Citigroup Global Markets Inc.

May 11, 2018

Pension Risk Management

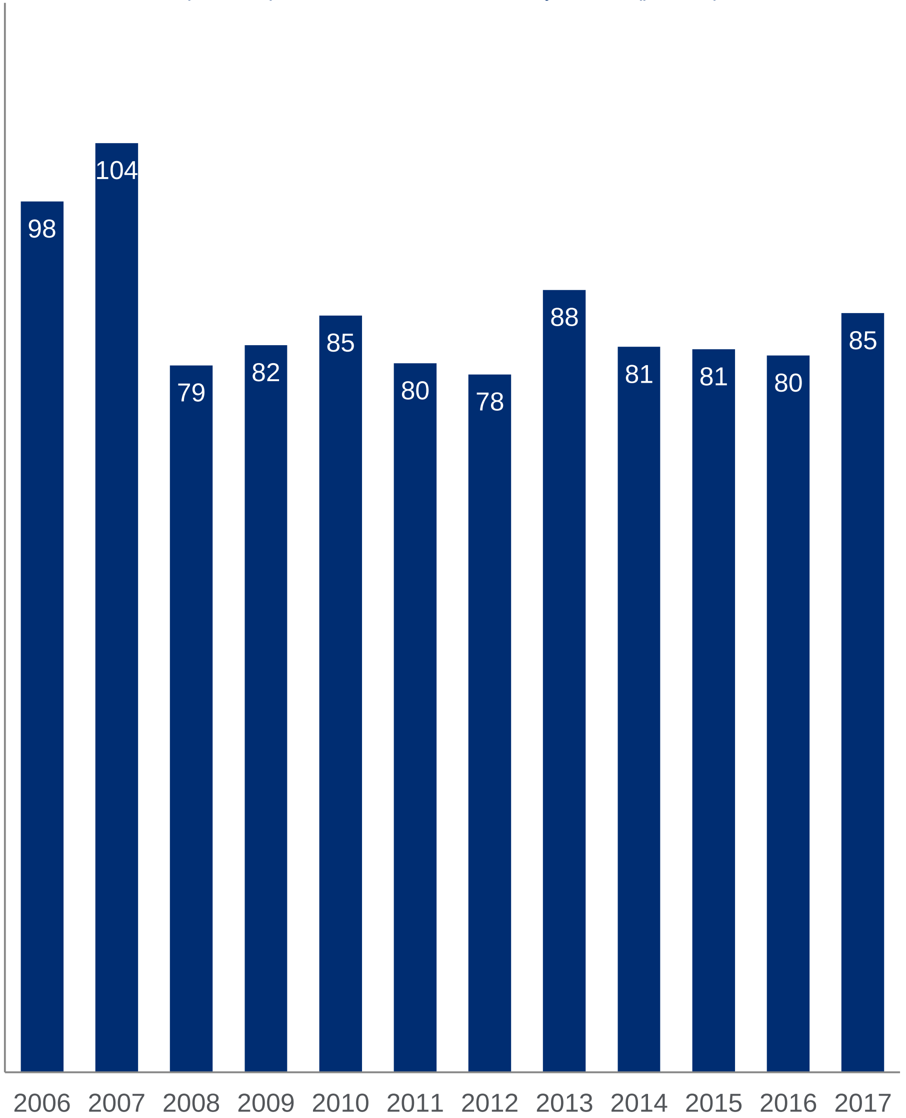
Corporate Pension Funding Still Under Pressure

After Years of Low Interest Rates …

Citi Pension Liability Index at month-end (percent)

… Corporate Pensions Remain Significantly Underfunded

Median S&P 500 pension plan's funded status at fiscal year-end (percent)



Source: Citi, Bloomberg, FactSet.

