



**Asset
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Presentation to CIEBA: Trends in 2015 Pension Fund Data

Goldman Sachs Asset Management

May 2016

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Top 5 concerns of US corporate Defined Benefit (DB) Plan Sponsors in 1H 2016



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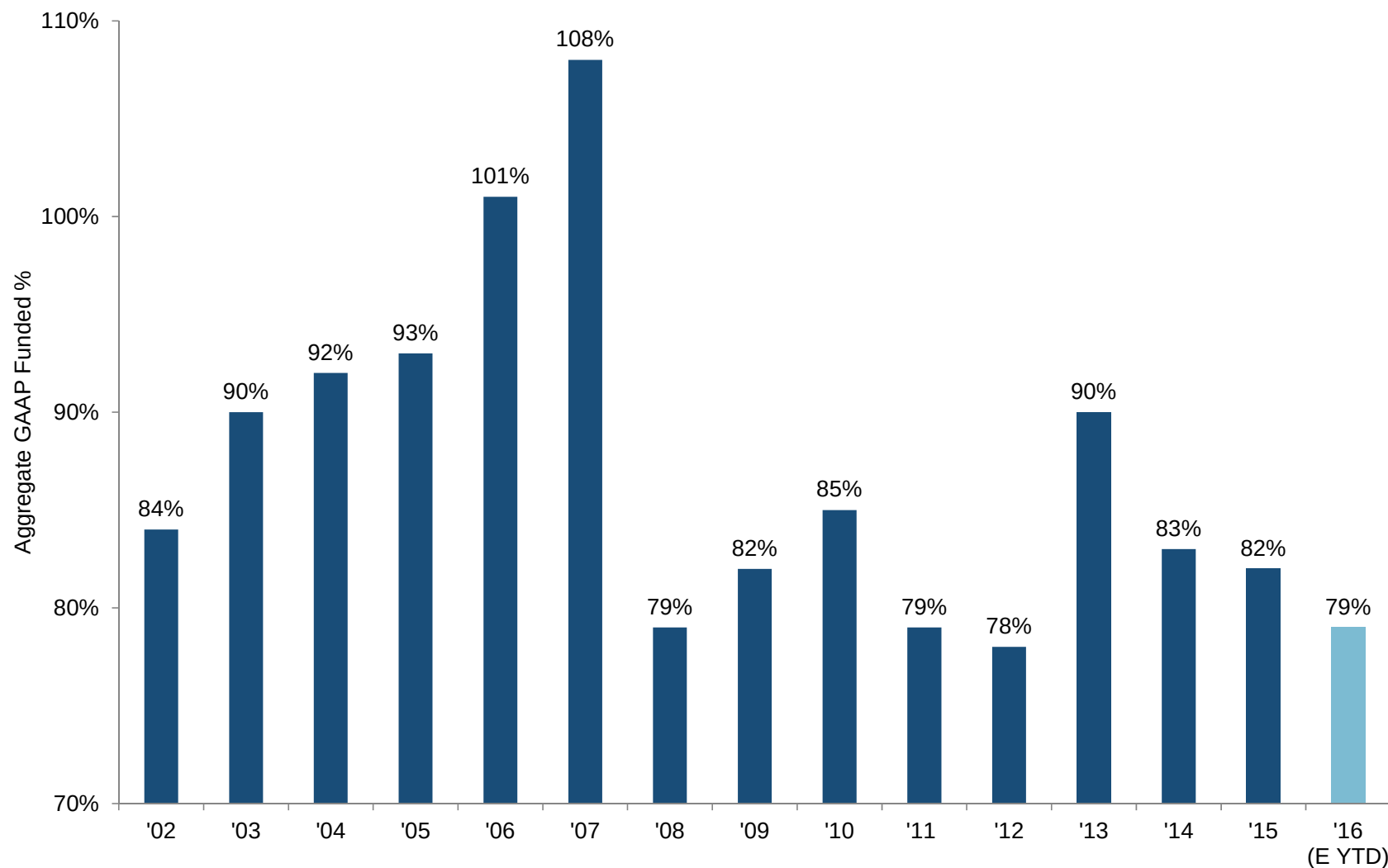
Based on research and conversations with corporate defined benefit pension plans, the following themes surfaced:

1. How to achieve their return targets in a low return environment
2. Impact of higher plan costs from increased Pension Benefit Guaranty Corporation (PBGC) flat and variable rate premiums
3. Equity risk still dominates asset risk in their portfolios despite steady reductions to this asset class in recent years
4. Want to hedge more interest rate risk, but concerned about doing it at these levels as well as reallocating capital away from growth seeking assets when still underfunded
5. They have lots of good ideas, but have difficulty from a governance perspective getting them approved and implemented

