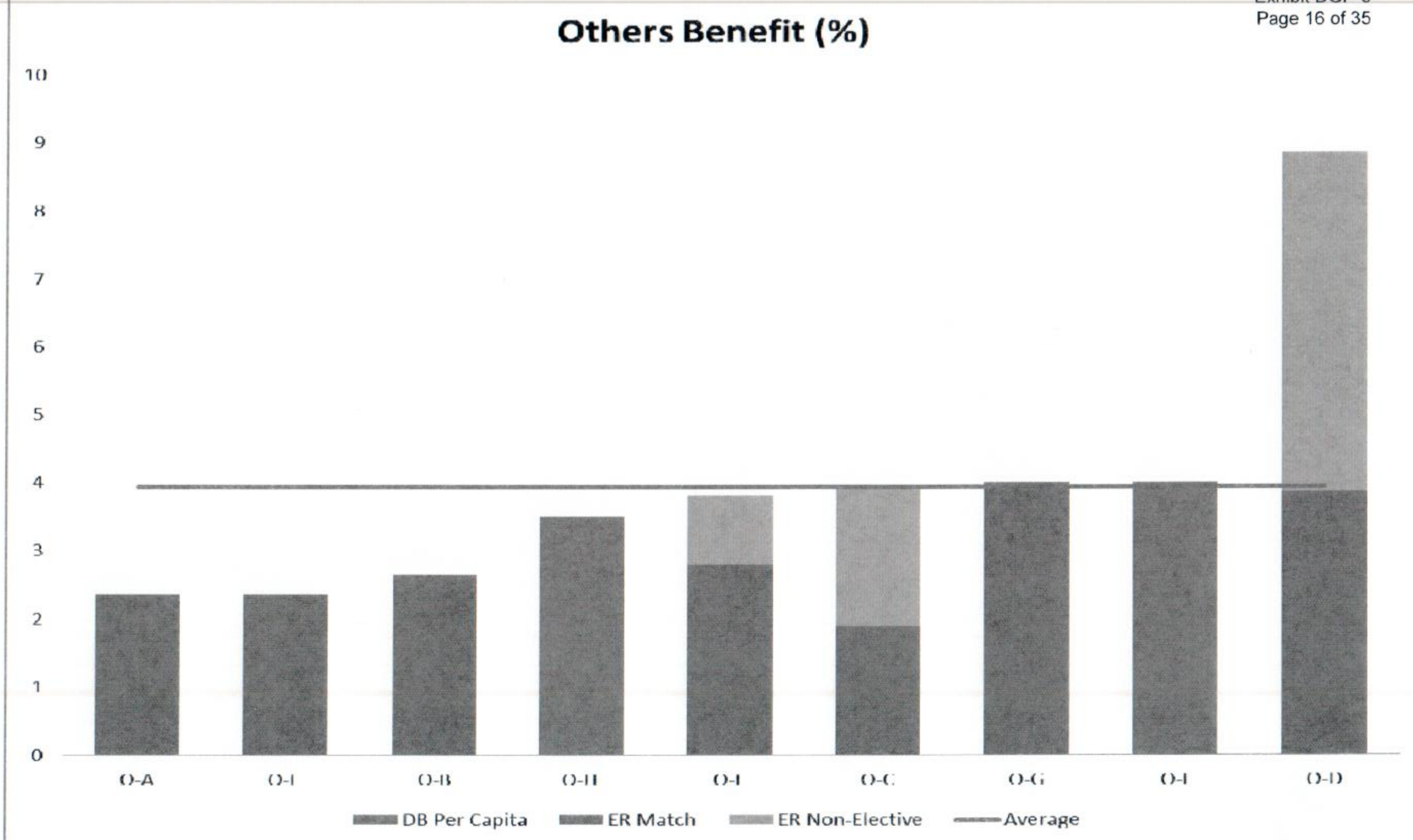
A

Chart 1-U: New Hire Retirement Costs As a % of Payroll Unregulated Utilities



Moody's Analytics

Chart 1-O: New Hire Retirement Costs As a % of Payroll Other Companies



MOODY'S ANALYTICS

B

Aon Hewitt
Retirement & Investment

Proprietary and Confidential

Utility Industry Benchmarking Report

Retirement Benefit Programs in the Utility Industry

December 2016

Risk. Reinsurance. Human Resources.

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Table of Contents

Executive Summary

Our research finds that the Utility Industry continues to provide very valuable retirement benefits to its employees and, despite broader industry trends to the contrary, remains committed to the defined benefit (DB) pension system for providing those benefits. That said, the level of spending on retirement benefits and the degree of commitment toward DB pensions vary considerably among Utility Industry companies.

Retirement Plan Design for Salaried Employees: Trends and Benchmarking

In studying the retirement benefits offered to salaried employees by Utility companies, the following retirement plan design trends emerge:

- The Utility Industry—especially the larger companies—is more committed to defined benefit plans than general industry.
- The primary vehicle for delivering retirement benefits is a cash balance plan.
- Over a participant's lifetime, utility companies contribute more than 10% of pay annually toward retirement benefits.

Retirement Plan Costs: Trends and Benchmarking

We also studied what utilities spend on retirement benefits and how that has trended over time:

- The Utility Industry spent 1.6% of revenues on retirement benefits in 2015—significantly more than general industry, which spent only 0.9%. However, utilities tend to spend less on other benefits and direct compensation[1].
- Significant variation exists, as demonstrated by the fact that the utility spending the most on retirement benefits is spending more than 10 times that of the utility spending the least.
- Despite actions taken by the Utility Industry, utilities are spending more on retirement benefits now than in the previous 10 years.

Retiree Welfare Plan Design: Trends and Benchmarking

As we see with retirement income benefits (defined benefit [DB] and defined contribution [DC]), the Utility Industry also sponsors richer and more broadly available retiree welfare programs (medical, prescription drug, and life insurance). This, of course, leads to higher levels of spending than other industries. With regard to retiree welfare, the following key themes emerge:

- The Utility industry has retained material financial risks related to their retiree welfare programs.
- Significant changes are anticipated in the next few years to contain these risks.
- Potential changes, especially for pre-Medicare coverage, may be delayed due to the uncertain future of the Affordable Care Act of 2010 (ACA) given the outcome of the recent presidential election.

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[1] Aon Hewitt Benefit SpecSelect™ database & 2015 Form 5500s as provided to the U.S. Department of Labor and other publically available information.

Retirement Benefit Management Strategies: Recent Activity and a Look Ahead

- Utility companies are interested in reducing pension risk with settlement initiatives as long as rate recovery is not at risk.
- Utility companies are offering lump sum windows to terminated vested participants at a pace that is only slightly behind that of general industry. Take rates are slightly lower than those observed in general industry.
- Rate-regulated utility companies are structuring settlement initiatives to avoid ASC 715 settlement expense.
- Retiree lift-out activity is expected to increase in the near future.

About 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 retirement plan design within the Utility Industry, and it is the first such report. We plan to publish a second report in the spring of 2017 that focuses on the financial position of utility-sponsored retirement programs and associated strategies for the financial management of their programs.

Details on Employers Included

The utility companies represented in this report include those that are in the S&P 500. These 26 companies range in size from 6,000 to 30,000 employees with an average employee population of 14,000.

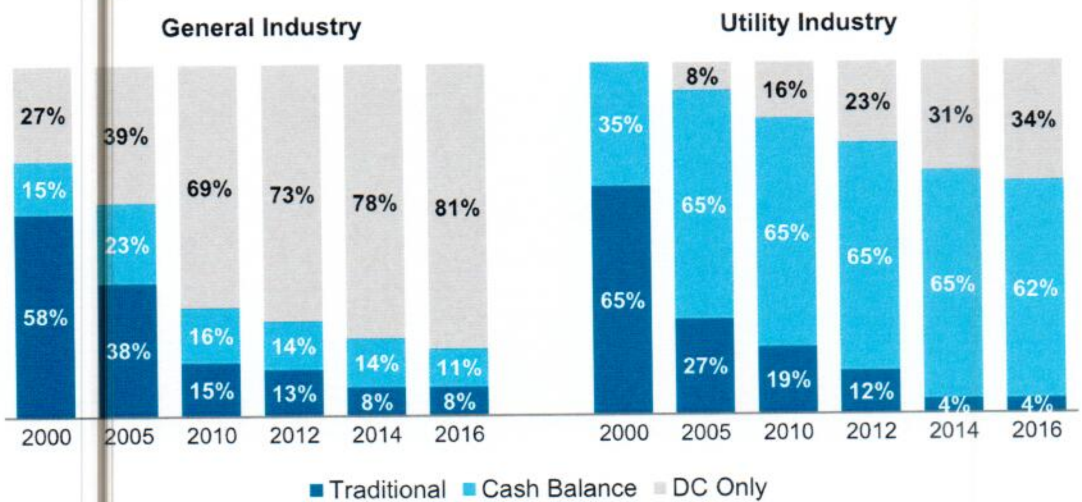
AEE	Ameren Corporation
AEP	American Electric Power Co., Inc.
CNP	CenterPoint Energy, Inc.
CMS	CMS Energy Corp.
ED	Consolidated Edison, Inc.
D	Dominion Resources, Inc.
DTE	DTE Energy Company
DUK	Duke Energy Corporation
EIX	Edison International
ETR	Entergy Corporation
ES	Eversource Energy
EXC	Exelon Corporation
FE	FirstEnergy Corp.
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 Corp.
SRE	Sempra Energy
SO	Southern Company
AES	The AES Corporation
WEC	WEC Energy Group, Inc.
XEL	Xcel Energy Inc.

For plan design purposes, we have used the plan that covers the largest portion of each company's population.

Retirement Plan Design for Salaried Employees: Trends and Benchmarking

New Hire Plan Prevalence

While the vast majority of general industry has moved away from offering a defined benefit plan to newly hired employees, defined benefit plans remain quite prevalent in the Utility Industry, with 17 of the 26 organizations continuing to allow newly hired salaried employees to enter a defined benefit plan. That said, the Utility Industry has moved away from offering a traditional, annuity-based defined benefit plan—only one of the 26 S&P 500 utilities continues to offer such a traditional plan. Cash balance plans have emerged in their place, as 16 of the 17 organizations that still offer a defined benefit plan now offer cash balance designs.



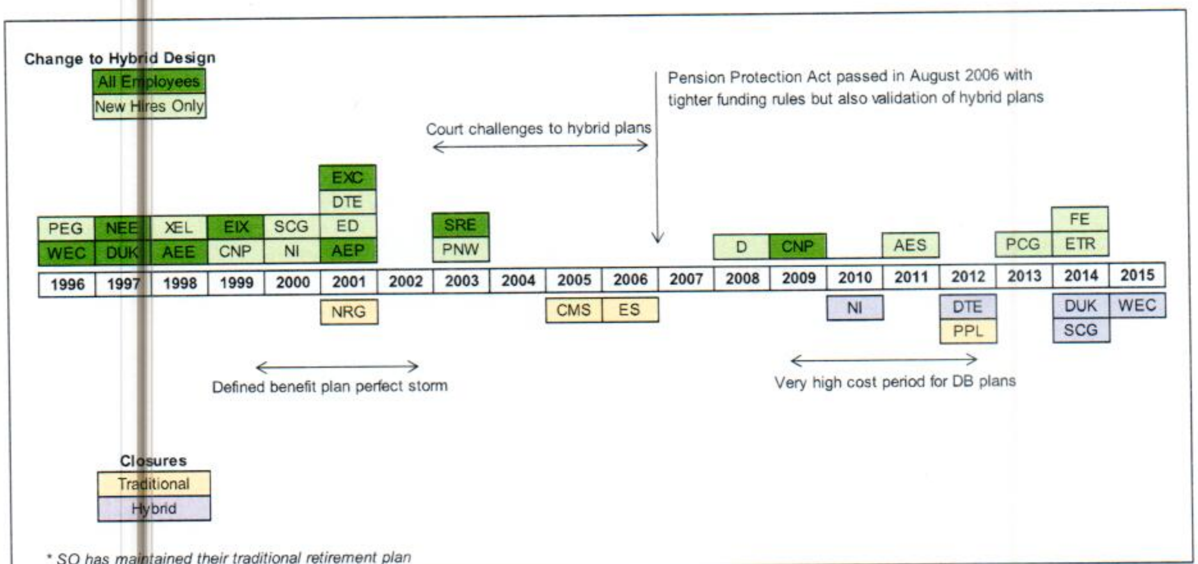
Source: General Industry - Aon Hewitt Benefit SpecSelect™, Utility Industry - Form 5500s as provided to the U.S. Department of Labor and other publically available information.

Why have utilities remained committed to defined benefit plans while general industry has moved away?

- Utilities operate in a heavily unionized environment, which makes changes to existing benefits—in particular, pensions—very difficult. Utilities also often promote from the union to the supervisory level, such that large differences between union and nonunion benefits present business challenges.
- Utilities value the experience and knowledge of long-service employees. Pension benefits tend to promote retention and career stability.
- Utilities often conclude that defined benefit pensions allow for more efficient delivery of retirement benefits, as the company is able to invest the funds and manage longevity risks better than individual plan participants.
- Utilities can, in some cases, be more tolerant of volatile pension costs due to the nature of their business, competitive forces, and the long-term nature of their management horizon.

Tracking Retirement Benefit Changes in the Utility Industry

Specifically for the 26 S&P 500 utility companies, the chart below tracks the changes to defined benefit plans over the past 20 years. The changes to cash balance designs are denoted in green at the top of the timeline, and the closures are shown below the timeline. Companies that originally transitioned to a hybrid plan design and later closed that plan are denoted in purple. Note that the chart captures the changes for the primary plan covering management, or nonunion, employees. In some cases, similar changes were made for the unions at or around the same time, while in other cases the changes were negotiated with the unions much later or not at all.



Source: Form 5500s as provided to the U.S. Department of Labor and other publically available information.

A clear trend was the adoption of cash balance plans in the period 1996–2001, with 13 of the 26 companies doing so in this period. This trend mirrored general industry as cash balance plans emerged as a portable replacement for traditional pensions that was generally more cost-effective than a comparable defined contribution plan. While the pace of cash balance adoption slowed as a cloud of regulatory uncertainty hovered over those plans, utilities continued to adopt cash balance plans through 2014.

It is interesting to note that not a single S&P 500 utility has frozen their plan entirely, whereas approximately 25% of general industry has done so. We did see a handful of companies close their defined benefit plans to new entrants, but at a much more measured pace than other industries. We do expect to see more plan closures, but those likely will occur where there is a catalyst, such as a business combination.

Organizations with a different mix of business will tend to drive different retirement benefit strategies. For example, diversified energy companies with fewer regulated businesses tend to be less unionized and compete for talent with other industries, resulting in more emphasis on DC programs, while heavily unionized, heavily regulated companies have been and will likely continue to be more focused on DB programs.

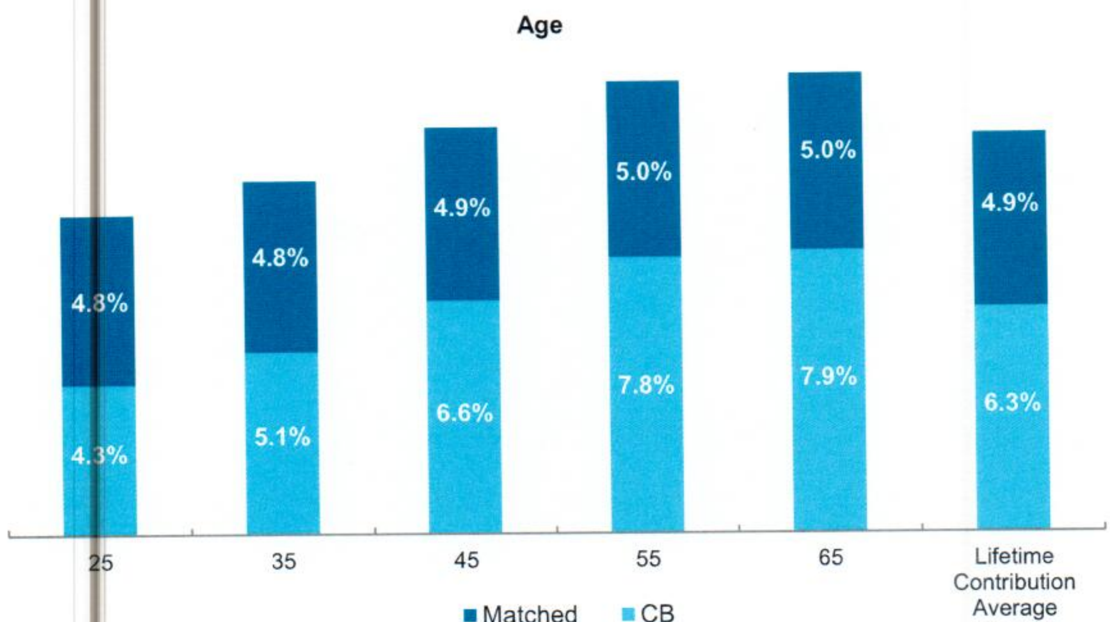
Defined Benefit Plan Coverage in the Utility Industry

Given the benchmarking information provided above, it should come as no surprise that a majority of Utility Industry employees continue to be covered by defined benefit plans. Fourteen companies cover nearly all their employees, while only two companies cover fewer than 50% of their employees. Even companies that have closed their DB plan to new entrants in the recent past will still often have a significant majority of employees participating in a DB plan due to the relatively low turnover in this industry.

Structure of Retirement Benefit Formulas

For the 16 companies that still offer an ongoing cash balance plan for new hires, a full-career employee[2] will receive an average annual employer contribution of about 11% of pay. If an employee saves 6% of his or her own pay, the total annual savings rate is approximately 17%, which our research suggests would allow a full-career employee to retire with adequate retirement income.

Retirement Spend for Age 25 New Hire at Various Career Milestones (Percentage of Annual Pay Employer Contribution)



Source: Aon Hewitt Benefit SpecSelect™, 2015 Form 5500s as provided to the U.S. Department of Labor and other publically available information.

Cash balance designs within the Utility Industry have generally been designed as graded based on age, service, and/or both. As seen in the chart above, entry-level participants have a far lower cash balance contribution—on average, 4.3% of pay—as compared to long-service participants who have, on average, a 7.9% pay credit contributed on their behalf at age 65.

[2]Full-career employee is defined here as someone hired at age 25 who works through age 65.

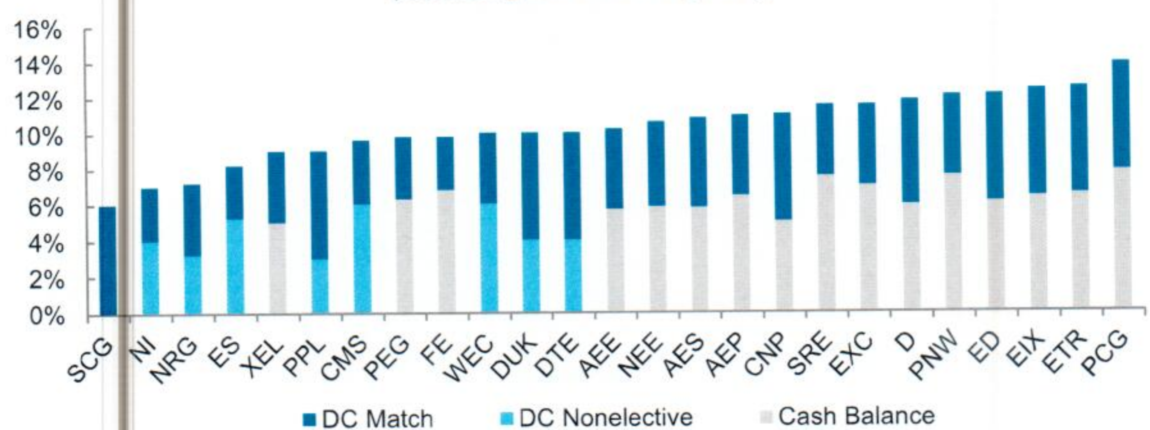
Comparatively, there is far less differentiation on the defined contribution match portion of participant benefits. The difference between the match for an entry-level versus a career participant is only 0.2% of pay, as only one company provides a graded match (based on service).

The graded structure that is typical of cash balance plans can be partially attributed to a desire to replicate the benefit accrual pattern that existed in the prior traditional pension plan, as well as the desire to reward long-term service and incent retention, as discussed earlier.