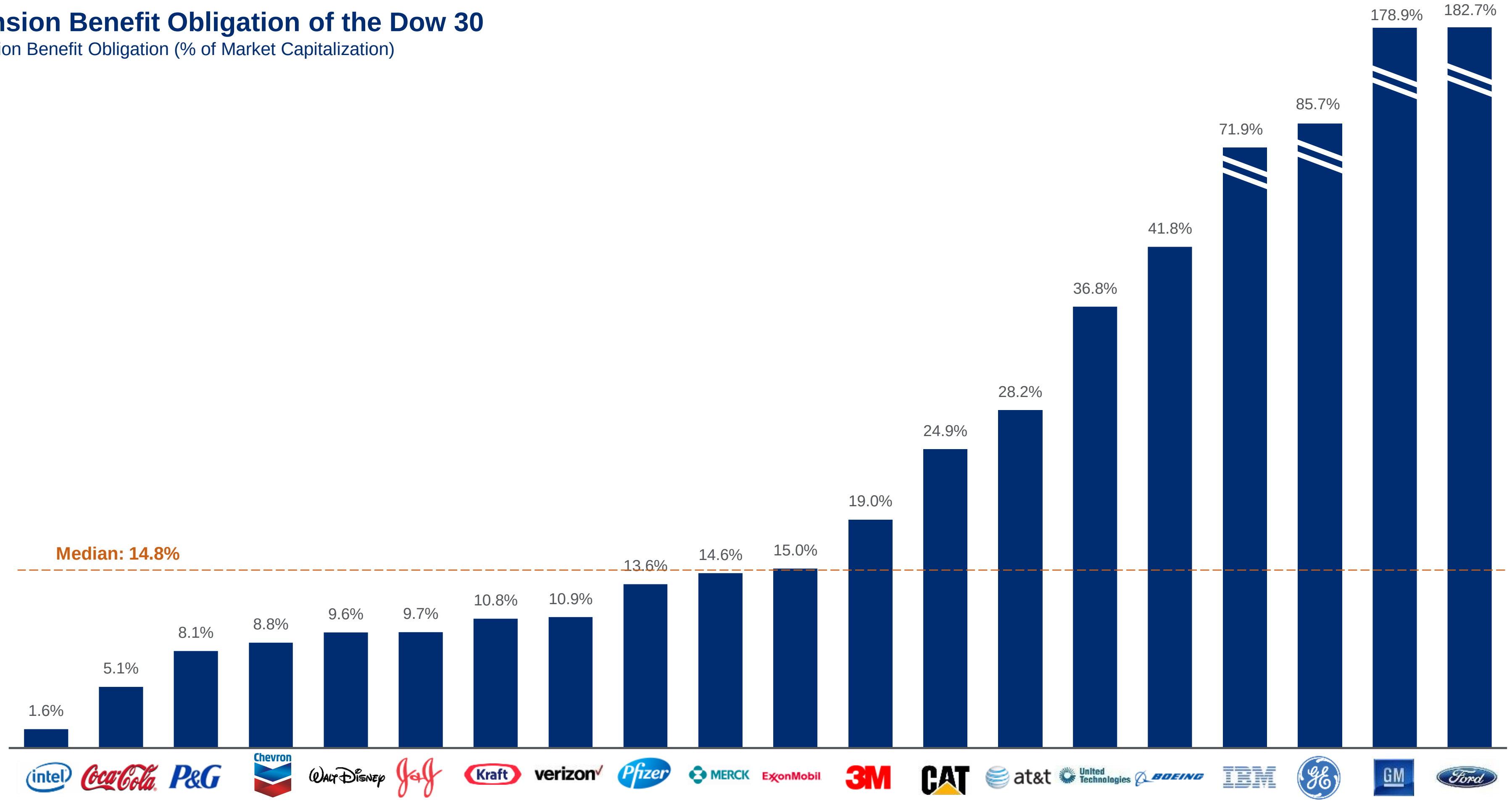
Note: The Citi Pension Liability Index (CPLI) is an approximation for the discount rate used to value GAAP pension liabilities.

Large Cap Industrials' PBOs Are Largest in the Dow 30

Industrial companies tend to have the largest pension obligations, both on a dollar basis and as a percentage of market cap, in the Dow 30.