Low interest rates, mortality changes and negative cash flow have all contributed to low funded %s



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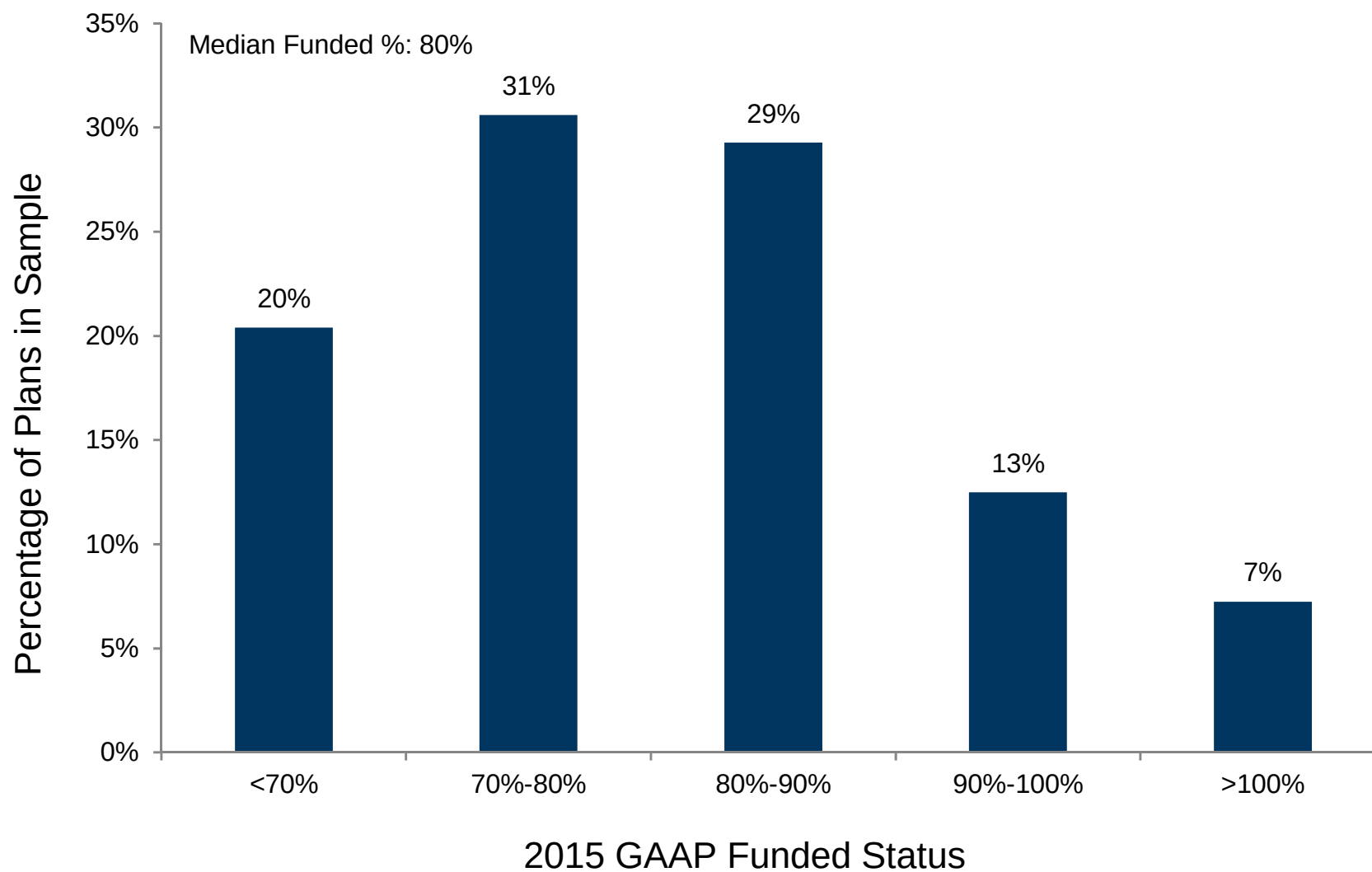


Source: Goldman Sachs Asset Management; company reports; analysis based upon the US plans (when specified) of S&P 500 companies; as of April 2016; for illustrative purposes only. The figures here are estimated and are subject to potentially significant revisions over time. Actual figures may vary significantly from the information presented above.