Average Career Retirement Contribution[2] for Utility New Hires

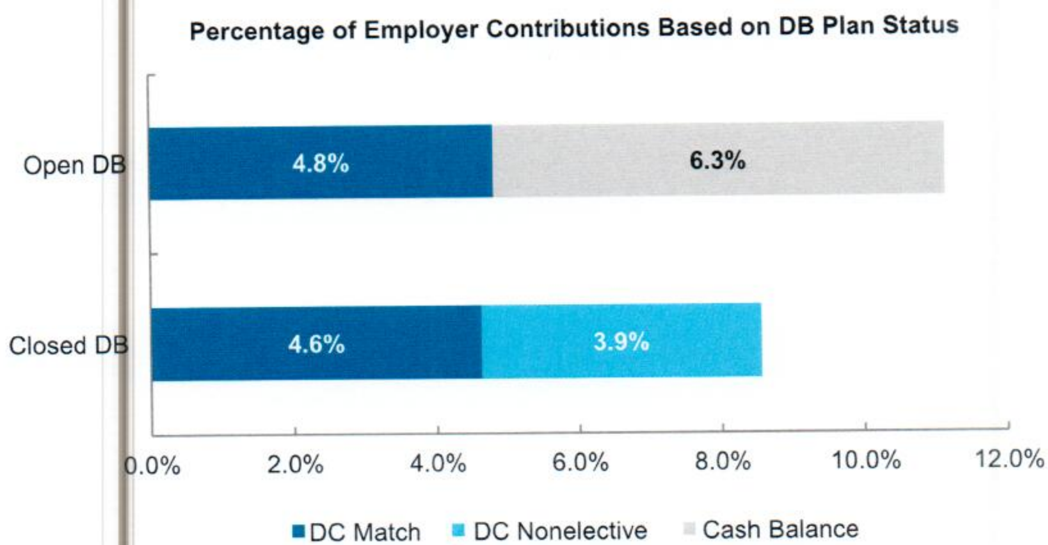
We now consider the lifetime average contribution by company, where we continue to see a wide dispersion in the total annual contribution. Interestingly, there is as much, if not more, differentiation in the level of 401(k) contribution as there is in the cash balance benefit. Perhaps less surprising is that the replacement DC benefits generally provide lower levels of benefits, when measured in terms of the average annual contribution, than cash balance plans.

Lifetime Average Retirement Contribution as a Percentage of Pay (Reflecting New Hire Programs)



Source: Aon Hewitt Benefit SpecSelect™, 2015 Form 5500s as provided to the U.S. Department of Labor and other publically available information.

The nine companies that have closed their defined benefit plans generally provide less generous retirement benefits to their employees. Further, the companies without defined benefit plans also provide a less generous match in their defined contribution plans. The comparison between total employer contributions is shown in the following chart.



Source: Aon Hewitt Benefit SpecSelect™, 2015 Form 5500s as provided to the U.S. Department of Labor and other publically available information.

This analysis is based on 16 companies offering defined benefit plans covering non-collectively bargained employees and nine companies with closed defined benefit plans. One of the nine companies does not offer any type of nonelective contributions. If that company is excluded from the analysis, the total nonelective contribution would increase by 0.5% for the closed DB company average, still falling far short of the average defined benefit cash balance contribution.

Retirement Plan Costs: Trends and Benchmarking

As we shift our focus to the cost profile of the retirement programs sponsored by utility companies, similar themes emerge. In general, the Utility Industry spends more on retirement benefits than general industry, although significant variation does exist among companies within the Utility Industry. Let us separate the cost of retirement benefits into two pieces:

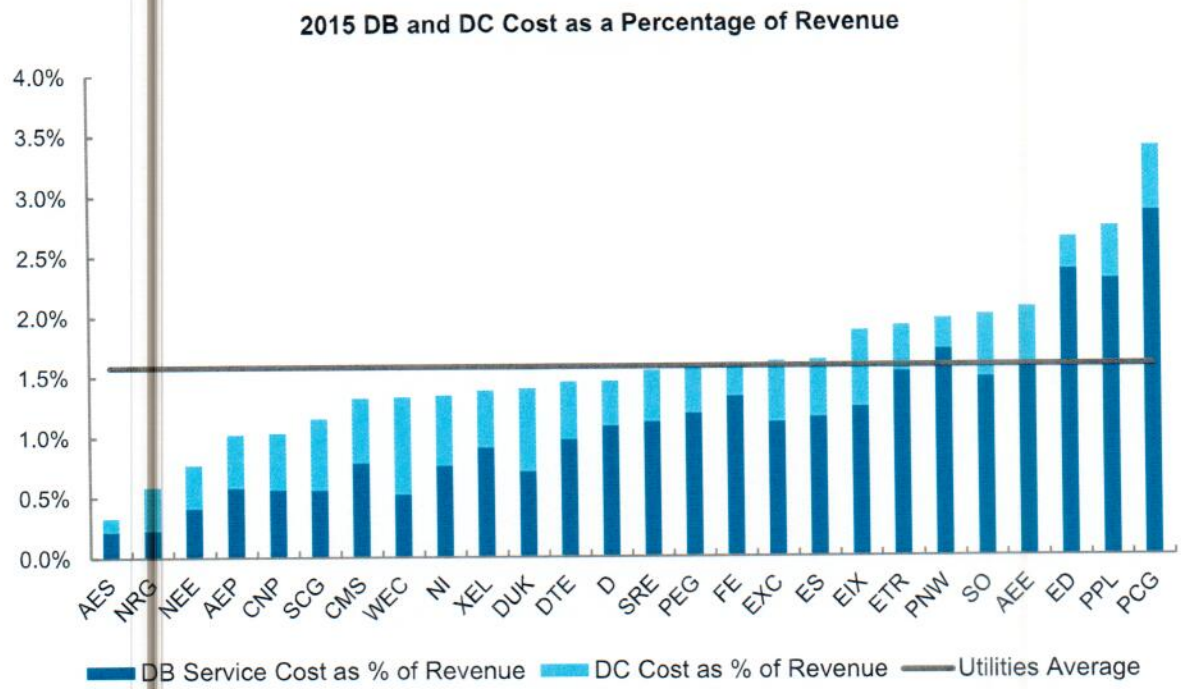
- **Current Service Cost**, or the cost directly associated with the benefits employees earn during a given year in exchange for their service during the year. This is the service cost component of DB pension expense and is the total cost of any DC program in effect. This cost represents the compensation cost associated with retirement benefits and are driven by the value of the benefit and the underlying employee demographics. ***Current Service Cost is the focus of this paper.***
- **Past Service Cost**, which consists of the remaining portions of pension expense, composed mostly of financing costs (interest growth on accrued liabilities and expected return on trust assets) and amortization payments on unexpected changes in assets and liabilities in prior periods. These costs are not the focus of this paper as they are primarily driven by financing decisions such as how much to fund, how to invest the assets, and how plan experience has varied from assumptions over time.

Indeed, the Utility Industry average Current Service Cost for 2015 was 1.6% of revenues while general industry (excluding utilities) was 0.9%. This is particularly noteworthy as the Utility Industry tends to invest more in physical capital than in human capital due to the nature of its business and the importance of infrastructure assets. While utilities do spend more on retirement benefits (as measured as a percentage of revenue) than other industries, it must be noted that they often spend less on other benefit programs and on direct compensation, such that the overall compensation package is market-competitive.

2015 Utility Spending on Retirement Benefits

The chart on the following page shows the distribution of Current Service Cost, allocated among DB and DC plans, for each utility. The dispersion is striking, with three companies spending less than 1% of revenues and another three spending **more** than 2.5%. While the DC costs do vary, the dispersion is primarily driven by the wide range of DB plan costs.

It is worth noting that certain factors can cause distortions in comparing organizations based solely on publicly disclosed financial information, such as the materiality of business operations outside the U.S. and the prevalence of DB pensions in those geographies.



Source: S&P Capital IQ, Company 10-k filings, Aon Hewitt.

Changes in Retirement Program Spend Over Time

Median Current Service Cost, which was 1.5% in 2015, has increased by approximately 50% since 2006, when it was only 1.0% of revenues. This comes as a bit of a surprise given the overall economic landscape and the general trend away from defined benefit plans toward cash balance and defined contribution plans that are often designed to be less expensive. It is particularly remarkable given that revenues for the Utility Industry increased by more than 20% over this same period.

The chart below shows the distribution of Current Service Cost for the Utility Industry over this period. The chart clearly shows that costs have risen almost across the board over this period. It also shows how the distribution of spend has changed. Less than 1.5% of revenues separated the 5th and 95th percentiles back in 2006, while this difference had increased to more than 2.0% by 2015.

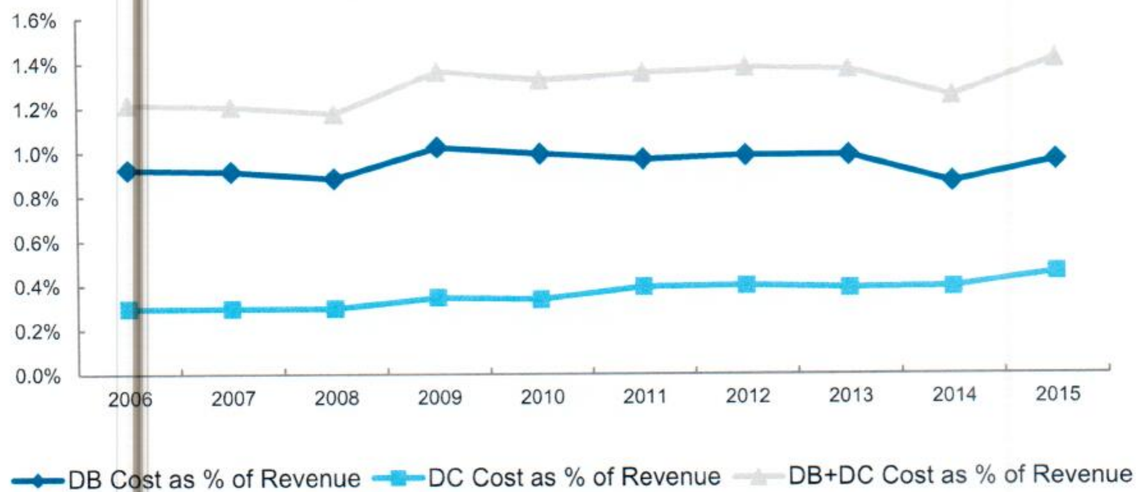
DB + DC Cost as Percentage of Revenue

Source: S&P Capital IQ, Company 10-k filings, Aon Hewitt.

So why have costs continued to increase while numerous utility companies took steps to move away from traditional defined benefit plans toward programs that often provided less generous benefits? Actuarial assumptions are certainly a factor. Discount rates have declined and life expectancies have increased, exogenous factors that both served to meaningfully increase the cost of defined benefit programs.

If we normalize results for fluctuations in discount rates, we see the impact that falling interest rates had. The following chart shows the average Current Service Cost for DC, for DB, and in aggregate over the 10-year period, where DB Current Service Cost has been normalized to reflect a flat 5% discount rate in all years. While less pronounced, we continue to see an increasing cost profile with aggregate costs rising from 1.2% to 1.4% of revenue.

DB and DC Cost[3] as a Percentage of Revenue



Source: S&P Capital IQ, Company 10-k filings, Aon Hewitt.

When we look at results by delivery system, we see that DC plan costs have increased by more than 50%, from 0.29% to 0.45%, contributing 16 of the 20 basis point total increase. This makes sense as we have seen some companies shift emphasis to the DC plan by increasing benefits in those plans while at the same time reducing or eliminating benefits under the DB plan. Over this same period, auto-enrollment—which serves to increase employee participation and associated employer matching contributions—was introduced and is now exceedingly prevalent.

DB plan costs (once normalized) were relatively stable, moving within a range of 0.8% to 1.0% of revenue, rising 4 basis points from 2006 to 2015. While the Utility Industry has generally shifted away from higher-cost DB programs, in many cases these changes have been made for new hires only, and on a staggered basis when considering collectively bargained and nonbargained employees. As a result, it can often take years if not decades for the savings of the lower-cost program to materialize as the longer-service employees continue in the DB plan, where they carry significant costs.

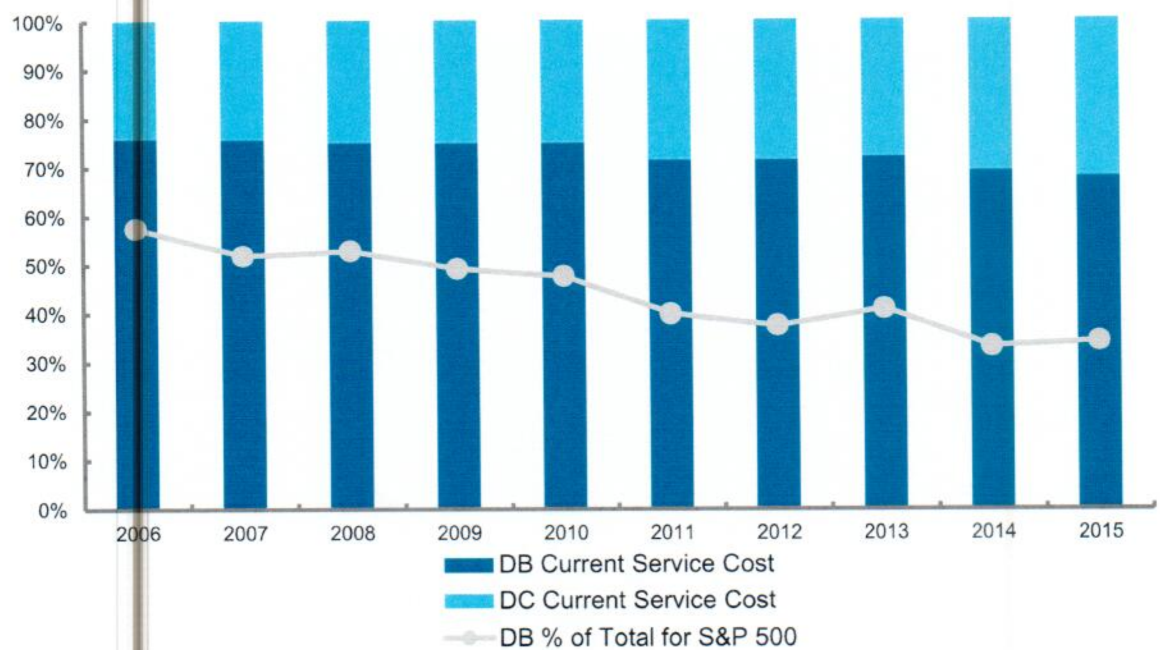
It is also worth noting that stating these costs as a percentage of revenue is helpful when comparing one company to another, but it does present some challenges in the time series data as revenue does fluctuate. The spike upward in 2009 can be attributable to the decline in revenues as the economy was in recession in the wake of the financial crisis. Similarly, strong revenue performance in 2014 accounts for the apparent decline in retirement costs.

[3] DB Current Service Cost is normalized to a 5.0% discount rate in all years.

Mix of DB and DC Plan Spend

In what can probably be gleaned from the information presented thus far, DB plans continue to capture the lion's share of utility spending on retirement benefits, with more than two-thirds of Current Service Cost delivered through DB plans. This compares to only about one-third delivered through DB plans for the broader S&P 500.

Historical Split of Total Cost[4] (DB vs. DC)



Source: S&P Capital IQ, Company 10-k filings, Aon Hewitt.

In the chart above, we have again normalized DB Current Service Cost to a level 5% discount rate over the period. The share of costs delivered through defined benefit plans has decreased from approximately 76% in 2006 to 68% in 2015, a decrease of less than 10%. Over this same period for the rest of the S&P 500, defined benefit plans started at 57% of total retirement plan cost in 2006, decreasing to 34% in 2015, with DC plans exceeding half the total spend starting in 2009.

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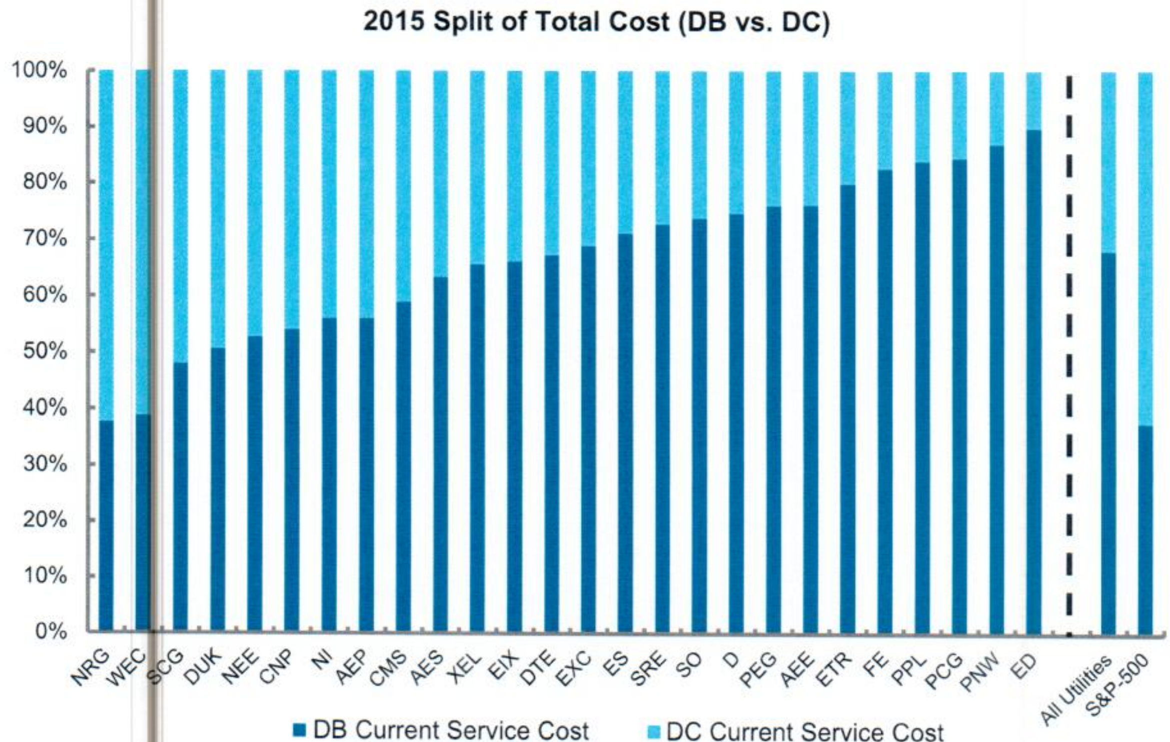
[4]DB Current Service Cost is normalized to a 5.0% discount rate in all years.

In the following chart, we consider this mix for each organization in 2015. Again, significant variation exists within the industry, with similar themes. Less heavily regulated, diversified energy companies tend to have reduced their exposure to defined benefit plans while more regulated organizations have not. That said, even those companies with the lowest proportion to defined benefit plans still exceed the overall S&P 500 average (excluding utilities).



Source: S&P Capital IQ, Company 10-k filings, Aon Hewitt.

Recent Actions and Outlook for 2017

Thus far, we have focused on the current state of retirement benefits in the Utility Industry and the trends that have led us to where we are. We observed that to a great extent, the industry has already made changes to their retirement income programs (defined benefit and defined contribution), and that activity has appeared to level off. While utilities have not been focused on structural redesigns of their programs, it has by no means been a sleepy period for pension plans. Instead, there has been an increased focus on pension de-risking actions. In this section, we examine the strategies that have been at the top of our clients' agendas over the past few years, as well as what we expect to see in 2017 and beyond.

Pension Settlement Initiatives

Settlement initiatives, such as lump sum windows to participants with deferred benefits and small annuity lift-outs, have been increasingly popular in reducing pension risk in both general industry and the Utility Industry. While settlement initiatives do not generally reduce pension expense, they **do** reduce pension risk by reducing the size of the pension plan relative to the sponsoring company. In many cases, the long-term costs of the plan are also reduced by avoiding per capita costs such as Pension Benefit Guaranty Corporation (PBGC) premiums.

Terminated Vested Lump Sum Windows

Lump sum windows for terminated vested participants are a first-step settlement initiative for many companies. Terminated vested participants are participants who have terminated employment but have not commenced retiree annuity benefits[5]. Utilities that have historically offered traditional pension plans which did **not** offer lump sum payments may have significant liabilities for terminated vested participants. Even utilities that now accrue cash balance or defined contribution benefits will often maintain liabilities for legacy terminated vested participants for many years after the plan change.