Pension Benefit Obligation of the Dow 30

Pension Benefit Obligation (% of Market Capitalization)



PBO	$3,842	$9,455	$16,160	$19,120	$14,532	$33,221	$8,183	$21,531	$28,805	$21,387	$47,273	$24,862	$21,932	$61,638	$36,999	$80,393	$101,554	$100,288	$91,239	$80,438
Moody's	A1	Aa3	Aa3	Aa2	A2	Aaa	Baa3	Baa1	A1	A1	Aaa	A1	A3	Baa1	A3	A2	A1	A2	Baa3	Baa2
S&P	A+	AA-	AA-	AA-	A+	AAA	BBB-	BBB+	AA	AA	AA+	AA-	A	BBB+	A-	A	A+	A	BBB	BBB

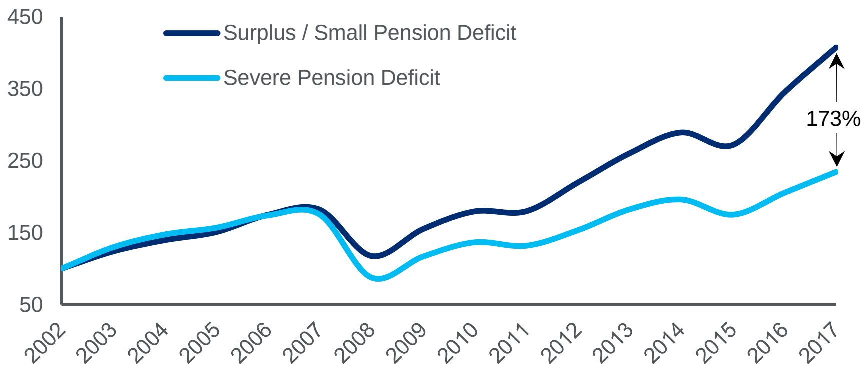
Source: Company Filings. FactSet, Moody's, S&P. Market data and credit ratings as of 03/31/2018.
Note: Pension data as of last available fiscal year-end.

Pension Problem Creates a Drag on Valuation

Empirical evidence suggests that corporates with smaller pension liabilities, smaller deficits, and lower equity allocation in plan assets outperform.

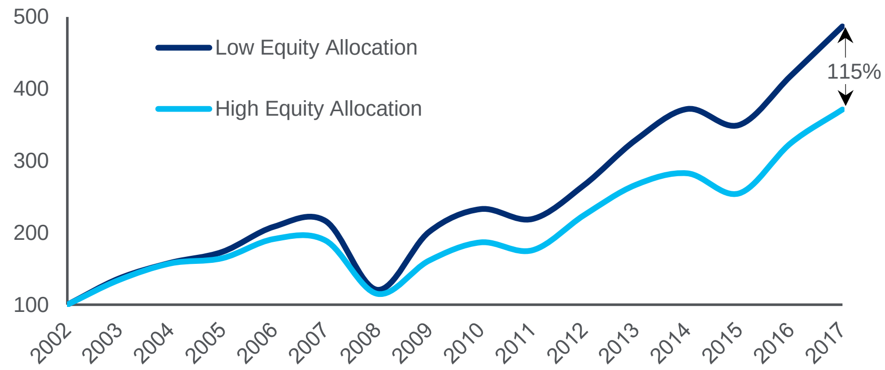
Firms With Large Pension Deficits Underperform…

Cumulative shareholder returns (%), pension deficit as percent of market capitalization



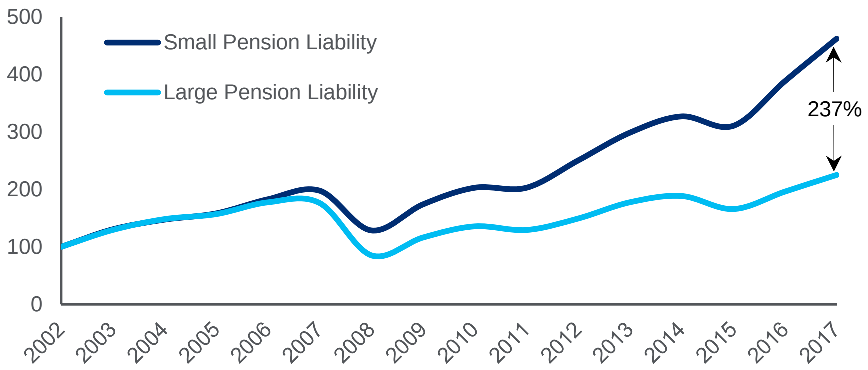
…As do Firms With High Equity Allocation