The distribution of funded ratios is leaning to the left



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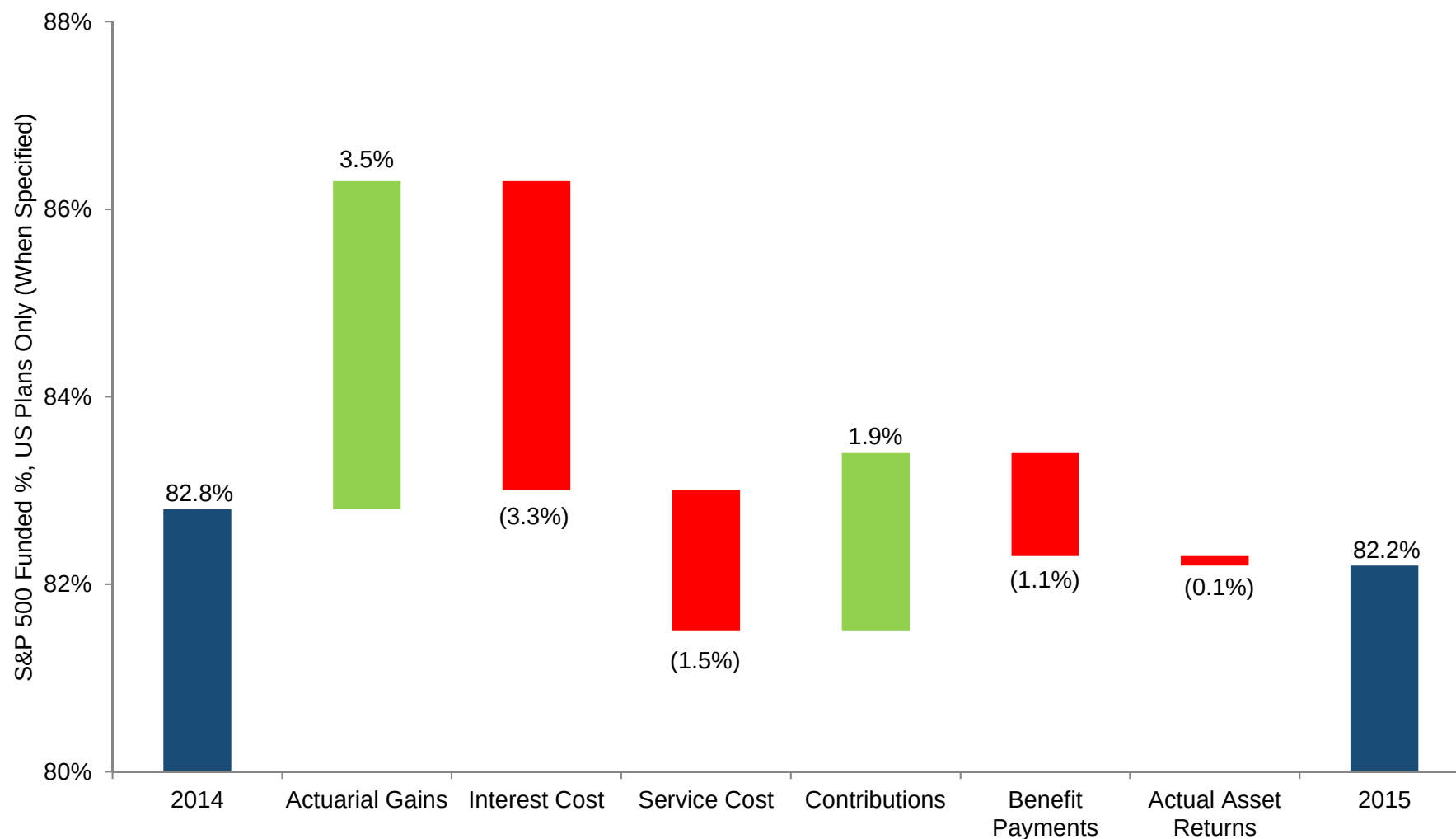


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Funded status attribution analysis: Various factors generally offset each other in 2015