A lump sum offering to terminated vested participants provides a benefit that many find attractive. In addition, lump sums are settled at market interest rates without margins for profit or anti-selection, making them attractive to employers. In addition to reducing pension risk by reducing the size of pension obligations and assets, lump sum windows have been popular over the last three years because they:

- Reduce prospective PBGC premiums, which are becoming increasingly burdensome;
- Reduce ongoing administrative carrying costs; and
- Reflect low-cost mortality tables that generally assume shorter life expectancies than companies assume when reporting their accounting obligations in their financial statements.

[5] The IRS has generally imposed a moratorium on lump sum activity for retirees who have already commenced an annuity benefit.

Current PBGC Premium Savings Potential May Be Significant

Companies whose variable-rate PBGC premiums are capped ($517 per participant in 2017) will find headcount reduction through settlement initiatives the most effective way to immediately reduce ongoing PBGC premiums. For a plan that is currently underfunded[6] and at the variable-rate cap, reducing headcount by 1,000 participants will reduce annual PBGC premiums by $586,000 in 2017 ($517,000 in variable-rate premiums plus $69,000 in flat-rate premiums). Savings of this magnitude continue annually until the plan's PBGC funded status improves.

Low-Cost Mortality Tables Continue to Be Available for 2017 Lump Sum Windows

The minimum requirement for lump sum payments from a pension plan is currently based on a mortality table that reflects shorter longevity than is indicated by recently published tables. Experience published in 2014 by the Society of Actuaries indicates participants are living longer. Annuities will be paid over a longer time, and therefore, the lump sum equivalent of an annuity will be higher. While most companies have adopted the newer "RP-2014" family of tables for purposes of pension accounting, pension plans are not yet required to pay out lump sums based on the new tables. In fact, the Internal Revenue Service indicated that new tables will not be required until at least 2018. Therefore, lump sum windows that make payments prior to 2018 may calculate lump sums based on the shorter longevity tables.

Interest rate levels during 2016 will also influence the attractiveness of lump sum windows in 2017. Interest rates have been very volatile during the year, in particular in the wake of the presidential election, such that the impact this will have on potential lump sum windows in 2017 is difficult to predict and will vary by plan sponsor.

Term Vested Lump Sum Prevalence in the Utility Sector

PBGC data from 2014 shows that the Utility Industry believes in the regulatory viability and impact of lump sum windows almost as much as general industry. The percentage of utility defined benefit plan sponsors offering a lump sum window was slightly less than the percentage of general industry.

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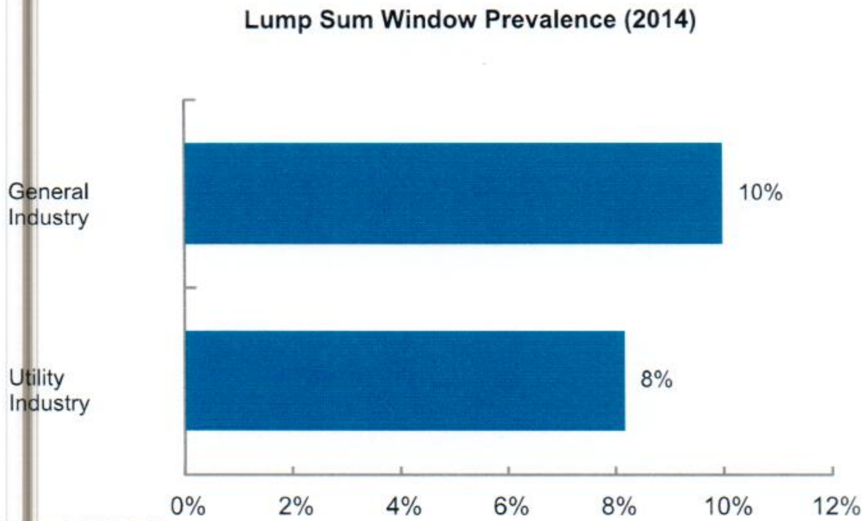
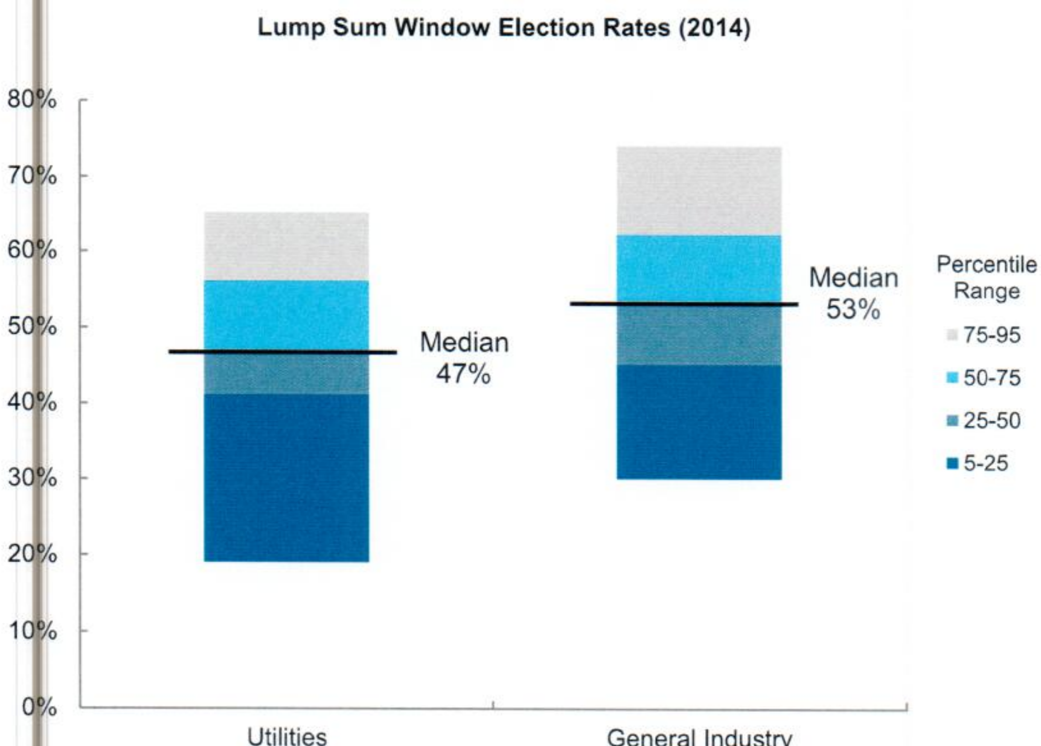
[6]PBGC underfunding for premiums is based on market interest rates that do not reflect interest rate relief provided by the Bipartisan Budget Act of 2015. The plan funding shortfall used for PBGC premium determination will be significantly higher than the plan funding shortfall used for minimum annual contribution requirements and benefit restriction testing.



Source: Aon Hewitt & PBGC filings.

There are many factors that influence how many participants will accept a lump sum window offer. Among the strongest are the robustness of communication efforts and the size of the lump sum amounts. The utility sector population shows a somewhat lower election rate than that observed in general industry with a median election rate of 47% in the utility sector versus 53% in general industry. Possible drivers for this disparity include a historic emphasis of defined benefit paternalism by utility companies, and possibly higher benefits.



Source: Aon Hewitt & PBGC filings.

An alternative to a window offering of a lump sum is the permanent addition of a lump sum option to terminated vested employees. A window approach is the most effective at maximizing the immediate pension risk reduction and potential economic savings, using current mortality tables. A permanent lump sum feature will, however, continue to provide an opportunity for the plan to settle some risk over time when each participant commences their benefits.

Rate-Regulated Utility Considerations

For most regulated utility entities, reducing long-term pension costs ultimately reduces customer rates since administrative carrying costs and PBGC premiums are typically paid by the pension plan. Pension risk is often quantified as volatility in pension funded status and pension expense. For companies whose rate recovery is dependent on pension funded status or expense, a reduction in pension volatility is a reduction in rate volatility. In some cases, volatility may imperil full recovery of pension expense in years in which expense spikes. Then, reduction in pension risk is potentially beneficial to both ratepayers and the regulated business units of the company.

Avoiding One-Time Accounting Settlement Expense

Lump sum window design in the Utility Industry is substantially influenced by aversion to Accounting Standards Codification (ASC) 715 settlement expense. A settlement expense is mandatory if lump sum payments and other plan settlements during the fiscal year exceed the sum of the plan's ASC 715 service and interest costs. The one-time expense consists of an acceleration of unrecognized plan losses, **excluding any offset from a pension regulatory asset**. If required, the one-time expense will be material for most pension plans because they have accumulated significant unrecognized losses over the last 10 years during which markets have been volatile, discount rates have generally been decreasing, and estimates of participant longevity have increased.

Analysis of settlement expense potential is critical to utilities due to recovery considerations. The vast majority of state utility commissions use ASC 715 expense as a consideration for rate recovery[7]. In these cases, amortization of unrecognized losses may be included in the basis for recovery. Since settlement expense accelerates recognition of these unrecognized losses, the future amortization will be reduced. But, will a utility's regulated business units be able to negotiate recovery of the one-time expense in every jurisdiction in order to record an offsetting regulatory asset? If not, the company has permanently forgone recovery on some of its past-service pension obligations.

None of the investor-owned utility companies who offered a lump sum window in 2014 recognized a settlement expense in 2014[8]. Either the windows were insignificant in size, or the utilities decided the risk to recovery was significant and implemented design features that capped window payments.

Design features that reduce or eliminate the risk of settlement expense include individual lump sum limits and aggregate lump sum thresholds. Utilities contemplating lump sum windows should consider implementing these design features if settlement expense is of concern.

[7]85% of state utility commissions use ASC 715 expense as a basis for deciding level of recovery as reported in the Oregon Public Utility Commission Pension Survey "Pension Treatment in Rate Making Survey" published March 28, 2013.
[8]Source: 2014 10-K reporting for companies publicly traded who reported a 2014 terminated vested lump sum window to the PBGC.

Small Benefit Retiree Annuity Lift-Outs

More recently, settlement initiatives have also addressed retiree obligations. Although the IRS has issued a moratorium on retiree lump sum windows[9], companies may still settle retiree obligations with the purchase of annuity contracts from insurance companies. With utility companies carrying large retiree obligations, we expect more of this "retiree lift-out" activity in the Utility Industry in the future after term vested window activity diminishes.

A retiree lift-out is not a plan termination and avoids many of the complexities associated with the plan termination process. The plan sponsor will still need to follow a formal insurance company selection process, but overall, the entire transaction is considerably shorter in duration than a plan termination.

Similar to a lump sum window, the retiree lift-out has the objectives of eliminating pension risk and reducing long-term costs. Typically, the plan sponsor will quantify the costs of carrying retirees, such as administrative fees and PBGC premiums, and compare those with estimates of annuity pricing from an insurance broker. The smaller the annuity payment, the more likely the company will see a reduction in long-term costs because:

- Flat-rate fees and premiums are a higher percentage of cost for smaller-benefit retirees; and
- Insurance companies typically provide better pricing for smaller annuities based on statistics indicating that smaller benefits are associated with shorter longevity. A break-even analysis will indicate the range of annuity benefit levels that reduce long-term cost.

Similar to a lump sum, a retiree lift-out is a settlement under ASC 715. To avoid settlement expense, the sum of lump sums and annuity purchases during the fiscal year cannot exceed the sum of the ASC 715 annual service and interest costs.

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[9] See IRS Notice 2015-49. Lump sums may be offered to retirees as part of a plan termination. An extant approach to eliminating retiree obligations through lump sum payments is to spin off retiree obligations into a separate pension plan, and then terminate the retiree plan. This less common "spin/term" method is complex and is beyond the scope of this paper.

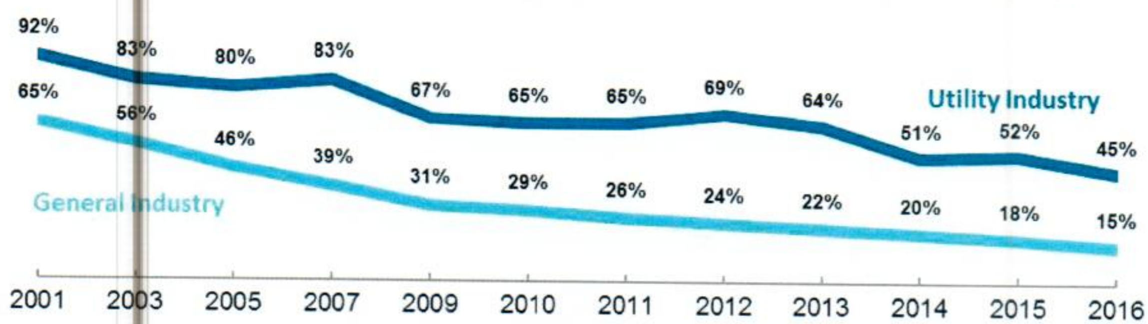
Retiree Health Care Programs

Employers have been actively changing their U.S. retiree health care programs to reduce future employer subsidies since the late 1980s, when the Financial Accounting Standards Board announced that private sector employers would be required to account for the costs of health and other postretirement benefits for current and future retirees. This started the steady erosion of the employer's share of retiree health care costs.

Reduction of Employer Subsidies

The first area of reduction was the elimination of employer subsidies for new employees. The 2016 Aon Hewitt Benefit SpecSelect™ database shows that only 15% of general industry employers offer a subsidy for retiree medical coverage for new salaried employees compared to 65% of such employers in 2001. While a higher percentage of utility employers provide employer subsidies to new salaried employees, more than half of utility employers no longer provide any subsidy.

Percentage of Employers Providing Retiree Medical Subsidy for New Salaried Employees



Source: Aon Hewitt Benefit SpecSelect™ historical database.

Employers have also been implementing other changes to reduce accounting obligations. These changes have included raising deductibles, increasing retiree contributions, and implementing caps on the level of employer subsidies. In some cases, current retirees have been insulated from these changes while the employer-paid benefits for future retirees have been reduced.

In some instances, employer changes allowed for the more efficient delivery of health care benefits, such as transitioning to an exchange for Medicare-eligible retirees, and did not have a material impact to the retirees. However, most of the time, the retirees had to assume the costs being eliminated by employers.

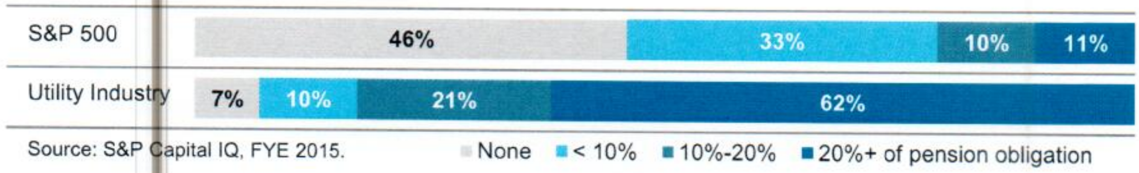
Accounting Obligations Remain Material

The continuation of legacy programs for certain employee groups, combined with high health care inflation over the past 25 years, has resulted in employers retaining significant retiree health and welfare benefit obligations despite changes to reduce benefits. This is especially true for the Utility Industry, where employers have made fewer changes to reduce benefits for current and former employees.

The materiality of the retiree welfare obligations can be measured in comparison to the pension obligations, as virtually all employers providing retiree health care benefits also carry a pension obligation. As shown in the graph below, 11% of S&P 500 companies have a retiree welfare obligation that is at least

20% of their pension obligation. This stands in stark contrast to the Utility Industry, where 62% of employers have a material retiree welfare obligation.

Percentage of Employers by Materiality of Retiree Welfare Obligations

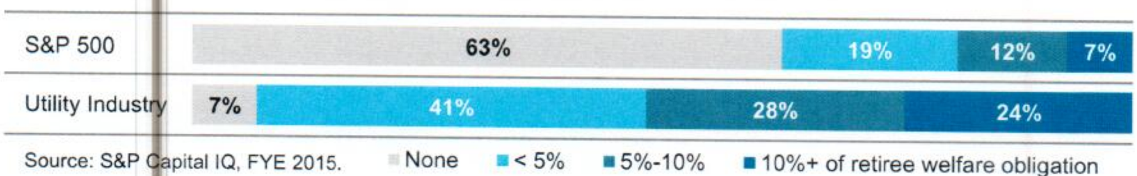


Risks From Health Care Inflation

Many employers have adopted subsidy caps or shifted to a defined contribution approach for at least a portion of their current and future retirees. These caps mitigate company risks and higher accounting obligations associated with health care inflation. However, some risk still remains where caps are not in place for all participants.

The risk from health care inflation can be measured by the impact that a 1% increase in health care trend assumptions has on retiree welfare obligations. The graph below shows that most S&P 500 companies have eliminated the potential company risk of health care costs rising faster than expected. The Utility Industry has also taken steps to reduce this risk, though meaningful exposure remains for some utility employers.

Percentage of Employers by Health Care Inflation Risk



Looking Ahead: Changes Expected but Direction and Timing Uncertain

The ACA includes several provisions that offer employer incentives to substantially reduce accounting obligations for retiree health care. Some employers have acted on these incentives, although most have waited to make major changes until the new provisions are fully effective and/or the market has stabilized.

With the results of the 2016 presidential election, the uncertainty around the ACA has only grown. Given the possibility of key ACA provisions being repealed, we expect many employers who were considering changes will now delay action until there is more clarity around future legislation. Actions most likely to be delayed would be those related to pre-Medicare coverage and the excise tax for high-cost employer-sponsored plans.

The following information summarizes the areas where the ACA had the greatest impact on retiree health care and related actions being considered by employers. *Note that the survey data shown below was collected before the 2016 presidential election outcome.*

For pre-Medicare retirees and their former employers, the most significant ACA change was the creation of the new state/federal exchanges with insurance reforms. For the first time, pre-Medicare retirees can purchase health coverage on a guaranteed-issue basis with no pre-existing condition exclusions at below-market premiums through federal mandates and incentives. While few employers are currently using these exchanges for their retirees, the majority are considering their use in one of two ways. The first is to provide an employer subsidy that can be used to purchase coverage through the exchanges. The second is to eliminate pre-Medicare coverage entirely, which would require retirees to purchase coverage independently. If retirees choose to purchase coverage through the exchanges, they would potentially be eligible to receive the federal subsidy.

Pre-Medicare Coverage	**Changes Since 2010** (n=229)	**Changes Being Considered** (n=164)
Individual Market With Employer Subsidy	6%	35%
Eliminate Pre-Medicare Coverage		29%
No Major Changes	94%	34%
Other		3%

Source: Aon Hewitt's *2016 Retiree Health Care Survey*

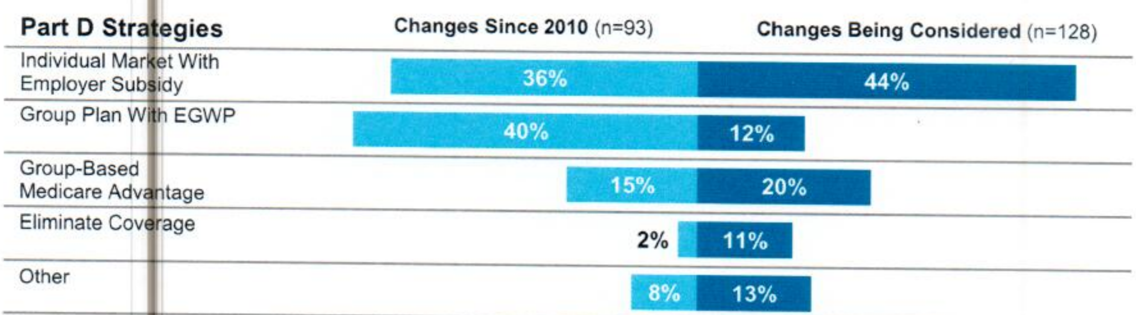
The ACA also created a 40% excise tax for high-cost employer-sponsored plans beginning in 2020 that will apply to many employer plans for pre-Medicare retirees. While the effective date of this tax is delayed, many employers already have to reflect the cost—to the extent it will be employer-paid—in their benefit obligations. There are several options being considered by employers to mitigate this excise tax, as shown below.

Tax Mitigation Strategies	**Changes Being Considered** (n=179)
Raise Premiums *(retirees will pay tax)*	20%
Reduce Coverage *(e.g., higher deductibles or coinsurance)*	28%
Individual Market With Employer Subsidy	20%
Eliminate Pre-Medicare Coverage	11%
Already Mitigated *(e.g., capped subsidy)*	14%
No Changes *(employer will pay tax)*	6%
Other	2%

Source: Aon Hewitt's *2016 Retiree Health Care Survey*

For Medicare-eligible retirees and their former employers, the significant changes in the ACA were elimination of the tax advantages associated with the federal Retiree Drug Subsidy (RDS) in 2013 and enhancements to the Medicare Part D program that is gradually reducing the cost for prescription drug benefits. These events have encouraged plan sponsors to change their prescription drug programs, by shifting to the individual market where retirees can purchase Medicare Part D policies, integrating directly with Medicare Part D, or switching to employer group waiver plans (EGWPs), an attractive alternative to receive government subsidies for group post-Medicare prescription drug coverage.