Cumulative shareholder returns (%), pension asset equity allocation (%)



Size of Pension Liability a Significant Driver of Value

Cumulative shareholder returns (%), PBO as percent of market capitalization



Focus on Size of Pension Liability

- Risks imposed by pension plans can be directly linked to the size of liabilities:
  - Value of pension liabilities changes with interest rates and mortality trends, exposing firms with larger pension plans to greater risk
  - Many institutional investors consider the overall magnitude of pension liabilities as an important factor in deriving their investment thesis for a firm

Source: FactSet. Company Filings.

Note: Stock price return based on annual year-end sorting of companies in the S&P 500 based on whether they are above or below the median level of pension deficits relative to market value in the industry, equity allocation in the industry, or pension liability size relative to market capitalization in the industry.

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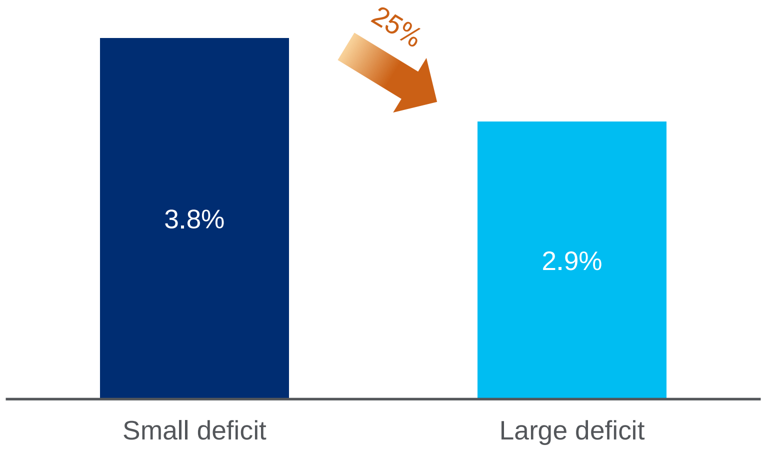
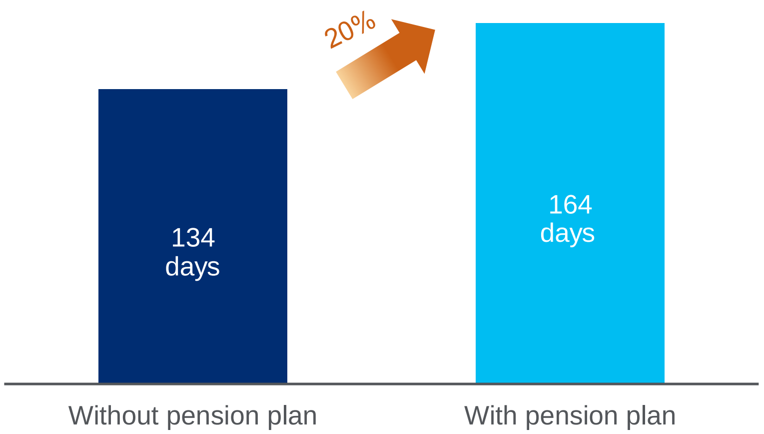
Pension Funding Can Improve Asset Sale Likelihood and Returns