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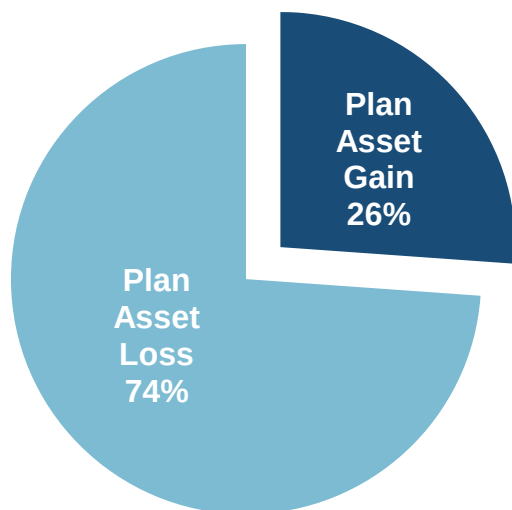
Source: Goldman Sachs Asset Management; 2015 company reports; analysis based upon the US plans (when specified) of S&P 500 companies

Majority of plans in 2015 had negative plan asset returns and were cash flow negative

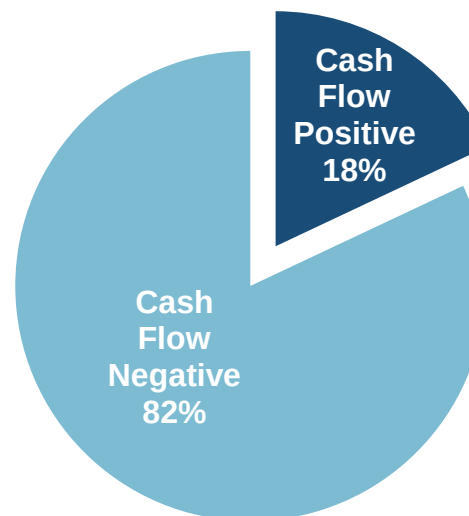