Because these ACA changes are already effective, many employers have already implemented changes to their post-Medicare prescription drug programs. As shown in the chart below, 93 respondents already changed their program while 128 are considering changes.



Source: Aon Hewitt's *2016 Retiree Health Care Survey*

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SPECIAL COMMENT

Pension de-risking gathers pace – 2012 rule phase in makes pension plan terminations more economically viable

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Summary

After the financial crisis of 2008 coupled with the stringent funding requirements of the Pension Protection Act of 2006 (PPA), we are observing many companies starting to implement strategies to reduce pension risk. Due to regulations designed to protect participants' vested benefits, the cost of terminating a plan has been prohibitively expensive. However, beginning in 2012, with certain provisions contained in the PPA being phased in, this route will be more economically viable.

In the coming years we expect to see more companies actively de-risking pension plans through use of some or all of the following methods:

» Making voluntary contributions to achieve fully funded status

» Implementing liability driven investing strategies

» Freezing plans

» Defeasance of obligations

From a credit perspective, use of some or all of the above methods will be, for the most part, credit positive, depending on the individual company circumstances.

Various Options Exist to Reducing Pension Risk

Plan sponsors have several options to reduce or completely eliminate pension risk. We view the elimination or reduction of pension risk as a credit positive, however the resulting positive must be weighed against the cost involved. If a company could eliminate pension risk at little to no incremental adjusted leverage or cannibalization of essential investment, we believe this could be a strong credit positive, although an unlikely scenario.

See Table I for a summary of the currently available main levers to reduce or eliminate pension risk and our general view on the credit implications

TABLE 1

Strategy	Summary	Credit Implication
Voluntary Contributions	Contributions in excess of required	Positive
Liability Driven Investing	Switching asset allocation to more effectively match durations	Neutral
Plan Freeze	Ceasing some or all benefit accruals going forward	Positive
Defeasance of Pension Obligation	Plan termination	Positive

In addition, due to provisions in the PPA coming into effect in 2012[1], the ability to completely eliminate pension risk by offering lump sum buyouts to plan participants will become more economically viable.

Given the lingering hangover from 2008 and the lower cost to terminate plans beginning in 2012, we expect to see many more companies implementing some or all of these strategies to de-risk their pension plans.

Increasing Amounts of Voluntary Contributions

Companies with under-funded pension plans may make voluntary contributions in excess of those required by the stringent funding requirements of the PPA. For example in February 2011, Exelon Corporation (Baa2 senior unsecured / stable outlook) announced $2.1 billion of contributions to its pension plans in 2011 even though it was only required to contribute $800 million. Due to the contractual nature of pension obligations, we view the pension liability as "debt-like," and any pay down of pension liabilities akin to pay down of debt.

While there is no one-size-fits-all answer, the result of voluntary contributions is likely to be credit neutral to positive, dependent on the method of funding. Contributions from excess free cash flow which do not stress liquidity or require cutting of essential investment will likely be viewed as a credit positive. Conversely, companies that borrow to fund their pension obligations are exchanging one form of debt for another, which will typically be a credit neutral event. Moody's will evaluate the terms of the borrowing, conditions and maturity profile consistent with how we evaluate any other debt incurred.

1 Prior to the PPA, discount rates for calculating lump sum buyouts were based on a treasury rate. For years 2008 to 2011 the PPA required the rate be a blended treasury and corporate rate. Commencing in 2012 the discount rate will be based on high quality corporate rates, thus resulting in lower lump sum payouts.

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Funding Stabilization and PBGC Premium Increases

Strategic Implications for Pension Plan Sponsors

October 2012

Aon Hewitt | Hewitt EnnisKnupp, An Aon Company

Aon Hewitt and Hewitt EnnisKnupp previously published two white papers on the recent pension funding stabilization legislation. The first, which was published almost immediately after the bill was passed, focused on the regulatory aspects of the changes. The second, published a few weeks later, focused on the implications for pension risk management. With new guidance from the IRS on the law, this piece updates and combines the two prior pieces.

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On June 29, 2012, the House and Senate passed H.R. 4348, the Moving Ahead for Progress in the 21st Century Act (MAP-21), which includes both pension funding stabilization provisions and PBGC premium increases. The President signed MAP-21 into law on July 6, 2012. On August 16, 2012, the IRS issued guidance on the MAP-21 interest rates to be used in 2012 valuations. Most recently, on September 11, 2012, the IRS issued further guidance on the implementation of the MAP-21 pension funding stabilization provisions.

This document provides an overview of MAP-21's pension-related provisions, an analysis of how they will impact plan sponsors and participants, and a discussion of the strategic implications for pension plan funding and investment policies.

Executive Summary

MAP-21 makes important changes to the regulatory environment facing pension plans. Most notably, it reduces the required contributions for many plan sponsors over the next several years. Further, MAP-21 raises the long-term administrative costs through a sizable PBGC premium increase, especially for plans that run large deficits. Pension plan sponsors will need to consider their funding, investment, and administrative policies in light of these changes:

- Most pension plans will have lower required pension contributions over the next several years, though ultimately plan sponsors are still required to pay for the benefits promised.
- While required contributions are at least temporarily lower, per-participant PBGC premiums will rise by 40% by 2014, and variable rate PBGC premiums will double as a percentage of unfunded vested benefits by 2015.
- Furthermore, sponsors that take advantage of MAP-21 to reduce their cash contributions will see higher unfunded vested benefits than they would have in the absence of funding stabilization. PBGC variable rate premiums, already doubling by 2015 as a percentage of the unfunded liability, will rise further as the unfunded liability increases.
- Higher PBGC per-participant and variable rate premiums raise the cost of running a pension plan, especially an underfunded one. Some sponsors will respond by seeking to reduce participant headcount via lump sum cashouts and annuity purchase strategies. Others will respond by actually increasing their pension plan contributions or changing to lower-risk investment strategies in order to minimize current or prospective deficits.
- MAP-21 has effectively eliminated interest rate risk from required funding calculations for the next several years. Sponsors who expect interest rates to rise may take advantage of this window to maintain or actually reduce interest rate duration in their investments, in the expectation that interest rates will rise in the future, turning short-term savings into long-term savings. Hewitt EnnisKnupp's pioneering risk management strategies can be used to create a structured, risk-controlled way to implement this view.
- Some sponsors may choose to defer the MAP-21 funding stabilization provisions until 2013. Other sponsors will need to revoke prior elections to use the full PPA yield curve in lieu of the PPA segment rates in order to benefit from MAP-21's interest rate relief.
- Most sponsors will need to include additional disclosures in their annual participant funding notices for 2012 through 2014.

MAP-21 Overview

The funding stabilization provisions in MAP-21 will provide a near-term reduction in minimum funding requirements for single employer defined benefit plans in response to the current, historically low interest rate environment. The law does not necessarily reduce contribution requirements over the long term—plans will still need to be funded through either cash contributions or investment returns. The purpose of the change is to delay near-term funding requirements in the hope that financial markets will rebound and interest rates will increase over the next few years, thereby reducing the need for larger contributions in the future.

In addition to the funding stabilization provisions, MAP-21 will also significantly increase PBGC premiums over the next several years.

Pension Funding Stabilization Provisions

- **Corridor for 24-Month Average Segment Rates**—In 2012 and beyond, MAP-21 establishes a "corridor" for the 24-month average segment rates that are used for pension funding purposes. The corridor is based on a 25-year average of the segment rates. Under current financial market conditions, the corridor is expected to increase funding interest rates for the next several years, producing lower minimum required contributions in those years. This change does not apply to plans using the full yield curve rather than segment rates.
- **Corridor Applies for Many but Not All Purposes**—The MAP-21 interest rate corridor will apply for determining minimum required contributions (including at-risk status) and benefit restrictions, but not for determining PBGC variable rate premiums, lump sum distributions, ERISA section 4010 reporting, maximum deductible contributions, or Internal Revenue Code (Code) section 420 transfers of excess pension assets to retiree health and life accounts.
- **Participant Disclosure of Funding Stabilization Impact is Required**—New disclosures on the impact of funding stabilization will be added to the annual participant funding notice for 2012–2014.
- **Code Section 420 Retiree Health Transfers are Extended**—The expiration period for Code section 420 transfers of excess pension assets to retiree health accounts is extended from December 31, 2013 to December 31, 2021. In addition, transfers are permitted to be made to applicable retiree life insurance accounts.

Anticipated Impact—compared to prior law, near-term cash contribution requirements could decrease by up to 30% or more through 2017. In following years, cash contribution requirements are anticipated to be higher than under prior law assuming flat or rising interest rate scenarios.

PBGC Premium Provisions

- **Flat Rate Premiums**—The single-employer flat rate PBGC premium will increase from $35 per participant in 2012 to $42 per participant in 2013 and $49 per participant in 2014, and be indexed to increases in national average wages thereafter.

- **Variable Rate Premiums**—The variable rate PBGC premium will increase from $9 per $1,000 of unfunded vested benefits (UVB) to at least $13 per $1,000 of UVB in 2014 and at least $18 per $1,000 of UVB in 2015. The premium rate will also be indexed to increases in national average wages, resulting in even further increases. A premium rate that is determined as a dollar amount per $1,000 of UVB is effectively indexed to UVB, so the indexation of the premium rate could be viewed as a double-indexation of premiums. The variable rate premium will be capped at $400 per participant, with the cap being indexed to increases in national average wages.
- **Changes to PBGC Operations**—Additional changes will be made to the operations of the PBGC, but the PBGC is not given the authority to increase premiums on its own.
- **Anticipated Impact**—In the aggregate, these changes are expected to increase PBGC premiums by as much as 100% or more over the next ten years. The largest percentage increases will hit employers who take advantage of the lower near-term funding requirements under the new law.

PBGC Premium Year	Flat Rate (per participant per year)	Variable Rate (per $1,000 of unfunded vested benefits)
Now	$35	$9
2013	$42	At least $9
2014	$49	At least $13
2015+	At least $49	At least $18

Impact of MAP-21 on Sponsors and Participants

With the above as background, the following provides an analysis of the impact of MAP-21 on plan sponsors and participants.

Impact on Funding Interest Rates

Most plan sponsors currently calculate liabilities for pension funding purposes using three segment rates, which represent a 24-month average of interest rates. MAP-21 introduces a corridor around the 24-month average segment rates, so that each segment rate must be within a certain percentage of a 25-year average. The percentage starts at 10% in 2012, and gradually increases to 30% by 2016. This corridor is expected to increase funding interest rates for the next several years compared to prior law. The actual impact of MAP-21's interest rate provisions will depend on the path of future market interest rates, as shown in the charts on pages 4 and 5.

On August 16, 2012, the Internal Revenue Service (IRS) issued Notice 2012-55 providing guidance on the adjusted segment rates for the 2012 plan year. The table below compares the unadjusted 24-month average segment rates to the 25-year average segment rates and adjusted segment rates for a typical calendar year plan with a September lookback for determining funding interest rates:

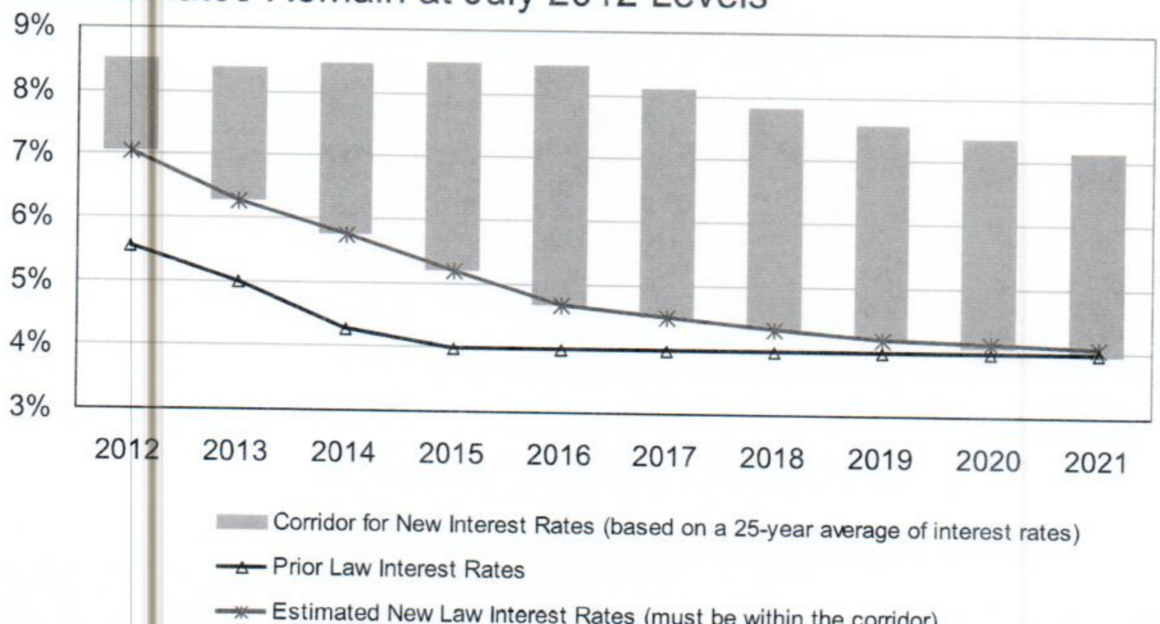
	Used to discount payments in…	Unadjusted Segment Rates	25-Year Average Segment Rates	Adjusted Segment Rates
Segment 1	Years 0-5	2.06%	6.15%	5.54%
Segment 2	Years 5-20	5.25%	7.61%	6.85%
Segment 3	Years 20+	6.32%	8.35%	7.52%
Weighted average for typical plan		**5.54%**	**7.77%**	**7.03%**

The adjusted segment rates shown above are what plan sponsors will be allowed to use. As the table shows, the effective funding interest rate for a typical plan rises by 1.49% as of January 1, 2012.

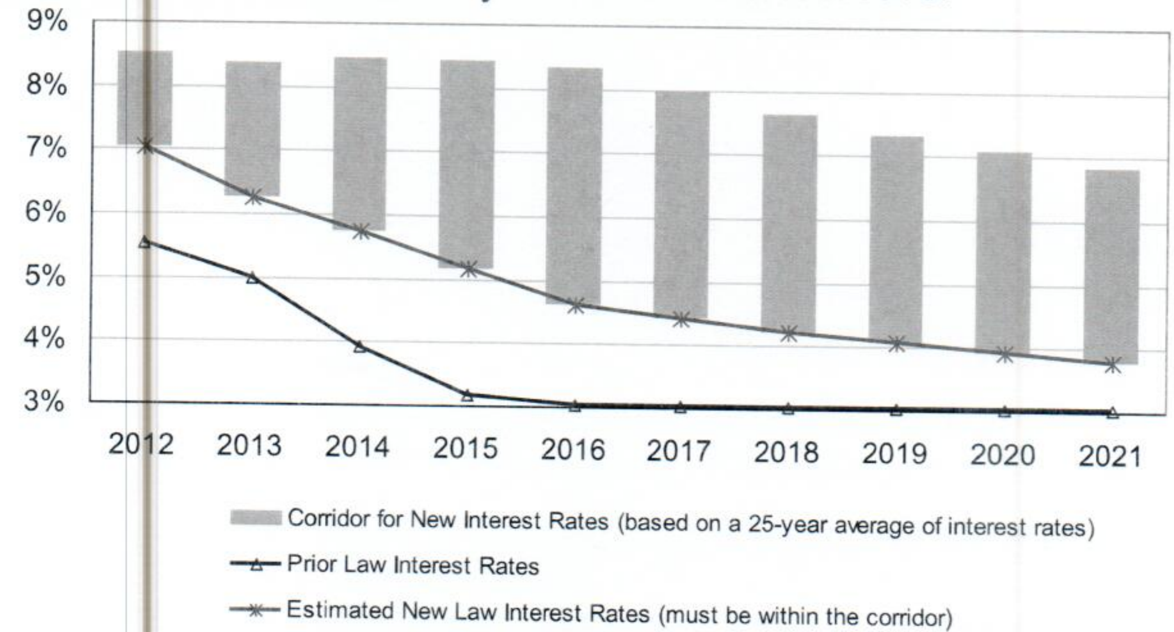
Note that the 24-month average segment rates are expected to be less than 90% of the 25-year average segment rates for the remainder of 2012, unless there is an extreme increase in interest rates. As a result, all plans applying MAP-21 for the 2012 plan year are expected to use the same adjusted segment rates, regardless of their valuation date or lookback month.

The scenarios below provide an estimate of what future funding interest rates might be under MAP-21 in plan years after 2012. If interest rates remain at current levels, the effective interest rate in the short-term could increase by approximately 1.5%, producing a Funding Target liability reduction of 15% or more for most plan sponsors. Additional IRS guidance will be needed to determine the precise impact for a given plan sponsor in years after 2012.

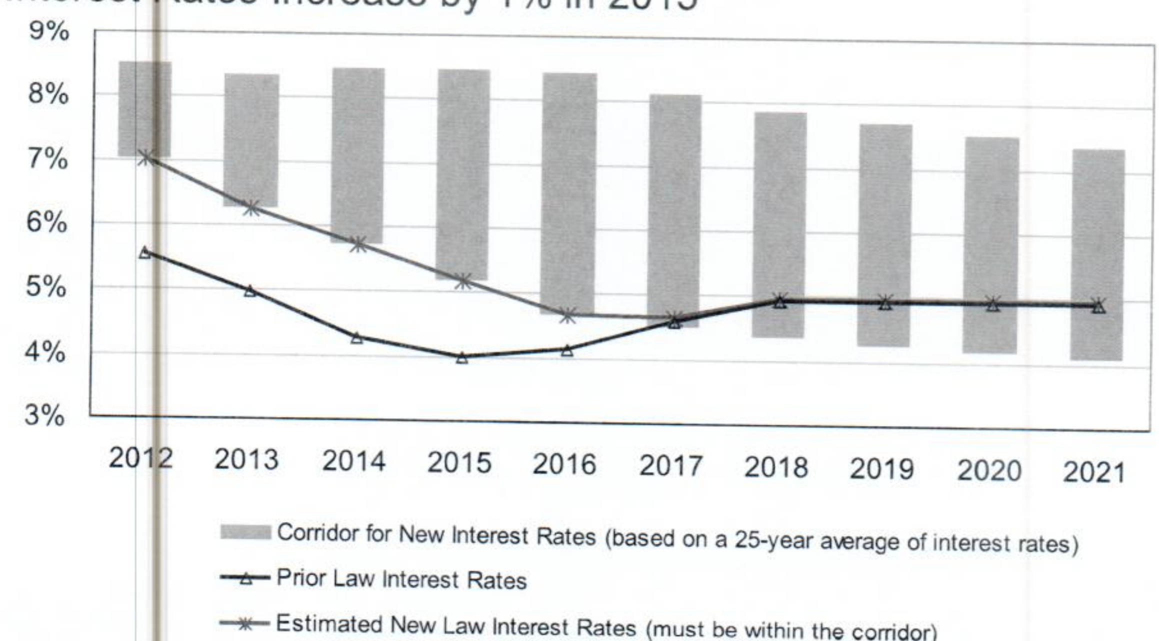
Flat Interest Rate Scenario—
Interest Rates Remain at July 2012 Levels



Falling Interest Rate Scenario— Interest Rates Decrease by 1% and Do Not Recover



Rising Interest Rate Scenario— Interest Rates Increase by 1% in 2015



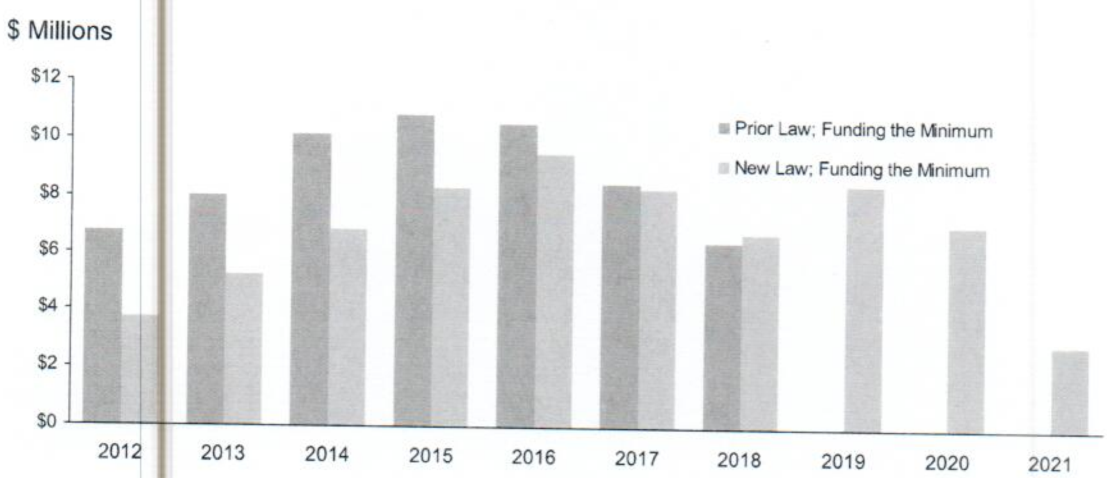
Impact on Cash Contribution Requirements

The following illustration shows the projected cash contribution requirements under MAP-21 and prior law for a sample plan that is 80% funded, with $100 million in liability, $80 million in assets, and approximately 2,000 participants.