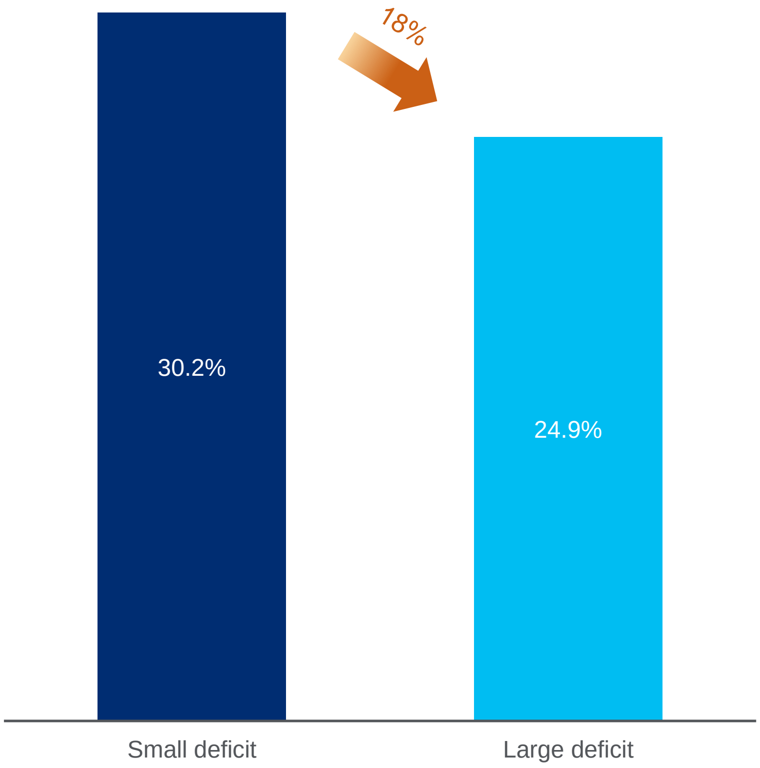
Sales Less Likely When Burdened by a Large Pension…
Annual likelihood of S&P 1500 company being acquired, 2005-2017



… and Increased Time to Complete Transactions
Average time to completion in acquisitions of S&P 1500 companies, 2005-2017



… with Lower Premiums Received …
Average one-day premium paid in acquisitions of S&P 1500 companies, 2005-2017



Source: FactSet, SDC. Note: Based on the regression on the value of the firm's pension deficit, or a binary variable indicating the presence of a pension plan, and the following control variables: total assets, earnings before interest and taxes, cash plus short-term investments, total debt plus pension deficit, year fixed effects, and industry fixed effects. Sample includes S&P 1500 non-financial firms from 2004 through 2016, and every acquisition $500 million or greater that was announced during the period from January 2005 through April 2017. Companies with "large" ("small") pension deficits are those whose pension deficit (as a fraction of total assets) was in the top (bottom) quartile of their industry peers.

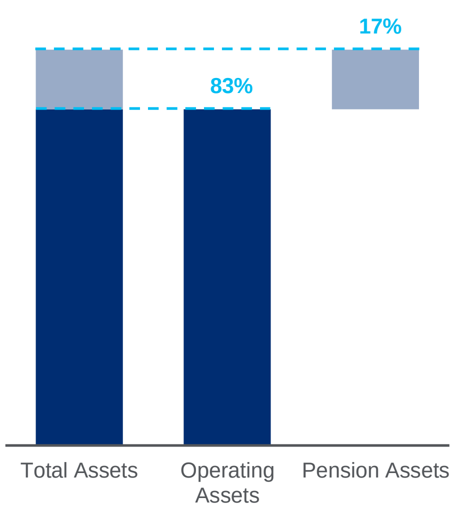
Pensions Inflate Firm Risk and Increase the Cost of Capital

Pension risk contributes to overall risk of the company. De-risking the pension could lower the asset beta and hence the cost of capital.