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Plan Asset Returns



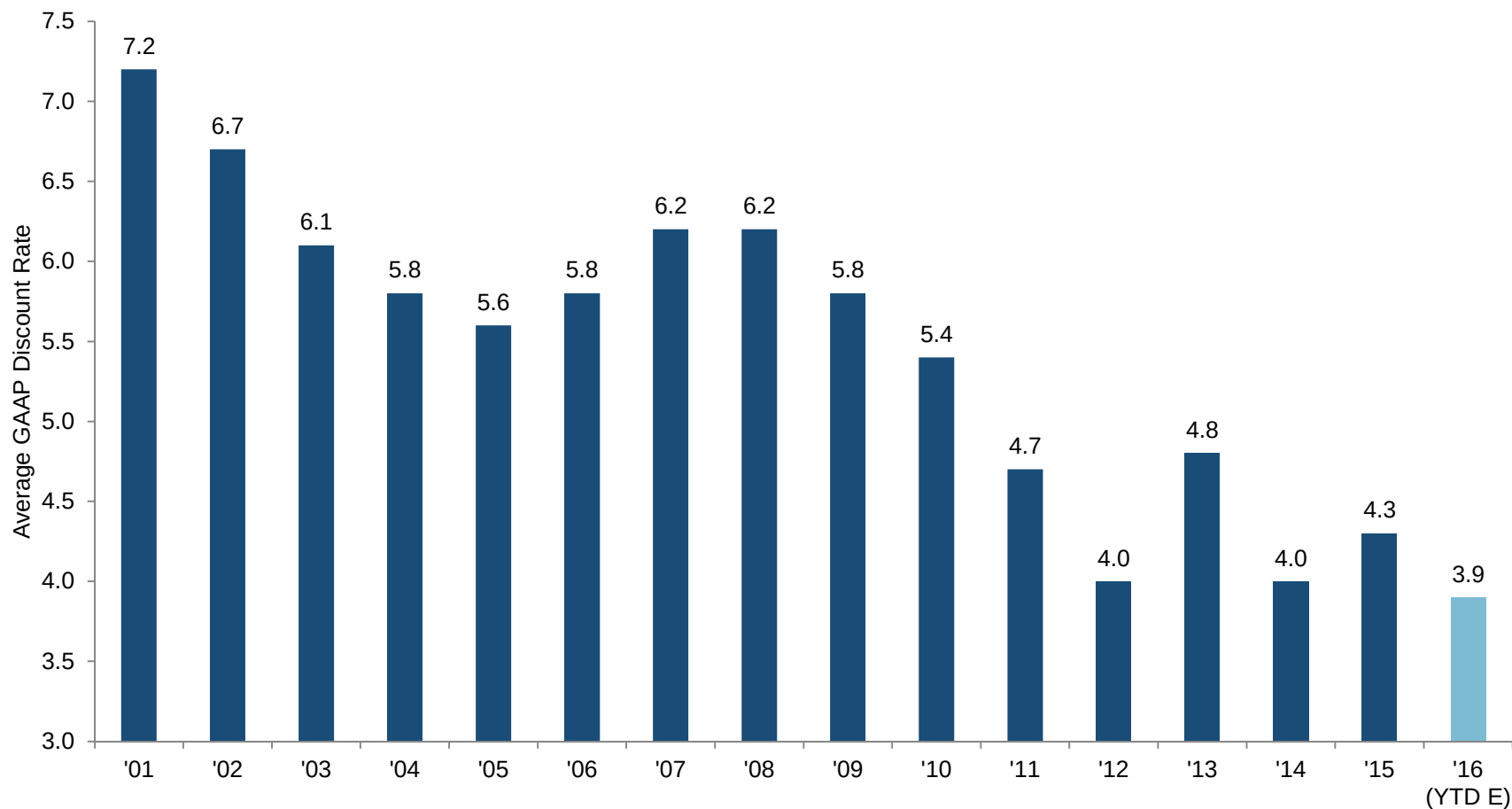
Benefit Payments vs Contributions



The increase in discount rates in 2015 has already been erased YTD in 2016



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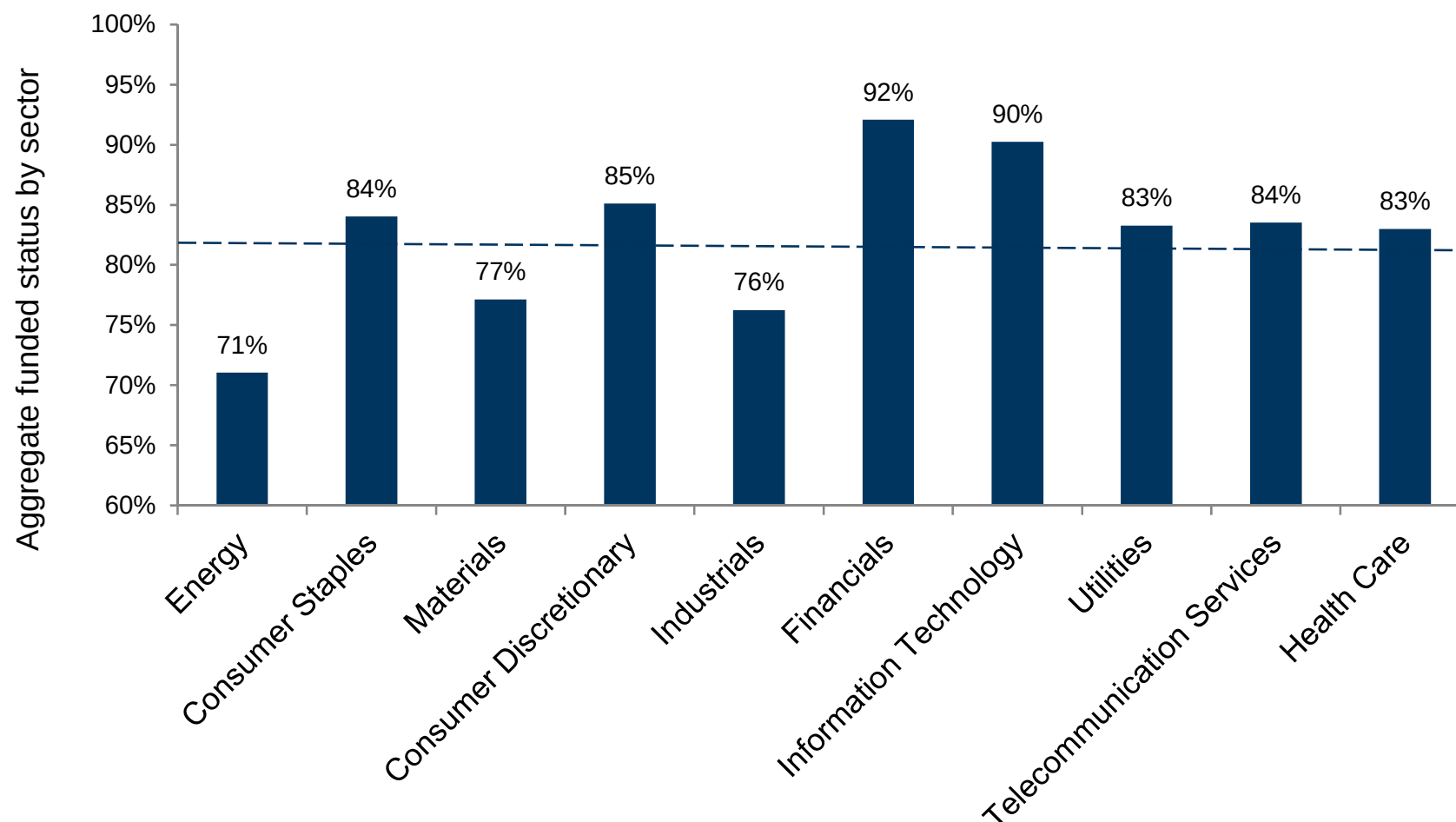