If interest rates remain at current levels and asset returns are within a typical expected range, cash contribution requirements are expected to decrease compared to prior law through 2017. In 2018 and beyond, cash contribution requirements are expected to increase compared to prior law. This illustration assumes that PBGC premiums are paid from plan assets, so that an increase in premiums also results in an increase in contributions.

For plan sponsors that take advantage of the opportunity for reduced near-term contributions, total contributions over the next ten years are projected to be slightly higher than under prior law. As discussed further under Additional Considerations for Pension Financial Management (see page 8), plan sponsors will need to carefully consider whether to take advantage of this opportunity for reduced near-term contributions, continue to budget for contributions based on prior law, or follow other strategic funding policies.

Projected Funding Requirements for Sample 80% Funded Plan



	Total of 2012 - 2021 Contributions for			
	PBGC Premiums	**Employee Benefits**	**Total**	**7% PV[1] of Total 2012 - 2021 Contributions**
Prior Law; Funding the Minimum	$2.0	$59.1	$61.1	$46.9
New Law; Funding the Minimum	$4.4	$62.5	$66.9	$46.6

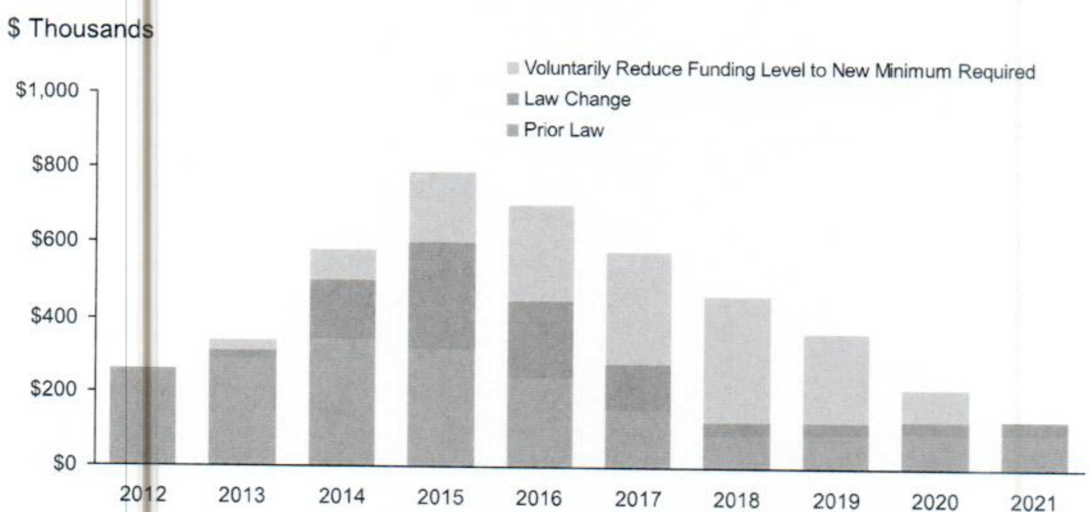
[1] Present value.

Impact on PBGC Premiums

The impact of the increase in PBGC premiums will vary based on a plan's size and funded status, and whether the plan sponsor takes advantage of the opportunity for reduced near-term contributions based on the MAP-21 interest rates. PBGC premiums will continue to be calculated using prior law interest rates, so reduced contributions will result in higher unfunded liabilities just when a higher premium rate is assessed on those unfunded liabilities. The example below shows the impact on PBGC premiums for the same sample plan as above—80% funded, with $100 million in liability, $80 million in assets, and approximately 2,000 participants. The example assumes that the plan sponsor reduces their cash contributions to the minimum required amount under MAP-21.

Plan sponsors will need to consider whether the advantages of potential delayed plan funding outweigh the disadvantages of increased PBGC premium requirements.

Projected PBGC Premiums for Sample 80% Funded Plan



Total PBGC Premiums for 2012–2021 Under Prior Law	$ 1,972
Premium Increase Due to MAP-21 Premium Provisions	919 (46% increase)
Premium Increase Due to Deferred Funding Under MAP-21	1,515 (77% increase)
Total PBGC Premiums for 2012–2021 Under MAP-21	$ 4,406 (123% increase)

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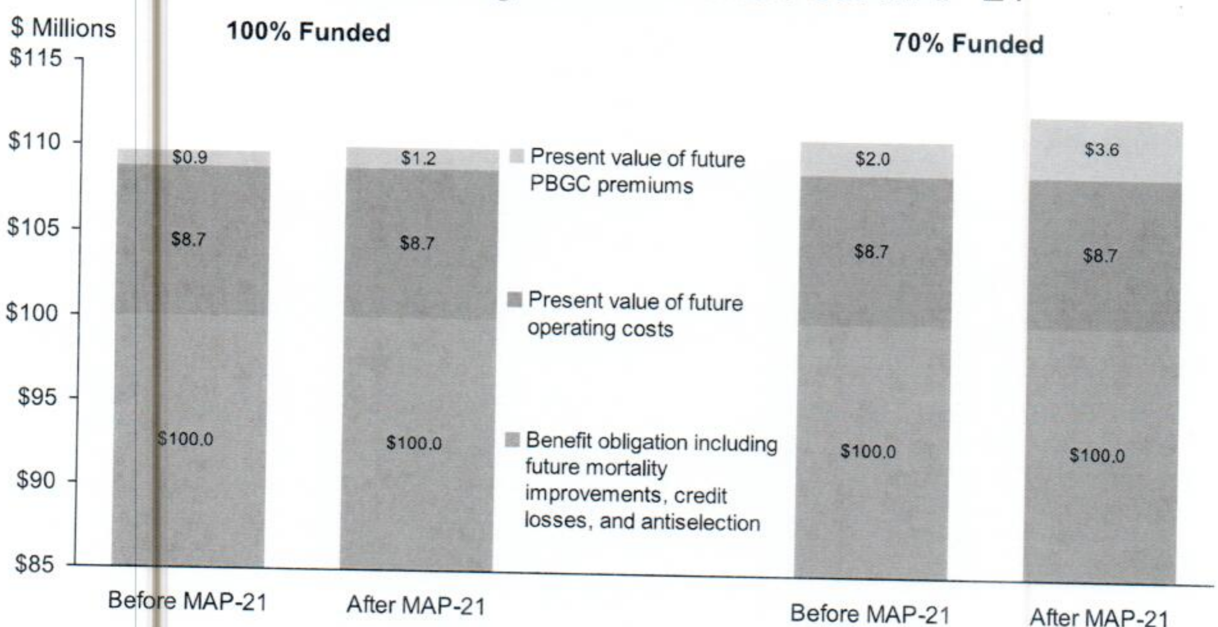
Additional Considerations for Pension Financial Management

Impact of PBGC Premium Increases on "Fully Loaded Plan Cost"

As noted above, the increase in PBGC premiums means that maintaining a pension plan will become more expensive. The chart below shows the impact of the PBGC premium increases on the "fully loaded" cost of providing pension benefits. In our 'fully loaded' measure, we add the present value of expected plan operating costs to the pension benefit obligation. As the chart shows, the impact is relatively small in comparison to the overall cost of running a plan, but plans currently in a deficit position will see substantially higher premiums until those deficits begin to shrink.

Fully-Loaded Pension Obligation Pre- and Post-MAP-21



As underfunded plans become better funded over time, the variable rate premium will decline, but the higher flat rate premium will persist. At the margin, the resulting increase in the fully-loaded cost of providing pension benefits may lead some plan sponsors to consider alternatives to reduce the size of their plans. MAP-21 is likely to increase interest in settlement strategies such as broad-based lump sum offerings to inactive participants, as well as annuity purchases and plan terminations. Such increased interest in settlement strategies among plan sponsors who are financially able to fund these settlements could potentially increase risk to the PBGC by lowering its premium base and taking financially strong plan sponsors out of the defined benefit system.

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Funding Strategy

While the higher funding interest rates under MAP-21 will create an opportunity for plan sponsors to delay cash contributions, the increase in variable rate premiums will create a strong incentive for sponsors of underfunded plans to continue making their planned contributions, or even increase them. Accelerating contributions to underfunded plans will result in ongoing reductions to PBGC premiums, and the greater the current level of underfunding, the greater the financial benefit from accelerated contributions.

Investment Strategy

The investment implications of the new rules will interact with a plan sponsor's contribution strategy. For example, plans with dynamic investment policies that de-risk as funded status improves may de-risk more slowly if the plan sponsor reduces their contributions. But even more broadly, the new law may change the plan sponsor's preferred investment strategy (rather than just the position on the glide path at a point in time). The implications of this new law on investment strategy depend on the nature and level of the sponsor's risk tolerance. The grid below summarizes the most likely potential impacts of funding stabilization on investment strategy.

Potential Impact of Funding Stabilization on Investment Strategy

	Plan Sponsor's Most Important Metric	
	Accounting, Plan Termination, or Economic Funded Status	**Contributions**
Low funded ratio/ High risk budget (e.g. 50% or greater allocation to return-seeking assets such as equities)	Typically, minimal impact on investment strategy	Reconsider how to allocate the risk budget; consider temporarily reducing the duration of the fixed income portfolio
High funded ratio/ Low risk budget (e.g. less than 50% allocation to return-seeking assets)	Typically, minimal impact on investment strategy	

For plan sponsors whose most important metric is accounting, plan termination funded status, or economic funded status, there is minimal impact on investment strategy since MAP-21 did not change any of these metrics.

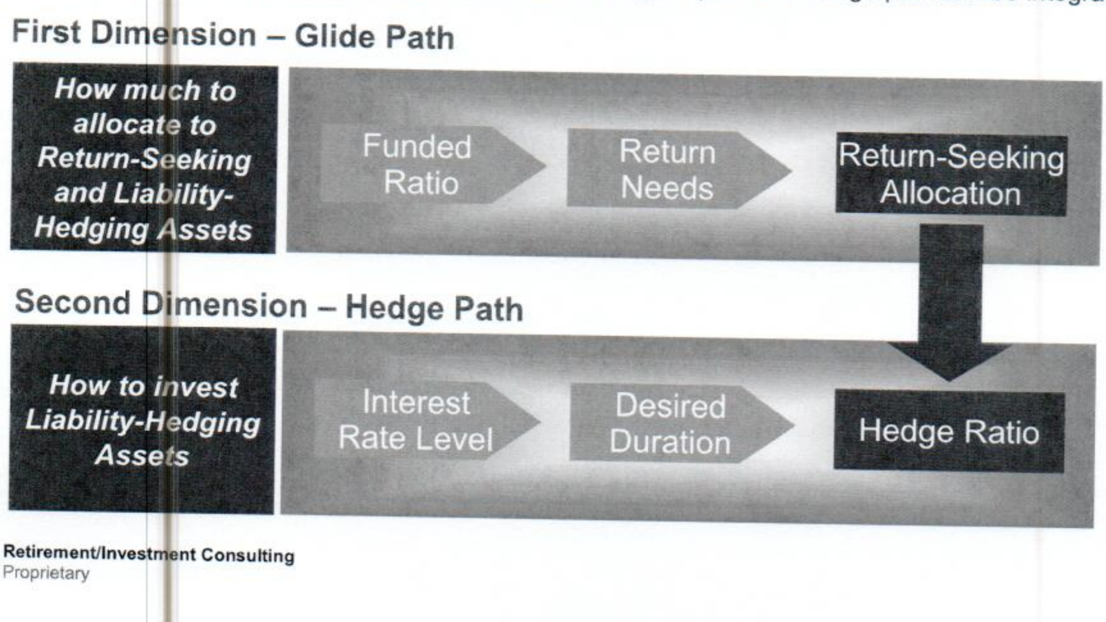
For plan sponsors focused on contributions, there will be a short-term deferral of interest rate and credit spread risk, which will gradually phase out over the next several years. Plan sponsors focused on contributions with a low risk budget will not typically need to make significant changes on their investment strategy. There are two reasons for this.

First, the new law delays the impact of interest rate risk on contributions, but interest rate risk will eventually reappear when the corridor no longer dictates the rate levels. Plan sponsors with low risk budgets will typically be averse to contribution spikes a few years into the future when this happens, so they would not typically want to adjust their investment strategy.

Second, many plans in this category may have elected the full PPA yield curve rather than segment rates to align liability changes with asset returns. However, the MAP-21 interest rate corridor does not apply to plans that use the full yield curve. These sponsors can elect to move to segment rates in order to take advantage of the lower contribution requirements.

Plan sponsors with moderate to high risk budgets that are focused on contributions—the category we think might include the largest proportion of plans—will have reduced short-term exposure to changes in interest rates, reducing funded status volatility. Over the next few years, these plans may be able to take on more investment risk while maintaining the same level of contribution risk. The additional investment risk can come in the form of higher allocations to return-seeking assets or lower duration of liability-hedging assets. For those plan sponsors who choose to take on more risk in the next few years, the preferred part of the portfolio in which to deploy that risk may be influenced by their market views.

Hewitt EnnisKnupp believes that interest rates will rise over the next few years, so we expect greater advantages to maintaining a low duration fixed income portfolio, as the new law reduces short-term risk from interest rate mismatch. With interest rates at historically low levels, an increasing number of plan sponsors will be implementing "hedge paths," which use explicit interest rate triggers to maintain a low fixed income duration (and hedge ratio) when rates are low and extend the fixed income duration as rates rise. This can provide a disciplined, methodical way to manage the pension plan out of the current interest rate environment. The following figure illustrates how a glide path and hedge path can be integrated.



Implementing Low Duration Strategies

Plan sponsors may deploy one or more of the following strategies to shorten duration in today's low interest rate environment:

- Replace long duration bonds with intermediate duration bonds
- Replace long duration bonds with return-seeking fixed income
- Maintain physical long duration bonds, but reduce the duration with derivatives

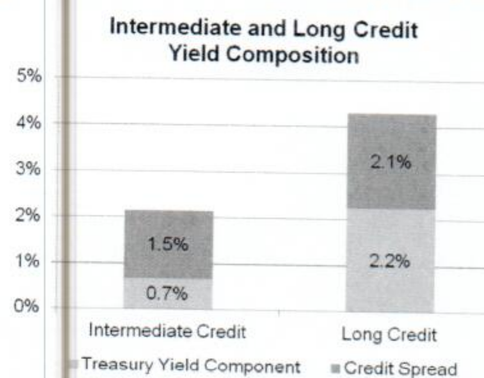
Let's examine each of these strategies further.

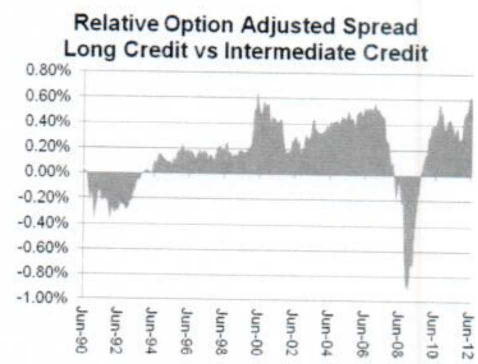
Replace long duration bonds with intermediate duration bonds. The simplest way to implement a low duration strategy is to shift from a long duration fixed income benchmark to an intermediate one. Plan sponsors who do this should be thoughtful about the types of long duration bonds sold as well as the types of intermediate duration bonds purchased. For example, it may be advantageous to sell long duration government bonds and purchase intermediate duration credit bonds to maintain credit spread duration while reducing interest rate duration.

Replace long duration bonds with return-seeking fixed income such as bank loans, complex credit and direct loans. Various types of return-seeking fixed income can be suitable for this role. Many are both more complex and less liquid than traditional fixed income investments. However, they typically have much higher yield—often by several percentage points, with much of this translating to higher potential returns. Often these instruments are based on floating rates or have other provisions that make them an effective way to reduce duration. Further, structural dislocations in fixed income markets can make some of these opportunities attractive.

Maintain physical long duration bonds, but reduce the duration with derivatives. One way to implement this is by holding physical long credit bonds and shorting long duration Treasury futures. Plan sponsors who already own long credit can use this approach to avoid round-trip transaction costs, while achieving high credit spread duration and low interest rate duration. This approach also helps the plan sponsor lock in the higher credit spreads that currently exist at the long end of the curve.

The graphs below illustrate why plan sponsors might want to do this. The graph on the left side shows that, as of July 31, 2012, credit spreads for intermediate duration credit were 1.5% versus 2.1% for long credit. The graph on the right side shows that this 0.6% difference is near a historical high, suggesting the advantage of plan sponsors using this strategy to lock in a higher spread level.





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Participant Communications and Administration

Impact on Benefit Restrictions

Unless a plan sponsor makes an election to delay the application of the MAP-21 interest rates for benefit restriction purposes (see Timing and Suggested Next Steps for Plan Sponsors on page 14), the improved plan funded status that results from the use of those rates may cause the lifting of benefit restrictions that had been previously communicated to participants for 2012. Plan sponsors will need to review the status of any existing restrictions and any restrictions that may have been expected to go into effect in the future. Participants may need to be notified of the removal of restrictions on benefit accruals and accelerated benefit distributions (such as lump sums), and administrative systems may need to be modified to administer a sponsor's plans accordingly.

Plan sponsors should also review the potential impact on any 2012 plan amendments or unpredictable contingent events that were prevented from taking effect due to a plan's funded status before the enactment of MAP-21.

Required Disclosures in Annual Funding Notice

Disclosures regarding the effect of funding stabilization will also need to be added to the required annual funding notices for 2012 through 2014 if the impact is at least a 5% reduction in liability and the unfunded liability before reflecting the MAP-21 interest rates is more than $500,000. An exception applies for small employers (with defined benefit plans covering less than 50 participants in total). These disclosures must include a statement that, as a result of MAP-21, the plan sponsor may contribute less money to the plan when interest rates are at historical lows. A table must also be included showing the resulting impact on the funding target attainment percentage, funding shortfall, and minimum required contribution. Plan sponsors may want to include additional discussion in the annual funding notice to address participants' potential concerns about the funding of the plan.

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Additional IRS Guidance: Notice 2012-61

On September 11, 2012, the IRS issued Notice 2012-61 providing further guidance on the implementation of the MAP-21 pension funding stabilization provisions.

Below is a partial summary of key clarifications included in Notice 2012-61:

- If the MAP-21 segment rates are used for minimum funding purposes, lump sums and other benefits subject to §417(e) must be valued using the MAP-21 segment rates.
- If a plan's 2012 Adjusted Funding Target Attainment Percentage (AFTAP) was certified on or before September 30, 2012, based on pre-MAP-21 rates, the plan's actuary can recertify the AFTAP reflecting MAP-21 rates and the plan sponsor can change benefit limitations either prospectively or retroactively.
- Plan sponsor elections to defer MAP-21 to the 2013 plan year, or to revoke existing elections to use the full yield curve rather than the 24-month average segment rates, must be made by providing written notification to the plan's actuary and plan administrator.
- Elections to reduce funding balances made prior to September 30, 2012 may be revoked by the end of the 2012 plan year provided the revocation does not impose benefit limitations that would not otherwise be imposed or result in an unpaid minimum required contribution.

As of the end of September 2012, we continue to await guidance on certain other issues, such as how the Treasury Department will calculate the 25-year average segment rates for 2013 and later plan years. This information will be needed to more accurately project the potential impact of MAP-21 in future years.