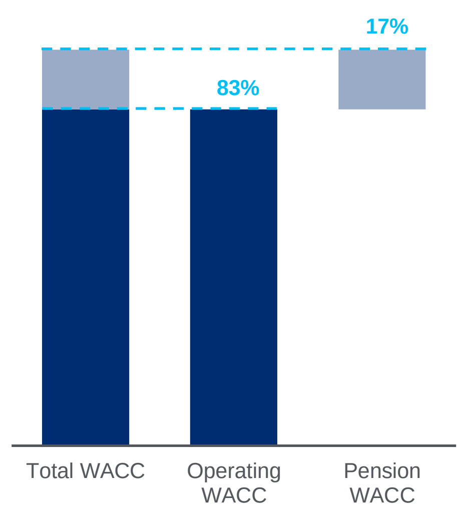
- The cost of capital should include both operating risks and pension risks
- The riskiness of the pension, and the corresponding impact on cost of capital, depends on the overall size of the pension liability, the amount of underfunded deficit and the riskiness of the plan assets
- Strategies that reduce or transfer the riskiness of the pension exposure can reduce equity beta and lower the cost of capital

Illustrative Example

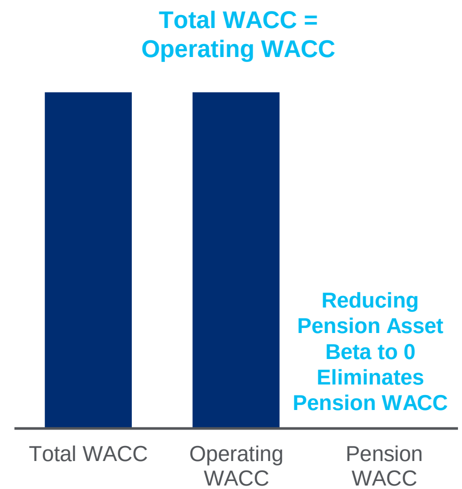
Equity Beta Reflects Both Operating and Pension Risk



While the Operating WACC Is Independent from Pension Risk…



…Transferring the Pension Portfolio Reduces Overall WACC

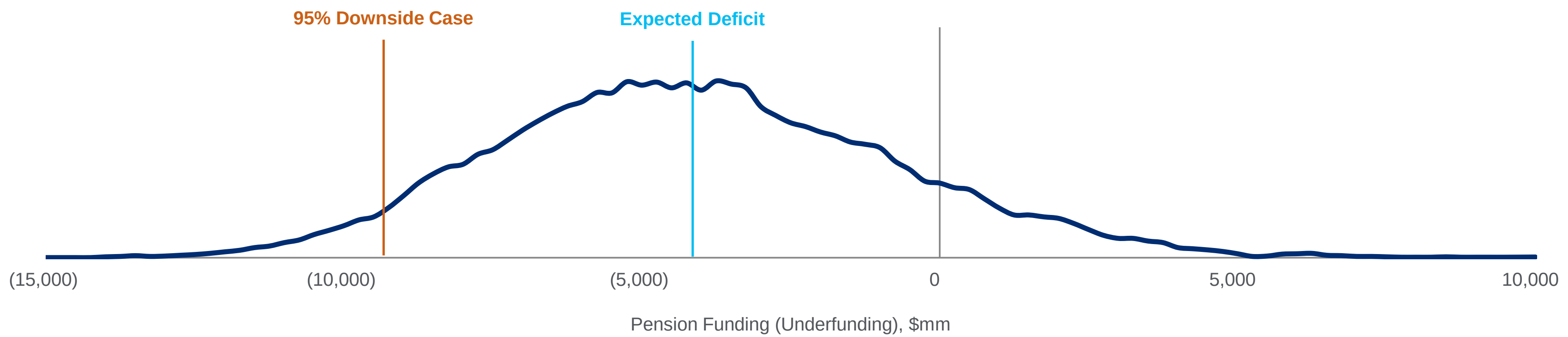


Pension Volatility Can Increase Leverage

A more volatile pension is more likely to result in a large underfunded status, which will weigh on agency-adjusted leverage metrics.

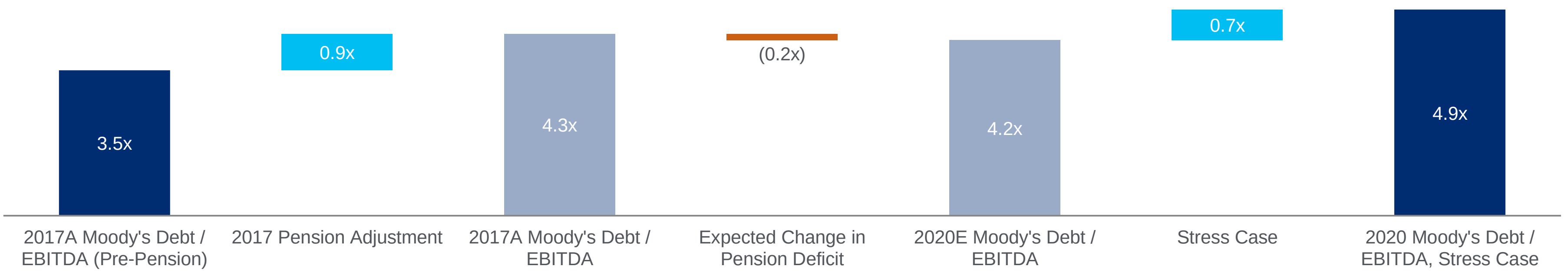
Significant Variability in (Under)funded Status

Distribution of Pension (Under)funding Outcomes, Illustrative



In a Stress Scenario the Pension Deficit Can Materially Increase Leverage

Moody's Adj. Debt / EBITDA with Stress Case Bridge, Illustrative

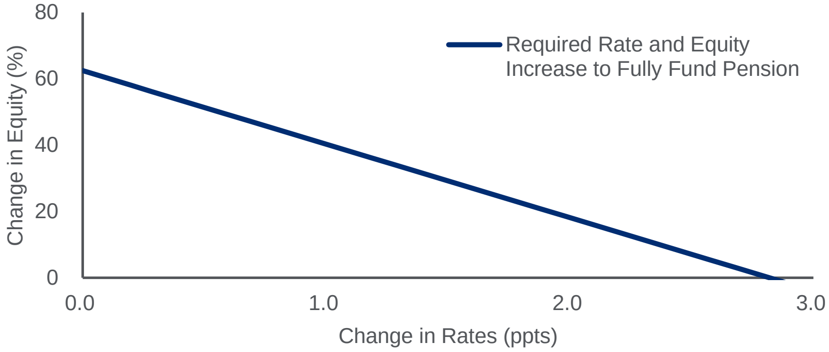


Why Address the Pension Now?

Even with rising rates, the pension deficit is unlikely to fund itself organically. More firms are taking advantage of accommodative debt markets and rising PBGC premiums to fund their pensions now.

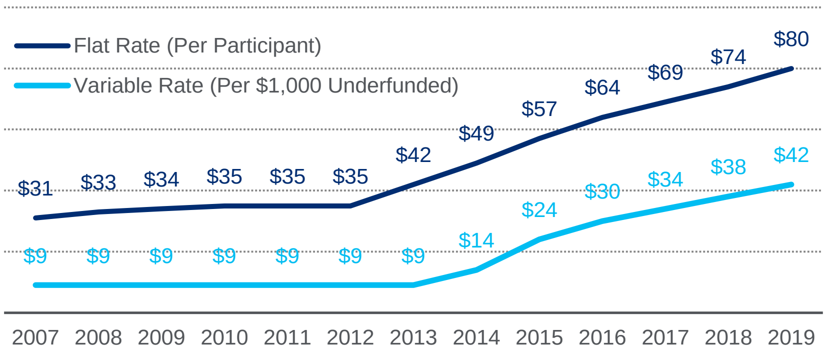
The Pension Plan is Unlikely to Self-Fund