Timing and Suggested Next Steps for Plan Sponsors

The MAP-21 interest rate provisions apply automatically to plans using segment rates for funding calculations beginning in 2012. However, certain elections affecting the application of the interest rate provisions are available to plan sponsors.

If a plan...	Then the plan sponsor may elect to...	This election should be considered when...	The election must be made by...
Has already applied benefit restrictions in 2012 after a 2012 AFTAP certification (including a range certification)	Delay the interest rate provisions until 2013 for benefit restriction purposes	The AFTAP would increase enough to relax 2012 benefit restrictions, but the plan sponsor expects restrictions to apply again in 2013	The filing date for the 2012 Form 5500, but per Notice 2012-61, the election may need to be made earlier if it impacts the application of benefit restrictions
Has already determined 2012 contributions using PPA segment rates	Delay the interest rate provisions until 2013 for all purposes (including funding and benefit restrictions)	The plan sponsor does not wish to reduce 2012 contributions and is not concerned about adding to the prefunding balance	The due date of the 2012 Form 5500 filing (unless an earlier date for benefit restrictions applies as above)
Uses the corporate bond yield curve for funding	Switch to the segment rates adjusted under the new law	The plan sponsor wishes to take advantage of the reduced contribution requirements	One year after the enactment of MAP-21. The plan sponsor may re-elect the corporate bond yield curve in a future year

Plan sponsors should also consider how MAP-21 may impact their employee communications, their funding strategies, and potential pension settlement actions that may be under consideration or become more attractive as a result of MAP-21.

While regulatory changes such as MAP-21 are important, long-term pension obligations have not changed: plans must pay the benefits promised to participants. Though Congress and other regulatory bodies can change how that obligation is measured and financed, sponsors should keep in mind the true economics of the plan as well as the regulatory environment they are in when developing risk management strategies.

Although the new legislation doesn't change plan accounting or the fundamental economics of plan costs, the rules lengthen the period of time over which many plans will remain underfunded and reduce the near-term potential for interest rate risk to cause higher contribution requirements. While this will have a minimal effect on the preferred investment strategies for some plans, many will see a stronger case for adopting a hedge path that maintains low duration fixed income when rates are low and uses interest rate triggers to lengthen duration as rates rise. This strategy can be an effective way to fine tune risk exposures within the current market environment and new regulatory framework.

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MOODY'S
INVESTORS SERVICE

CROSS-SECTOR RATING METHODOLOGY

Financial Statement Adjustments in the Analysis of Non-Financial Corporations

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Summary

This cross-sector rating methodology explains Moody's approach to making financial statement adjustments for non-financial corporations[1]. We adjust companies reported financial statements to improve analytical insight from the perspective of assessing credit risk and to improve the comparability of financial data between peers. When computing credit-relevant ratios, we use adjusted data and base our ratings, in part, on those ratios.[2]

Our adjustments do not imply that a company's financial statements fail to comply with applicable accounting rules. Our goal is to enhance the analytical value of financial data for credit analysis. We recognize that achieving full comparability of financial statements on a global basis is wholly impossible due to different measurement, recognition, presentation and disclosure practices that exist within and across various countries, regions and accounting regimes. However, where our key metrics may be significantly affected by differing accounting treatments that are generally well disclosed, we make adjustments to improve the quality and comparability of the data. Over time, as global reporting and analytical issues evolve, we may modify or add to our adjustments.

This methodology discusses standard adjustments to financial statements prepared under US, Japan and other local country accounting principles (collectively referred to as GAAP in this publication unless noted otherwise) and International Financial Reporting Standards (IFRS). The adjustments we discuss herein may be unique to GAAP or IFRS but may also be applied to other accounting jurisdictions, collectively termed "local GAAP", whenever it is appropriate to do so in order to make statements more comparable to corporations that report under GAAP or IFRS.

THIS REPORT WAS UPDATED ON DECEMBER 22, 2015 WITH ONLY ONE SIGNIFICANT TEXT CHANGE: FOOTNOTE 1 HAS BEEN REVISED TO CLARIFY THE SCOPE OF INFRASTRUCTURE ISSUERS COVERED BY THIS METHODOLOGY. NO OTHER SIGNIFICANT ASPECT OF THIS METHODOLOGY HAS BEEN REVISED SINCE ITS ORIGINAL PUBLICATION DATE. NO RATING CHANGES WILL RESULT FROM PUBLICATION OF THIS UPDATE.

1 Non-financial corporations include utilities and corporate infrastructure, REITS, asset managers, and insurance brokers.

2 This update may not be effective in some jurisdictions until certain requirements are met, such as local language translation.

Certain adjustments are considered 'standard adjustments' and are designed to encapsulate adjustments across all non-financial corporates, where applicable. In limited circumstances, our presentation of financial information may differ from the standard adjustments indicated in this document because we think a different presentation is more analytically appropriate. Where differences from standard adjustments are pervasive in a particular industry, we will generally note this in the industry methodology.

In addition to the standard adjustments, we may also make non-standard adjustments to financial statements for other matters to better reflect underlying economics and improve comparability with peer companies. Non-standard adjustments tend to involve a higher degree of analytic judgment. For example, we may adjust financial statements to reflect estimates or assumptions that we believe are more suitable for credit analysis.

Purpose and Application

In general, Moody's adjusts financial statements to improve analytical insight from the perspective of assessing credit risk and to improve the comparability of a company's financial statements with those of its peers. In standardizing certain adjustments, our goal is to enhance consistency of our global approach across countries and industries, and to promote transparency for market participants. We adjust those items for which reliable source data is available. However, we are cognizant of differences in reporting requirements and accounting regimes, and take such limitations into consideration when conducting our analysis.

More specifically, we adjust financial statements for the below reasons:

» ***Apply accounting principles that we believe more faithfully capture underlying economics.*** One example is our view that operating leases have debt-like financing characteristics that should be recognized on balance sheets. Most of our standard adjustments fall in the accounting principle category.

» ***Improve comparability by aligning accounting principles.*** For example, we adjust LIFO (last-in-first-out) inventories so that all companies in a peer group measure inventory on a comparable FIFO (first-in-first-out) basis.

» ***Reflect estimates or assumptions that we believe are more appropriate for credit analysis in a company's particular circumstances.*** These adjustments typically relate to highly judgmental areas such as asset valuation allowances, impairment of assets, and contingent liabilities. No standard adjustment falls in this category as the calculations are too company-specific. Instead, we adjust financials in this area based on individual facts and circumstances.

We make comprehensive adjustments to complete sets of financial statements and then compute ratios based on adjusted financial statements. As a result, our basic financial ratios do not contain complicated add backs to the numerators and denominators, but instead are simpler constructs based on fully adjusted sets of financial statements.

Our adjustments affect all three primary financial statements which, after our adjustments, continue to interact:

» ***Balance sheet:*** We adjust the value of certain items, remove the artificial effects of smoothing permitted by accounting standards, recognize certain off-balance sheet transactions, and change the debt versus equity classification of certain hybrid financial instruments with both debt and equity features.

» ***Income statement:*** We eliminate the effects of certain smoothing, recognize additional expenses, attribute interest to new debt that we recognize, and segregate the effects of unusual or non-recurring items.

» ***Cash flow statement:*** We adjust the cash flow statement to be consistent with our adjustments to the balance sheet and income statement. For example, we identify and segregate the cash effects of the unusual transactions and events that we separate on the income statement.

Our objective is to fully adjust interim reporting periods in the same manner as we adjust full-year financial statements. However, in some cases this may not be possible due to more limited accounting disclosures that are made in interim reporting periods. In such cases, we use our judgment in determining whether or not an adjustment can be made and how it should be calculated. Where there is lack of interim disclosure information for an adjustment, we tend to use the prior annual disclosure to make estimates.

We maintain "unadjusted financials" (i.e. publicly reported financials) and "adjusted financials" (i.e. publicly reported data plus adjustments) in a database and use it to generate peer comparisons and quantitative data by industry. This data facilitates rating comparability and more transparent communication.

Standard Adjustments

Standard adjustments are identified below along with the applicable accounting regime. For example, the defined benefit pension plan adjustment applies to US GAAP, IFRS and Japan GAAP while the off-balance-sheet finance lease adjustment only applies to Japan GAAP.

EXHIBIT 1

Standard Adjustment Application

	US GAAP	IFRS	JGAAP
Defined benefit pension plans	x	x	x
Multiemployer pension plans	x	-	-
Operating leases	x	x	x
Off-balance-sheet finance leases	-	-	x
Capitalized interest	x	x	x
Capitalized development costs	-	x	-
Interest expense related to discounted long-term liabilities other than debt	-	x	-
Hybrid securities	x	x	x
Securitizations and factoring arrangements	x	x	x
Inventory reported on a LIFO cost basis	x	-	-
Consistent measurement of Funds from Operations	-	x	-
Unusual and non-recurring items	x	x	x

The following exhibit provides a brief description of each the standard adjustments. Each standard adjustment is described more fully later in this report.

EXHIBIT 2

Financial Statement Adjustments in the Analysis of Non-Financial Corporations

Adjustment	Purpose
Defined benefit pension plans	To eliminate the effects of artificial smoothing of pension expense permitted by accounting standards and recognize as debt the amount the pension obligation is underfunded or unfunded (subject to equity credit). We also change the classification of cash contributed to the pension trust on the cash flow statement under certain circumstances.
Multiemployer pension plans	To recognize as debt an estimate of the company's portion of an underfunded multiemployer pension liability.
Operating leases	To capitalize operating and off-balance sheet finance leases and recognize a related debt obligation. We re-characterize rent expense on the income statement by imputing interest on lease debt and considering the residual amount as depreciation.
Capitalized interest	To expense interest capitalized in the current year. On the cash flow statement, we reclassify capitalized interest from an investing cash outflow to an operating cash outflow.
Capitalized development costs	To expense development costs capitalized in the current year and adjust intangible assets on the balance sheet accordingly. On the cash flow statement, we reclassify capitalized development costs from an investing cash outflow to an operating cash outflow.
Interest expense related to discounted long-term liabilities other than debt	To adjust interest expense to reclassify the accretion of discounted long-term liabilities other than debt as an operating expense.
Hybrid securities	To classify securities with characteristics of both debt and equity in accordance with Moody's classification of hybrid securities, which sometimes differs from accounting treatment. We adjust interest expense, dividends and related cash flows consistent with our classification of the hybrid security.
Securitizations and factoring arrangements	To classify off balance sheet securitization and factoring arrangements as collateralized borrowings.
Inventory reported on a LIFO cost basis	To adjust inventory recorded on a LIFO cost basis to FIFO value.
Consistent measurement of Funds from Operations	To adjust working capital where appropriate to include the difference between tax paid and current tax expense, and net interest paid and interest expense.
Unusual and non-recurring items	To reclassify the effects of unusual or nonrecurring transactions and events to a separate category on the income and cash flow statements. Our analytical ratios that include income or operating cash flows generally exclude amounts in those separate categories.

Non-Standard Adjustments

In addition to the standard adjustments, Moody's may also make non-standard adjustments to financial statements for other matters to better reflect underlying economics and improve comparability with peer companies. While not a comprehensive list, below are some examples of non-standard adjustments that we might make based on the underlying facts and circumstances of each issuer.

» Debt reported at fair value based on the election of a 'fair value option'

» Other post-employee benefit (OPEB) obligation market changes reported on the income statement

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20 Defined Benefit Plans—General
S99 SEC Materials

Securities and Exchange Commission (SEC)

General Note: As more fully described in *About the Codification*, the Codification includes selected SEC and SEC Staff content for reference by public companies. The Codification does not replace or affect how the SEC or SEC Staff issues or updates SEC content. SEC Staff content does not constitute Commission-approved rules or interpretations of the SEC.

General

> SEC Staff Guidance

> > Announcements Made by SEC Staff at Emerging Issues Task Force (EITF) Meetings

> > > SEC Staff Announcement: Selection of Discount Rate Used for Measuring Defined Benefit Pension Obligation and Obligations of Postretirement Plans Other Than Pensions

715-20-S99-1 The following is the text of SEC Staff Announcement: Selection of Discount Rate Used for Measuring Defined Benefit Pension Obligation and Obligations of Postretirement Plans Other than Pensions.

> The SEC Observer made the following announcement of the SEC staff's position on the selection of discount rates used for purposes of measuring defined benefit pension obligations under paragraph 715-30-35-44 and obligations of postretirement benefit plans other than pensions under paragraph 715-60-35-80. Those paragraphs provide guidance for selecting discount rates to measure obligations for pension benefits and postretirement benefits other than pensions.
>
> At each measurement date, the SEC staff expects registrants to use discount rates to measure obligations for pension benefits and postretirement benefits other than pensions that reflect the then current level of interest rates. The staff suggests that fixed-income debt securities that receive one of the two highest ratings given by a recognized ratings agency be considered high quality (for example, a fixed-income security that receives a rating of Aa or higher from Moody's Investors Service, Inc.).

> > Comments Made by SEC Observer at EITF Meetings

> > > SEC Observer Comment: Determination of Vested Benefit Obligation for a Defined Benefit Pension Plan

715-20-S99-2 The following is the text of SEC Observer Comment: Determination of Vested Benefit Obligation for a Defined Benefit Pension Plan.

Under the guidance in paragraph 715-30-35-41, an entity has the option of determining whether the vested benefit obligation for a defined benefit pension plan is the actuarial present value of the vested benefits to which the employee is entitled if the employee separates immediately or the actuarial present value of the vested benefits to which the employee is currently entitled but based on the employee's expected date of separation of retirement. The method used should be disclosed.

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715 Compensation—Retirement Benefits
30 Defined Benefit Plans—Pension
20 Glossary

General Note: The Master Glossary contains all terms identified as glossary terms throughout the Codification. Clicking on any term in the Master Glossary will display where the term is used. The Master Glossary may contain identical terms with different definitions, some of which may not be appropriate for a particular Subtopic. For any particular Subtopic, users should only use the glossary terms included in the particular Subtopic Glossary Section (Section 20).

Accumulated Benefit Obligation

The actuarial present value of benefits (whether vested or nonvested) attributed, generally by the pension benefit formula, to employee service rendered before a specified date and based on employee service and compensation (if applicable) before that date. The accumulated benefit obligation differs from the projected benefit obligation in that it includes no assumption about future compensation levels. For plans with flat-benefit or non-pay-related pension benefit formulas, the accumulated benefit obligation and the projected benefit obligation are the same.

Actual Return on Plan Assets (Component of Net Periodic Pension Cost)

For a funded plan, the actual return on plan assets is determined as the difference between the fair value of plan assets at the end of the period and the fair value at the beginning of the period, adjusted for contributions and payments of benefits during the period.

Actuarial Present Value

The value, as of a specified date, of an amount or series of amounts payable or receivable thereafter, with each amount adjusted to reflect the time value of money (through discounts for interest) and the probability of payment (by means of decrements for events such as death, disability, withdrawal, or retirement) between the specified date and the expected date of payment.

Allocated Contract

A contract with an insurance entity under which payments to the insurance entity are currently used to purchase immediate or deferred annuities for individual participants. See Annuity Contract.

Amortization

The process of reducing a recognized liability systematically by recognizing gains or by reducing a recognized asset systematically by recognizing losses. In accounting for pension benefits or other postretirement benefits, amortization also means the systematic recognition in net periodic pension cost or other postretirement benefit cost over several periods of amounts previously recognized in other comprehensive income, that is, gains or losses, prior service cost or credits, and any transition obligation or asset.

Annuity Contract

A contract in which an insurance entity unconditionally undertakes a legal obligation to provide specified pension benefits to specific individuals in return for a fixed consideration or premium. An annuity contract is irrevocable and involves the transfer of significant risk from the employer to the insurance entity. Annuity contracts are also called allocated contracts.

Asset Group

An asset group is the unit of accounting for a long-lived asset or assets to be held and used, which represents the lowest level for which identifiable cash flows are largely independent of the cash flows of other groups of assets and liabilities.

Assumptions

Estimates of the occurrence of future events affecting pension costs and other postretirement benefit costs (as applicable), such as turnover, retirement age, mortality, withdrawal, disablement, dependency status, per capita claims costs by age, health care cost trend rates, levels of Medicare and other health care providers' reimbursements, changes in compensation and national pension benefits, and discount rates to reflect the time value of money.

Attribution

The process of assigning pension or other postretirement benefits or costs to periods of employee service.

Benefit Formula

See Pension Benefit Formula.

Benefit-Years-of-Service Approach

One of three benefit approaches. Under this approach, an equal portion of the total estimated benefit is attributed to each year of service. The actuarial present value of the benefits is derived after the benefits are attributed to the periods.

Benefits

The monetary or in-kind benefits or benefit coverage to which participants may be entitled under a pension plan or a health and welfare plan (which can include active, terminated, and retired employees or their dependents or beneficiaries). Examples of benefits may include, but are not limited to, health care benefits, life insurance, legal, educational, and advisory services, pension benefits, disability benefits, death benefits, and benefits due to termination of employment.

Captive Insurer

An insurance entity that does business primarily with related entities.

Career-Average-Pay Formula

A benefit formula that bases benefits on the employee's compensation over the entire period of service with the employer. A career-average-pay plan is a plan with such a formula.

Cash Balance Plan

A plan with the following characteristics:

a. A defined principal-crediting rate as a percentage of salary

b. A defined, noncontingent interest-crediting rate that entitles participants to future interest credits at a stated, fixed rate until retirement.

A cash balance plan communicates to employees a pension benefit in the form of a current account balance that is a function of current and past salary-based principal credits and future interest credits thereon at a stated rate based on those principal credits.

In a cash balance plan, individual account balances are determined by reference to a hypothetical account rather than specific assets, and the benefit is dependent on the employer's promised interest-crediting rate, not the actual return on plan assets. The employer's financial obligation to the plan is not satisfied by making prescribed principal and interest credit contributions—whether in cash or as a hypothetical contribution to participants' accounts—for the period; rather, the employer must fund, over time, amounts that can accumulate to the actuarial present value of the benefit due at the time of distribution to each participant pursuant to the plan's terms. The employer's contributions to a cash balance plan trust and the earnings on the invested plan assets may be unrelated to the principal and interest credits to participants' hypothetical accounts.

A cash balance plan is a defined benefit plan.

Component of an Entity

A component of an entity comprises operations and cash flows that can be clearly distinguished, operationally and for financial reporting purposes, from the rest of the entity. A component of an entity may be a reportable segment or an operating segment, a reporting unit, a subsidiary, or an asset group.

Curtailment

See Plan Curtailment.

Defined Benefit Plan

A defined benefit plan provides participants with a determinable benefit based on a formula provided for in the plan.

a. Defined benefit health and welfare plans—Defined benefit health and welfare plans specify a determinable benefit, which may be in the form of a reimbursement to the covered plan participant or a direct payment to providers or third-party insurers for the cost of specified services. Such plans may also include benefits that are payable as a lump sum, such as death benefits. The level of benefits may be defined or limited based on factors such as age, years of service, and salary. Contributions may be determined by the plan's actuary or be based on premiums, actual claims paid, hours worked, or other factors determined by the plan sponsor. Even when a plan is funded pursuant to agreements that specify a fixed rate of employer contributions (for example, a collectively bargained multiemployer plan), such a plan may nevertheless be a defined benefit health and welfare plan if its substance is to provide a defined benefit.

b. Defined benefit pension plan—A pension plan that defines an amount of pension benefit to be provided, usually as a function of one or more factors such as age, years of service, or compensation. Any pension plan that is not a defined contribution pension plan is, for purposes of Subtopic 715-30, a defined benefit pension plan.

c. Defined benefit postretirement plan—A plan that defines postretirement benefits in terms of monetary amounts (for example, $100,000 of life insurance) or benefit coverage to be provided (for example, up to $200 per day for hospitalization, or 80 percent of the cost of specified surgical procedures). Any postretirement benefit plan that is not a defined contribution postretirement plan is, for purposes of Subtopic 715-60, a defined benefit postretirement plan. (Specified monetary amounts and benefit coverage are collectively referred to as benefits.)

Defined Contribution Plan

A plan that provides an individual account for each participant and provides benefits that are based on all of the following: amounts contributed to the participant's account by the employer or employee; investment experience; and any forfeitures allocated to the account, less any administrative expenses charged to the plan.

a. Defined contribution health and welfare plans—Defined contribution health and welfare plans maintain an individual account for each plan participant. They have terms that specify the means of determining the contributions to participants' accounts, rather than the amount of benefits the participants are to receive. The benefits a plan participant will receive are limited to the amount contributed to the participant's account, investment experience, expenses, and any forfeitures allocated to the participant's account. These plans also include flexible spending arrangements.

b. Defined contribution postretirement plan—A plan that provides postretirement benefits in return for services rendered, provides an individual account for each plan participant, and specifies how contributions to the individual's account are to be determined rather than specifies the amount of benefits the individual is to receive. Under a defined contribution postretirement plan, the benefits a plan participant will receive depend solely on the amount contributed to the plan participant's account, the returns earned on investments of those contributions, and the forfeitures of other plan participants' benefits that may be allocated to that plan participant's account.

Discount Rate

A rate or rates used to reflect the time value of money. Discount rates are used in determining the present value as of the measurement date of future cash flows currently expected to be required to satisfy the pension obligation or other postretirement benefit obligation. See Actuarial Present Value.

Expected Long-Term Rate of Return on Plan Assets

An assumption about the rate of return on plan assets reflecting the average rate of earnings expected on existing plan assets and expected contributions to the plan during the period.

Expected Return on Plan Assets

An amount calculated as a basis for determining the extent of delayed recognition of the effects of changes in the fair value of plan assets. The expected return on plan assets is determined based on the expected long-term rate of return on plan assets and the market-related value of plan assets.

Explicit Approach to Assumptions

An approach under which each significant assumption used reflects the best estimate of the plan's future experience solely with respect to that assumption. See Implicit Approach to Assumptions.

Final-Pay Formula

A benefit formula that bases benefits on the employee's compensation over a specified number of years near the end of the employee's service period or on the employee's highest compensation periods. For example, a plan might provide annual pension benefits equal to 1 percent of the employee's average salary for the last 5 years (or the highest consecutive 5 years) for each year of service. A final-pay plan is a plan with such a formula.

Flat-Benefit Formula

A benefit formula that bases benefits on a fixed amount per year of service, such as $20 of monthly retirement income for each year of credited service. A flat-benefit plan is a plan with such a formula.

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ORIGINAL RESEARCH

The smoothing of pension expenses: a panel analysis

Xiaowen Jiang

Published online: 17 October 2010

Abstract The main purpose of this paper is to utilize recent developments in panel data techniques to evaluate whether the smoothing of pension expenses is neutral in its long-term effect on reported earnings. Adopting a long-term perspective, the empirical analysis also identifies sources of potential deviations. Results suggest that the current smoothing mechanism tends to induce significant biases in the recognized pension expenses. For a majority of the sample firms, the tendency is to overstate the sponsoring firms' earnings in the long run. To a large extent, such biases reflect the combination of both ineffective amortization of the deferred gains and losses and questionable latitude in pension rate discretions.

Keywords Pension accounting · Accounting standard · Panel data dynamic model

JEL Classification M41 · G23 · G28 · C23

1 Introduction

This study investigates whether the smoothing of pension expenses under current accounting standards is neutral in its long-term effect on reported earnings. The empirical analyses identify sources of potential deviations. Under Statement of Financial Accounting Standards (SFAS) 87 (Financial Accounting Standards Board (FASB) 1985), the key features of the smoothing of pension expenses include the delayed recognition of actuarial pension gains and losses and a corridor amortization scheme that requires amortization of the unrecognized gains or losses only when they exceed certain amounts. Initially intended to reduce short-term volatilities that may be incorporated into sponsoring firms' financial statements due to volatile financing or investment aspects of defined benefit plans, the

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smoothing mechanism has been alleged to serve instead as a device for producing misleading and overstated earnings.[1]

Effective as of December 2006, SFAS 158 removes the delayed recognition of pension gains and losses in the balance sheet. It requires recognition, through comprehensive income, of changes in the net pension assets in the year in which the changes occur (FASB 2007). However, the new standard maintains the SFAS 87 smoothing mechanism for income statement presentation. The FASB considers SFAS 158 as the first step in reconsidering SFAS 87 and related pronouncements. Currently, the smoothing and deferral mechanisms in the income statement are among the key issues to be resolved in the joint effort of the FASB and the International Accounting Standards Board (IASB) to improve accounting for postretirement benefits (FASB 2007).

The primary motivations for this study are twofold. First, existing research provides consistent evidence that investors apply the same, if not a higher, earnings multiplier to the smoothed pension expenses as they do to the sponsoring firms' core, recurring earnings (Barth et al. 1992; Coronado and Sharpe 2003; Hann et al. 2007).[2] Other comprehensive income items in the balance sheet, however, tend to be priced as transitory income on a dollar-for-dollar basis (Chambers et al. 2007; Mitra and Hossain 2009). Thus, if the smoothing of pension expenses is not neutral in the long term, immediate recognition of changes in the net pension assets as other comprehensive income will not resolve the threat that the bias component contained in the smoothed pension expense misleads investors.

Secondly, Hann et al. (2007) show that, compared to a fair value pension accounting model, the SFAS 87 smoothing model enhances the relevance of sponsoring firms' financial statements. The enhanced relevance results primarily from excluding highly transitory pension gains and losses from pension expenses. Nonetheless, for the smoothed pension expense to be useful, it must also be faithful, verifiable and neutral.[3] Brown (2004) notes that the long-term nature of defined benefit plans makes it difficult for users to identify errors or biases in pension estimates because the accuracy of the estimates is usually not revealed until many years later. The lack of verifiability stems from the inherent nature of the underlying transactions pertinent to defined benefit plans. It is thus critical that the smoothing process produces pension expenses that are faithful and neutral.

A number of prior studies document that managers choose pension rates and methods opportunistically, reflecting various economic incentives (Ali and Kumar 1993; Bergstresser et al. 2006; Godwin et al. 1996, etc.). However, the long-term impact of these choices remains unclear. While the smoothing of pension expenses is often justified by invoking the long-term nature of defined benefit plans, it is far from evident that opportunistic choices will wash out with time. In this study, I adopt a long-term perspective to evaluate the smoothing mechanism with an objective to document whether and in what ways the standards open doors to abusive implementation and to shed light on how the formation of standards can prevent such abuse.

To this end, my empirical tests analyze the time-series properties of the deferred gains or losses in each period (i.e., the flow) and the cumulative unrecognized gains or losses

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[1] For instance, see Gold (2005) and Zion and Carcache (2002).

[2] By contrast, investors appear to have better understanding for balance sheet implications of the pension smoothing under SFAS 87 (Gopalakrishnan 1994).

[3] Statement of Financial Accounting Concepts No. 2, *Qualitative Characteristics of Accounting Information* states that relevance and reliability are the two primary qualities that make accounting information useful. Reliability rests on faithfulness, verifiability, and neutrality, while neutrality interacts with faithfulness and verifiability to affect the usefulness of the information (FASB 1980, p. 6).

(i.e., the stock, hereafter the URGL). The research design centers on the SFAS 87 assumptions that the deferred gains (or losses) in 1 year will be offset by losses (or gains) in subsequent years and that the corridor amortization, while providing an opportunity for such offsets to take place, also "systematically and gradually" recognizes the remaining URGL in subsequent periods. In addition to firm-specific regressions, empirical analyses utilize recent panel data techniques to address econometric issues arising from the relative short time span of data available, the presence of both cross-sectional and serial correlations, the endogeneities between the deferred gains (or losses) and pension rate choices and, in particular, the distortions resulting from the aggregation over firms and years.

Main tests are conducted in a large unbalanced panel consisting of 15–20 years of observations for 839 sponsoring firms from 1988 to 2007. The results suggest that the smoothing of pension expenses is generally not neutral over time and that the corridor amortization and the latitudes in pension rates choices are likely sources of blame.

Specifically, results from panel unit root tests suggest a random walk process of the URGL for sponsoring firms from 41 out of a total of 48 industries, as defined in Fama and French (1997). At a minimum, shocks to the URGL are highly persistent. There is no indication of mean-reversion in the URGL of these firms, which would be expected if the deferred gains (or losses) were offset over time or if subsequent amortization was effective in reducing the non-offset URGL.

Results from firm-specific autoregressions reveal that the long-term expected deferred gains (or losses) are nonzero on average. These long-term expected deferred gains (or losses) reflect biases in the smoothing of pension expenses that persistently under- or overstate the sponsoring firms' earnings. For more than 87% of the sample firms, the long-term expected value is a deferred loss, suggesting pervasively understated pension expenses in the income statements. On the other hand, the subset of firms that have long-term expected deferred gains consists disproportionately of price-regulated utility and telecommunication firms.

To assess whether sponsoring firms' rate choices contribute to the bias component in the deferred gains (or losses), I employ a partial adjustment model of the deferred gains (or losses) that depicts the sponsoring firms' pension rate choices as determinants of the long-term expected deferred gains (or losses). I adopt the Arellano-Bond system generalized method of moments (GMM) estimator for panel data dynamic models (Arellano and Bover 1995; Blundell and Bond 1998) to address unobserved heteroskedasticity within firms and, to account for endogeneity in the rate choices, lagged deferred gains (and losses) and a fixed time effect. Results suggest that the choice of the expected rate of return on plan assets (ERR, hereafter) and the changes in the discount rate and the compensation growth rate tend to have a permanent effect on the long-term expected value of deferred gains (or losses), consistent with the inefficient URGL reduction interpretation of the panel unit root results. Further, the discretionary component of the change in the discount rate is consistently associated with the bias component of the deferred gains (or losses) and is its main contributor. The industry median-adjusted change in the compensation growth rate is also a significant contributor to the bias.

Overall, evidence found in this study suggests that the corridor amortization procedure is ineffective and, in practice, allows the deferred gains (or losses) partially resulting from biased estimates to persist and accumulate. The results are robust to both the inclusion and exclusion of the internet bubble and the subsequent market crash (1996–2002) and to alternative specifications of the deferred gains (or losses). Further analyses suggest that the biases from the smoothing of pension expenses are not driven by small plans. For more than 25% of the firms in the sample, the smoothing results in non-reversing deferred losses that are material in relation to the sponsoring firms' pretax earnings.

The smoothing of pension expenses has been among the key issues raised in the ongoing controversy over pension accounting among users, preparers and regulators.[4] Surprisingly, academic research on the smoothing mechanism remains sparse. Davis-Friday et al. (2005) study the use of market-related value in calculating the expected return cost component and the market assessment of its impact on reported earnings. Hann et al. (2007) evaluate the relevance of financial statements under the SFAS 87 smoothing mechanism. My study contributes to the pension accounting literature by offering an assessment of the reliability of earnings resulting from the smoothing mechanism and by identifying sources susceptible to departures from neutral representations.

Findings in this study are relevant for the standard setters' current deliberations on the smoothing mechanism for income statement presentation. As a caveat to the interpretations, the evidence presented in this study does not necessarily support the elimination of pension smoothing. It does, however, cast doubt on the effectiveness of corridor amortization and urge tightened discretion in pension rate choices.

The remainder of the paper proceeds as follows. Section 2 provides background information on the smoothing mechanism, reviews related findings and formulates hypotheses. Section 3 describes the sample and provides descriptive statistics. Section 4 explains the empirical methods and presents the results. Additional analyses and robustness tests are provided in Sect. 5. Section 6 concludes the paper.

2 Background and hypotheses

2.1 The delayed recognition and corridor amortization of pension gains and losses[5]

Actuarial pension gains and losses[6] reflect two sources of changes in the net pension assets. First, changes in the PBO resulting from changes in actuarial assumptions used in the valuation of PBO, including changes in the choice of the discount rate, the compensation growth rate for pay-related plans, assumptions on mortality, turnover, early retirement and so forth. Second, changes in the fair value of plan assets due to differences between the actual and expected return on plan investments, where the calculation of the expected return is based on an expected rate of return (ERR) and a market-related value of plan assets.[7] In an attempt to reduce the volatility that may be incorporated into financial statements due to the volatile financing or investing aspects of defined benefit plans, SFAS

[4] For instance, see Zion and Carcache (2002), Gold (2005) and Securities and Exchange Commission (SEC) (2005).

[5] Under SFAS No. 87, the delayed recognition feature also includes the delayed recognition of plan amendments, which results in unrecognized prior service cost. The current study addresses the delayed recognition of actuarial gains and losses exclusively. Unreported large sample analysis reveals that the amount of the unrecognized prior service is much smaller than that of the unrecognized gains or losses. The median ratio of the two is about one-tenth. The median ratio of the magnitude of the change in the prior service cost to the magnitude of the change in the URGL is only about four percent.

[6] Actuarial pension gains and losses are simply referred to as (pension) gains and losses in subsequent text.

[7] At companies' discretion, this market-related value of plan assets can be a moving average of the fair value of plan assets for up to 5 years. Davis-Friday et al. (2005) show that the difference between the market-related value and the fair value of plan assets results in differences that, on average, amount to 8.5% of the reported expected returns cost component in 1998 and 2.4% in 2001.

I

Practice Note

Russell Investments

Russell Research

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JANUARY 2011

Pre-empting FASB: mark-to-market pension cost accounting

Issue: Current U.S. accounting standards offer corporations flexibility in how they account for the cost of pension benefits. In recent weeks, a number of firms have announced that in their 2010 (and future years) corporate earnings statements, they will recognize more quickly changes in the value of pension assets and liabilities, moving toward "mark-to-market" accounting. What are the implications of such a change?

Because accounting is an area in which common practice is important, the actions of these firms may create a trend.

Response: The most volatile component of pension cost – referred to as actuarial gains and losses – has traditionally been spread over several years in the earnings statement, in order to avoid distorting earnings numbers and creating excessive variability in the year-to-year results. However, this approach is complex and opaque and the numbers it produces don't necessarily mean a great deal.

A different approach, proposed for example in a 2010 International Accounting Standards Board (IASB) discussion document, is to recognize these gains and losses more quickly, but to do so in a separate part of the earnings statement. This allows analysts to easily delineate them from other earnings. This principle is the one on which Honeywell's, AT&T's and Verizon Communications' recent announcements have been based.

Because accounting is an area in which common practice is important, the actions of these firms may create a trend in advance of the widely-expected change in the standards issued by the U.S. Financial Accounting Standards Board (FASB) or the International Accounting Standards Board (IASB).

Background

The announcements

On November 16, 2010, Honeywell issued an investor update in which they announced that they will annually recognize mark-to-market gains and losses (outside a 10% corridor) in their income statement, and that they will separate pension expense into two elements: ongoing expense and mark-to-market adjustment. The mark-to-market adjustment will be made in the fourth quarter of each year (and not in quarterly statements). On January 13, 2011, AT&T announced that they too would use a once-a-year mark-to-market adjustment to recognize gains and losses in the year incurred. AT&T also announced a change in how costs are assigned to business units. On January 21, 2011, Verizon Communications followed suit. AT&T and Verizon went further than Honeywell in that they retained no corridor at all. Further details of all three announcements can be found on the investor relations section of each company's website[1].

These changes are permissible under existing accounting standards (as set out in Statement of Financial Accounting Standards No.158), but represent a departure from how most firms currently account for pension expense.

These changes represent a departure from how most firms currently account for pension expense.

Definitions of key terms

Before going any further, we should be clear on the definition of two key terms.

1. **Actuarial gains and losses**. These are easiest to think of as the change in the value of assets and liabilities that arises from unexpected sources. For example, if at the start of a year a plan assumes future returns of 8% on a $60m asset base, then expected investment returns for the next twelve months are $4.8m: if actual returns are $5.8m then there is an unexpected gain of $1m. Actuarial gains and losses also occur when there is a change in the discount rate for the valuation of liabilities (which is tied to the level of interest rates) or other assumptions used in valuing the liabilities. Under the approach announced by the three corporations, these gains and losses are to be dealt with through an annual mark-to-market adjustment. Because of the uncertainty in investment returns and interest rates, actuarial gains and losses can be large and can have a substantial impact on the earnings result. For example, the restatement of 2008 results for Verizon Communications and AT&T include a $15 billion adjustment and a $25 billion adjustment respectively for that year's earnings – enough to turn previously positive earnings-per-share (EPS) numbers for that year into negative ones.
2. **Corridor**. A corridor is a smoothing technique under which, rather than spreading gains and losses in the corporate earnings statement over a number of years, they are ignored altogether unless they exceed a certain specified level (such as 10% of the greater of assets and liabilities). Thus, in the example described in the previous paragraph, the $1m unexpected gain would be ignored for the purposes of corporate accounting if a corridor were being used (since $1m is less than 10% of the asset value).

[1] The websites are www.honeywell.com/investor, www.att.com/investor and www.verizon.com/investor respectively.

The impact

We summarize in the appendix to this note the expected impact on 2010 earnings for each of the three firms. For two of the three firms, 2010 reported earnings are lower under the new approach (the result of actuarial losses in 2010 being marked to market rather than amortized), while for Verizon they are higher (2010's actual loss being, in their case, less than the loss carried over from previous years that would have been recognized under the previous approach). For all three firms, the impact of the change is expected to be positive in future years, since it removes the impact of past losses that had not yet been recognized under the old approach; the gain or loss in 2011 and beyond will reflect that year's experience but be free from any hangover caused by the gradual recognition of 2008's losses[2].

For all three firms, the impact of the change is expected to be positive in future years.

The change by AT&T and Verizon in how costs are charged to business units is noteworthy. Actuarial gains and losses will be included in the consolidated corporate accounts, but not in the results of the segments of the business. Indeed, not only are the actuarial (i.e. unexpected) gains and losses excluded from business segment results, but so are all asset returns and interest cost. The business units are therefore to be charged for the estimated cost of benefits as they accrue, but from that point onward the management of the assets and liabilities becomes a purely corporate concern. We believe this approach may appeal to other firms which are made up of a number of distinct business units.

What is not affected

The change in accounting affects how business results are presented, but not the underlying operation of the business. In particular, the changes do not affect:

- **SALES OR CASH FLOW.** There is no impact from the accounting changes on any of the three firms' business operations.
- **EMPLOYEE BENEFITS.** While the cost of employee benefits that is shown in company accounts will change, the benefits themselves remain the same as before.
- **PENSION FUNDING.** The cash contributions made by the corporations to their pension plans are unaffected by accounting change.
- **BALANCE SHEET.** The changes affect only the profit and loss statement, and not the balance sheet of the corporations in question.
- **PENSION PLAN INVESTMENT STRATEGY OR RETURNS.** While there is no direct impact on the plan from how the corporation chooses to account for its cost, plan fiduciaries in general have become increasingly conscious of investment risk in recent years, and one reason for that is the greater awareness at the corporate level of the impact of that risk on the health of the plan and its impact on the corporation. Hence accounting change may potentially have an indirect impact on pension strategy. Indeed, Honeywell's announcement included comment on the future funding and investment strategy of their plans. One unsatisfactory element of the existing accounting regime is the misalignment of interests it can create (a subject we have explored elsewhere). The changes announced by the three corporations are a step forward to the extent that they reduce the incentive to base pension plan asset allocation decisions on anything other than the true tradeoff between risk and return.

[2] In Honeywell's case, the retention of a corridor means that some losses will still be deferred for future recognition – about $2.0bn rather than $7.5bn.

Share prices

Since there is no impact on corporate cash flow or pension funding, the change that is being made lies not in the underlying economic events but entirely in how the results are reported. In that sense, there is a strong argument to be made that there should be no impact on the share price of a corporation, no matter what their approach to pension cost accounting. This ignores the question of perception, however.

Prior to announcing the change to a mark-to-market approach, Honeywell already used a shorter amortization period than peers. The belief that this hurt its share price was a factor in the decision to change (they rejected the idea of moving in line with peers as an inferior approach, so chose instead to create a more obvious distinction in their approach). This implies that the market is not processing available information perfectly.

It could be said, then, that these companies are taking a risk in making the move to a mark-to-market approach. If analysts and investors fail to understand or react negatively to the change, their stock valuations could be hurt.

However, as we have described elsewhere, this is a subject that has been analyzed extensively in recent years.[3] International and U.S. accounting standards are expected to move in this direction within a few years. These significant moves – by three major corporations – will increase awareness of the issues and could themselves cause a change in perception. All things considered, then, it seems to us that the market is likely to be able to rationally process the new presentation of pension expense, and that the impact on share prices should be minimal.

AT&T CFO Rick Lindner observed that " the more we *looked at different methods, the more complex the amortization and the benefit accounting became and we finally stepped back from it and said* 'let's go in the *opposite direction:* let's make this simpler'".

The rationale

Each corporation argues that the changes improve transparency and represent better accounting. In AT&T and Verizon Communications' case, the removal of interest cost and asset returns from business unit results also appears to have been a factor.