Required Return on Rates and Equity to Fully Fund Deficit



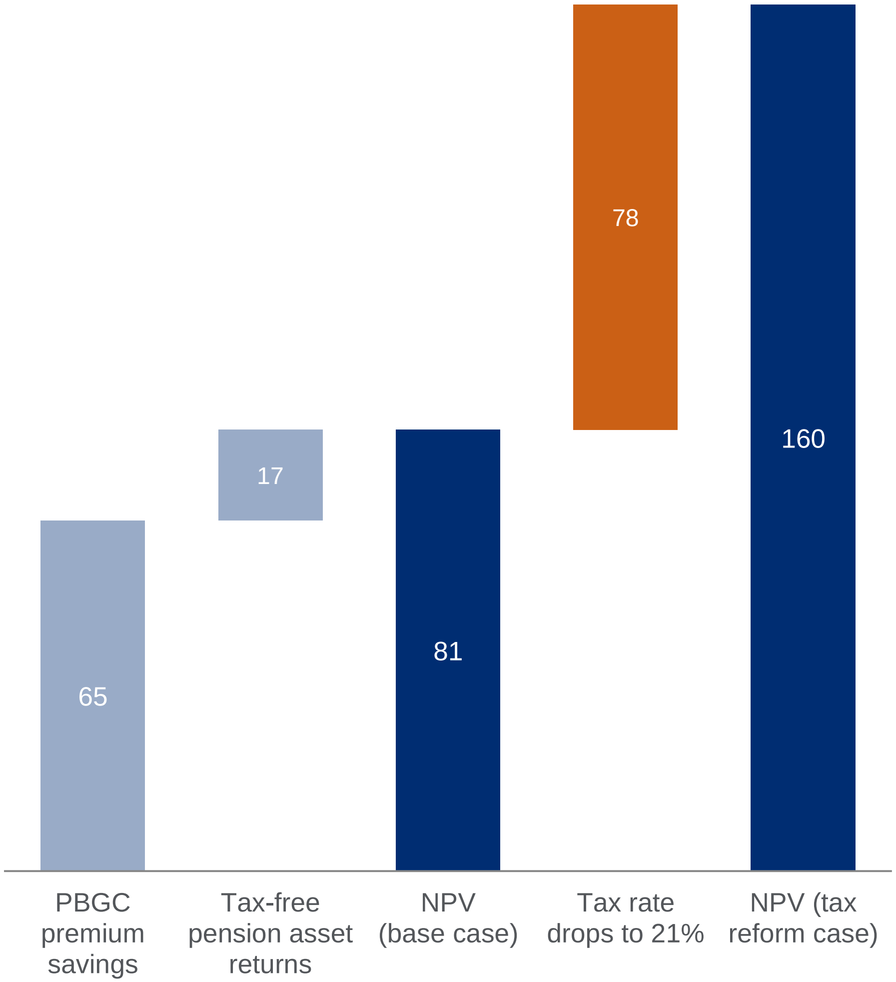
PBGC Premiums Are Schedule to Rise

PBGC Premiums



Tax Reform Curtails Benefits of Later Contributions

Illustrative NPV of funding $500 million pension deficit today ($ million)



Source: Company filings and press releases, Bloomberg, Citi, EIU, Pension Benefit Guaranty Corporation.
Note: Benefit obligations modeled as a fixed rate bond with a duration of 12.4. Volatilities and correlations based on 10 years of monthly data for the corresponding asset class benchmarks. Applies principal pension allocation to entire pension program.

Key Pension Risk Considerations

Important to Address Pension Risk Sooner Rather Than Later

- Persistent low rate environment makes it difficult for the pension to “organically” fund itself with asset growth alone
- Scheduled rise in PBGC premiums and impact of tax reform create an incentive to fund the pension now
  - Until September 2018, pension contributions will remain tax deductible at the old 35% rate; beyond that it will drop to the current 21% rate

Addressing Pension Risks Creates Value and Maintains Financial Flexibility

- The size of the pension liability can leave a company exposed to significant tail risks that could materially erode financial flexibility
  - Asset sales are more difficult when burdened by a large pension deficit
  - Equity investors view pension risks as a drag on valuation
  - Pension exposure also inflates the firm’s overall risk and distorts its cost of capital
- De-risking or transferring the risk of a pension liability could:
  - Meaningfully reduce the cost of capital
  - Reduce risk of plan assets, decreasing likelihood of pension deficit growing

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