It could be said that this represents a watershed for pension cost accounting, in that we have reached a point where the complex adjustments required to amortize market fluctuations through the earnings statements over several years are no longer seen as worthwhile. Introducing the change, AT&T CFO Rick Lindner observed that "the more we looked at different methods, the more complex the amortization and the benefit accounting became and we finally stepped back from it and said 'let's go in the opposite direction: let's make this simpler'". The drawbacks of the change (will investors understand why earnings numbers have become more volatile? will it affect share price? will we be forced to change again when accounting standards are next revised?) now appear, to these CFOs at least, to be outweighed by the advantages.

There is also a timing consideration here. Honeywell noted that there is the possibility of actuarial gains over the medium term should rates rise: the new approach allows corporations to book those gains faster.

We would also note that most corporations – including these three – suffered large actuarial losses in 2008. Those losses would have impacted earnings for several more years under the previous accounting approach. By making the change now, companies can put 2008's losses behind them.

[3] Gannon (2009) describes how analysts are trained to adjust company results to remove the effects of different choices in how they present pension expense.

Implications for others

With these firms having beaten the path, it will be easier for others to follow. One of the biggest risks in moving toward mark-to-market is that investors will misunderstand it or perceive it negatively. That risk is greatly reduced if others have already made the change.

The importance of peer actions was acknowledged by Verizon Communications CFO Fran Shammo, who indicated that the actions of AT&T and Honeywell had accelerated Verizon's change (which would likely otherwise have been made a year later at the end of 2011.)

Widespread change among corporations could force the hands of the FASB. We have previously predicted a change in U.S. standards sometime around 2014 (a prediction based on the progress of changes to international standards and efforts to standardize across regimes)[4]. The dynamics of change would be transformed if a substantial number of others follow the lead of these three corporations.

Widespread change among corporations could force the hands of the FASB.

If the principle of marking to market wins out, then some questions would still remain. One is the use of a corridor. On that question, we would expect a single approach to dominate eventually; it seems to make little sense for half of the market to use a corridor and half not to. The reaction to the two telecommunications companies' decision to rip off the band-aid in one move and abandon the corridor altogether will therefore be important.

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[4] See Appendix 2 of Collie (2008). The IASB's timetable has slipped a little since that was written.

Appendix: Estimated Effect of Changes on 2010 Pension Expense

Source: Corporate Statements

Exhibit 1

Honeywell Inc.

	Previous Accounting ($B)	Revised Accounting ($B)
Service Cost	(0.3)	(0.3)
Interest Cost	(1.0)	(1.0)
Expected Asset Return	1.2	1.1
Amortization of Gain (Loss)	(0.7)	n/a
Q4 Mark-to-Market Adjustment	n/a	(1.4)
Pension Income (Expense)	(0.8)	(1.6)

EPS impact: $0.66 per share loss for 2010

Exhibit 2

AT&T Inc.

	Previous Accounting ($B)	Revised Accounting ($B)
Service Cost	(0.8)	(0.8)
Interest Cost	(5.6)	(5.6)
Expected Asset Return	5.8	4.8
Recognized Actuarial Gain (Loss)	(0.7)	n/a
Q4 Mark-to-Market Adjustment	n/a	(2.7)
Pension Income (Expense)	(1.3)	(4.3)

EPS impact: $0.29 per share loss for 2010

Exhibit 3

Verizon Communications Inc.

	Previous Accounting ($B)	Revised Accounting ($B)
Service Cost	(1.1)	(1.1)
Interest Cost	(3.4)	(3.4)
Expected Asset Return	2.8	2.4
Amortization	(0.4)	n/a
Recognized Actuarial Gain (Loss)	(1.7)	n/a
Q4 Mark-to-Market Adjustment	n/a	(0.6)
Pension Income (Expense)	(3.8)	(2.8)

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Aon Hewitt
Retirement & Investment

Pension Funding Strategy

Considerations for Prefunding a Pension Plan

March 2016

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Executive Summary

Seven years after the U.S. stock market bottomed in the global financial crisis, U.S.-qualified defined benefit (DB) pension plans continue to run significant deficits. At year-end 2015, we estimate the aggregate pension deficit for S&P 500 companies to be $445 billion. One might expect that the prolonged underfunded position would result in significant required contributions on the horizon. However, two key themes have emerged from regulatory activity over this period:

1. Required contributions have been deferred by Congress; and

2. The annual penalty for maintaining an underfunded plan has increased significantly. The Pension Benefit Guaranty Corporation (PBGC) premium assessed on pension deficits from will rise five-fold, from 0.90% in 2013 to 4.50% by 2020.

This mixed bag of regulatory changes has given plan sponsors the flexibility to reduce contributions to DB pension plans, while at the same time increasing the financial penalties for doing so. These conflicting factors have prompted many plan sponsors to review their approach to pension plan funding. This paper lays out the considerations for prefunding an underfunded pension plan:

- The decision to make discretionary pension contributions (i.e., prefund) should be considered as part of an organization's overall capital budgeting strategy. Like other capital budgeting decisions, pension funding should be evaluated both relative to the organization's cost of capital and other uses of capital.
- Many plan sponsors will find significant advantages to prefunding to avoid PBGC premiums. Organizations without sufficient cash reserves may find it attractive to borrow to fund the plan.
- Borrowing to fund effectively exchanges soft debt for hard debt. While most rating agencies and lenders consider pension deficits to represent long-term liabilities similar to long-term debt, there are differences in the impact on other financial risk measures such as interest coverage ratios that should be considered.
- The attractiveness of such a strategy depends on the pension discount rate (typically investment grade corporates), the tax status, and borrowing costs and capacity of the sponsor.
- If the after-tax borrowing cost is less than the sum of the pension discount rate and PBGC variable premium rate, the math is likely favorable to borrow to fund the plan.
- The impact on investment policy, actuarial assumptions and methods, and potentially plan design also should be considered in determining whether to borrow to fund, as well as the implications for the plan and the organization's capital structure.

Pension Funding

Introduction

A holistic approach to pension risk management integrates four key dimensions:

1. Investment Policy
2. Funding Strategy
3. Plan Design
4. Assumptions and Methods

These four dimensions are highly interdependent as, for example, changing interest rate assumptions dictated by new laws will influence funding strategies, which in turn should impact investments. Therefore, effective plan management requires consideration of all four dimensions. This white paper focuses on the key role of funding strategy. We should note that a funding strategy, particularly when it involves borrowing to fund, also entails another element—that is, the capital structure and borrowing capacity of the plan sponsor. All funding decisions should be made in the context of the plan sponsor's assessment of this use of capital in its overall capital strategy.

Recent Trends

The introduction of the Pension Protection Act (PPA) effective beginning in 2008 for most plans coincided with the biggest U.S. recession in almost 80 years. Aon Hewitt analysis indicates cash contributions as a percentage of operating cash flow (OCF) jumped from 2.8% in 2007 to 5.3% in 2009 at the median. One in four sponsors saw contributions spike to at least 10% of OCF. For one in 20, this ratio jumped to over 35%.

While equity markets took time to recover, Congress interceded with successive rounds of funding relief in 2010, 2012, 2014, and, most recently, 2015. Given the new higher-funded ratios under the latest funding relief measures passed into law, sponsors generally reported that they expected to contribute even less to their plans in 2015 than in the prior two years. Instead of being held to a more rigid funding regime under PPA, plan sponsors have been afforded flexibility to fund less. However, contributions are not going away entirely and many plan sponsors report making discretionary contributions.

Should Plan Sponsors Expect Funding Relief?

2008 Worker, Retiree, and Employer Recovery Act (WRERA)—Allowed smoothing of pension plan assets for up to two years, rather than the averaging originally provided by PPA.

2009 IRS Yield Curve Guidance—While no formal bill was passed, the IRS allowed plan sponsors to select a full yield curve approach for valuing the 2009 plan year liabilities before moving back to smoothed rates without any restriction. This allowed plan sponsors to use interest rates as high as 8% for valuing funding liabilities and cash requirements.

2010 Pension Relief Act (PRA)—Allowed plan sponsors to fund the pension plan deficit over nine years or 15 years rather than the seven years normally required by PPA.

2012 Moving Ahead for Progress in the 21st Century Act (MAP-21)—Allowed plan sponsors to use a 25-year average interest rate measure to determine pension liabilities rather than the 24-month/current yield curve.

2014 Highway and Transportation Funding Act (HATFA)—Extended provisions of MAP-21 and impact of pension funding relief for an additional five years.

2015 Bipartisan Budget Act (BBA)—Further extended the provisions of MAP-21 by an additional two years, along with further increases to PBGC premiums.

Congress has seemingly provided funding relief at every turn. While plan sponsors should not rely on future rounds of relief, it would not be surprising if they received it.

Implications of Maintaining an Underfunded Plan

Increasingly, plan sponsors are considering pension funding strategy from a corporate finance perspective. Stakeholders often consider the gap between pension liabilities and pension assets as a form of debt to be incorporated into the capital structure of the company. In basic terms, debt in the form of a pension deficit is like a mortgage in that the principal and interest are paid over time and the interest rate is the discount rate on the liability—long-duration investment grade corporate bonds in most cases.

Pension debt has different characteristics than hard debt, which influences which type of debt is more appealing. Among those differences are:

- Pension debt is much more volatile, as its value is influenced by changes in interest rates, equity returns, and sponsor funding. If the long-anticipated rise in interest rates ever occurs, pension debt might even be forgiven, as higher discount rates reduce funding obligations.
- Pension debt has different payback terms than other forms of debt.
- Pension debt does not (directly) impact debt coverage ratios.
- Pension debt does not always (or directly) impact an organization's borrowing capacity.
- Pension debt carries a significant "tax" (i.e., PBGC premiums).

PBGC Premiums

Pension plans appear better funded as the new funding relief rules reduce the minimum required contributions, thereby reducing corporate tax deductions and increasing the taxes paid by corporations sponsoring defined benefit pension plans. In fact, a stated goal of two recent funding relief measures (MAP-21 and HATFA) was to increase government "revenue" to pay for some of the other provisions in the bills in which they were included (i.e., transportation and highway bills).

At the same time, both the flat-rate and the variable-rate PBGC premiums have been (and are) increasing significantly, as shown in the table below:

Plan Year	Flat-Rate (per participant per year)	Variable-Rate (per $1,000 of unfunded vested benefits)
2012	$35	$ 9
2013	$42	$ 9
2014	$49	$14
2015	$57	$24
2016	$64	$30
2017	$69	$34
2018	$74	$39
2019	$80	$44
2020	$82 (indexed)	$45 (indexed)

Companies electing to fund their plans according to the new rules may leave their plans well underfunded on a PBGC premium basis (where deficits are measured under the old rules) and expose themselves to a significant premium—4.50% by 2020—on the amount of the deficit. This increase in the carrying cost of pension debt has a significant impact on how the cost of this form of debt compares to other traditional financing, and is likely to continue to spur many investment grade companies to reduce pension debt.

Plan De-Risking

Maintaining a poorly funded pension plan makes it difficult for the plan sponsor to implement some business objectives:

1. A pension plan funded below the 80% threshold would not be able to take advantage of one of the most prevalent strategies today: de-risking a pension plan via a lump sum window for inactive participants. Lump sum windows allow plan sponsors to both reduce their pension footprint and future administration and PBGC costs.

2. A poorly funded plan also may result in a deferral of asset portfolio de-risking as glide path triggers are not met as quickly. This leaves plan sponsors with the difficult decision of maintaining market risk exposure for longer.

3. Finally, a poorly funded plan could be an obstacle to mergers and acquisitions because of its impact on corporate valuations.

While the funding relief rules give more flexibility to defer plan funding, the factors described above make it less desirable to make use of this enhanced flexibility.

Economics of Prefunding vs. Minimum Contributions

There are numerous perspectives and factors that the plan sponsor should consider when comparing "fund-now" and "fund-later" strategies, as outlined by the examples below.

Pension Plan Perspective

The following example studies the case of an ongoing pension plan that is 80% funded as of January 1, 2016, with \$4 billion in assets and \$5 billion of liabilities measured using current interest rates (approximately 4.50%).

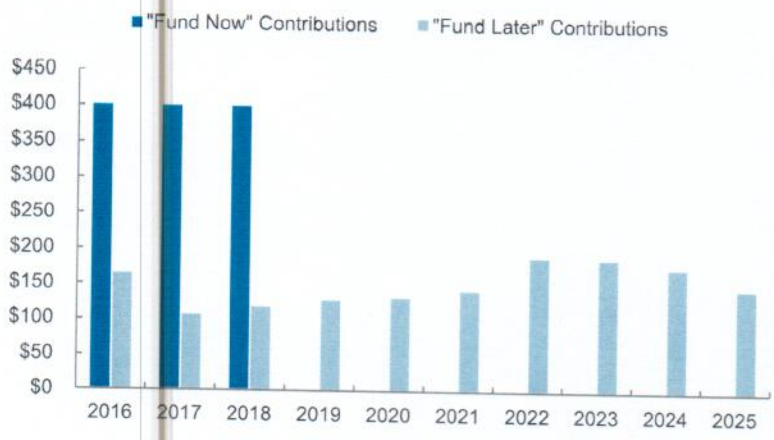
Two alternative funding strategies are considered:

1. The fund-now strategy assumes the plan sponsor would fund \$400 million per year over the next three years, which will fully fund the plan and allow it to remain over 100% funded for the next 10 years.

2. The fund-later strategy assumes the plan sponsor contributes just the minimum required contribution determined using the current rules.

For purposes of this comparison, the interest rate environment has been assumed to remain constant at January 2016 levels (approximately 4.50%), the plan's assets were assumed to return 7.00% per year and the plan sponsor pays the PBGC premiums out of company assets rather than the pension trust.[1] The 7% asset return assumption for both scenarios is reasonable for an apples-to-apples comparison between the two alternatives. However, many plan sponsors may have a glide path strategy in place, so that once a pension plan is better funded, the asset allocation will shift more towards fixed income, resulting in a lower expected rate of return on assets. The following chart and table shows the impact on cash requirements under these two funding strategies.

[1] Most plan sponsors pay PBGC premiums from the trust. However, this is just a timing issue and the long-term economic and accounting impact of this assumption is very small.



	2016–2020	2021–2025	10-Year Total
"Fund Now" Contributions	$ 1,200	$ 0	$ 1,200
"Fund Now" PBGC VRP	$ 25	$ 0	$ 25
"Fund Later" Contributions	$ 648	$ 842	$ 1,490
"Fund Later" PBGC VRP	$ 93	$ 49	$ 142

In this example, following a fund-later strategy results in paying $290 million more over the 10-year period in contributions. The funded status under both scenarios at the end of 10 years is approximately 100%. However, on top of the $290 million in cash contributions to the plan, the plan sponsor will have paid an additional $117 million to the PBGC in variable rate premiums (VRP) under the fund-later scenario. Given the magnitude of this tax, the PBGC premiums should indeed be a major consideration.

The example above assumes the PBGC variable rate premium cap is not reached in any of the years. However, it is important to note that if a pension plan is currently impacted by the per-participant cap, additional cash contributions will not result in any PBGC premium savings unless they are large enough to bring the funded status below a certain threshold. In other words, the last dollars contributed to the plan may be more valuable than the first ones. Rising VRP rates ensure that many plans will be newly impacted by the VRP cap in the near future.

Sources of Funding

Existing Cash

The most natural way for a defined benefit plan sponsor to fund up their plan is via existing corporate cash. This is a complex decision where other factors must be considered. The company may want to remain flexible and maintain good cash availability, or it may be that other more tax-friendly options are available.

Borrow to Fund

If corporate cash is not available, one way to meet the pension obligation is to borrow. One approach is to issue debt and, in recent years, many corporations (including Dow Chemical, UPS, Ford, Northrop Grumman, Motorola, and others) have issued bonds with a portion of the proceeds going towards their pension plans.

Contribute Equity

The Employee Retirement Income Security Act (ERISA) contains certain statutory exemptions from prohibited transaction rules, one of which applies to contributions of company stock. Certain restrictions do apply, the most important being that the value of the company stock held by the pension trust after the contribution may not exceed 10% of the fair market value of the plan's assets.

Contribute Real Assets

This option is not commonly used by U.S. corporations, primarily because of ERISA restrictions. Outside the U.S., these in-kind contributions are more common and they generally take the form of real estate or company inventory.

Corporate Balance Sheet Perspective

Fund with Existing Corporate Assets

Plan sponsors also should take into account financing costs, tax implications, and potential impacts on earnings per share, debt-to-equity and interest coverage ratios before deciding the best strategy for their current situation. Let's assume a U.S. tax-paying corporation has cash available and is evaluating the economic benefits of making a discretionary contribution to the pension plan versus using the cash for a different corporate project. We further assume that the plan sponsor will not take on additional risk exposure and will invest this additional contribution in some form of long-duration fixed income with a rate of return of 5.00%. Any contribution to the pension plan will grow tax-free and eliminate a 3.00% variable rate premium paid to the PBGC in 2016 (if the plan is underfunded). So, the 2016 ROI for the plan sponsor deciding to use company cash to fund the pension plan is 5.00% + 3.00% = 8.00%.

To the extent this return on investment is attractive relative to other uses of cash, strong consideration can be made to funding the pension plan. For a cash taxpayer, the benefits are more significant due to the tax deduction generated by the pension contribution. The hurdle rate above grows over time as the PBGC premium amounts increase as summarized on page 3. The key takeaway from the above example is that, if the company has cash available, the fund-now strategy has merits that need to be considered from an overall corporate finance perspective.

Borrow-to-Fund Strategies

When cash is not readily available, considerations should be given to borrow-to-fund strategies. In recent years, the cost of borrowing has dropped to historic lows. Therefore a borrow-to-fund strategy becomes an even more appealing alternative, especially considering the dramatic increase in PBGC premiums. If the plan sponsor gets the funding from external debt, the attractiveness of the fund-now strategy will largely be based on the after-tax borrowing rate of the plan sponsor, and how that compares to the hurdle rate (i.e., pension discount rate plus PBGC premium rate). As long as the company has not used up their borrowing capacity, the return on corporate assets becomes irrelevant, because this strategy involves swapping one form of debt for another and therefore does not necessarily divert funds from investment in other projects.

A simple rule of thumb is that a fund-now strategy makes sense as long as the borrowing cost is less than the pension discount rate plus the PBGC variable rate premium. The rule of thumb for the breakeven point can be augmented to reflect the fact that the interest on the newly created debt may be tax deductible:

$$\text{Borrowing Cost} \times (1 - \text{Tax Rate}) = \text{Pension Discount Rate} + \text{PBGC Variable Rate}$$

In today's interest rate environment, this means that borrowing to fund can present favorable economic outcomes for organizations with an after-tax borrowing cost of 7%–8% or less. The table on the following page shows which strategy is more favorable under different scenarios.

Fund Now vs. Fund Later		Borrowing Cost			
		6%	**8%**	**10%**	**12%**
Discount Rate = Pension Asset Return	**3%**	Now	Now	Later	Later
	4%	Now	Now	Now	Later
	5%	Now	Now	Now	Same
	6%	Now	Now	Now	Now

To put the table above in the context of our earlier example, if the plan sponsor can borrow at a cost of less than 11% (11% x (1 – 35%) = 7.15% which is less than 4.50% discount rate + 3.00% PBGC premiums), there may be significant financial benefits associated with borrowing cash to fund the pension plan sooner rather than later. For example, if the plan sponsor can borrow funds at 4.00% to fully fund the plan over the next three years (following the schedule shown on page 5), the company's overall balance sheet at the end of 10 years will have improved by an amount in excess of $350 million.

Conclusions

Recent regulatory changes provide plan sponsors additional cash flexibility and may imply a lower focus on the key dimension of funding strategy. However, PBGC premium costs are higher than ever as the premium rates paid on underfunded liabilities are scheduled to quintuple by 2020 from their 2013 levels.

Recent data shows that many U.S. companies have significant stores of cash available that could be used for discretionary funding of the pension plans they sponsor. We showed that when the company decides to hold that cash for a different corporate purpose, the return on that investment needs to be significantly higher for the two strategies to be equivalent. We also showed that consideration should be given to borrow-to-fund strategies because borrowing costs have been at historic lows in recent years. In general, if the after-tax borrowing cost is lower than the discount rate used for liabilities plus the PBGC variable premium rate (7%–8% as of early 2016), a borrow-to-fund strategy may be appealing from a corporate finance perspective.

Combining these facts, the environment has changed to make the case stronger than ever for pension plan sponsors to consider a funding strategy different from the regulatory minimum.

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