Source: Goldman Sachs Asset Management; company reports; analysis based upon the US plans (when specified) of S&P 500 companies; analysis for each year only includes those companies with a December fiscal year-end. The 2016 YTD figure is estimated and is subject to potentially significant revisions over time. Actual figures may vary significantly from the information presented above.

Funded status varies notably across sectors...



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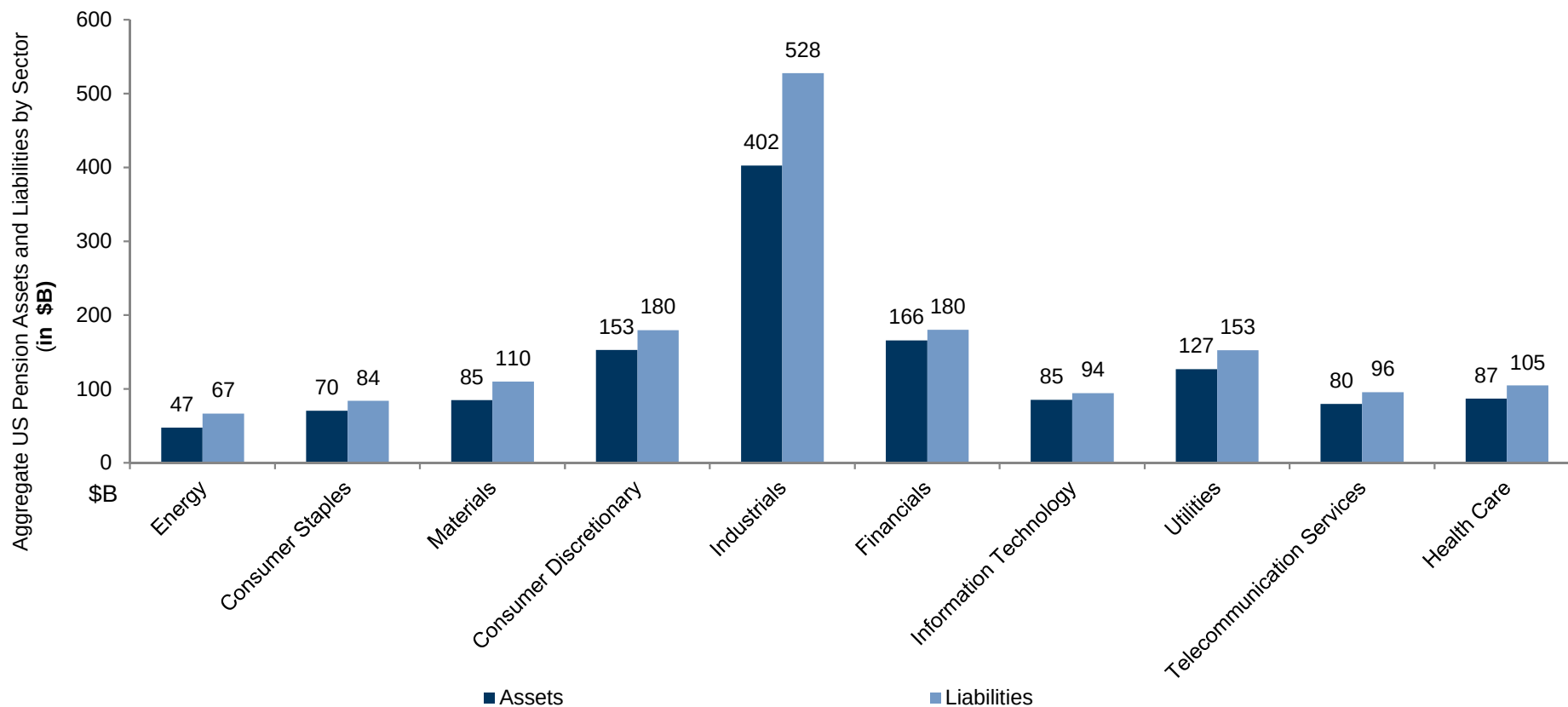


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...as does the size of pension plans



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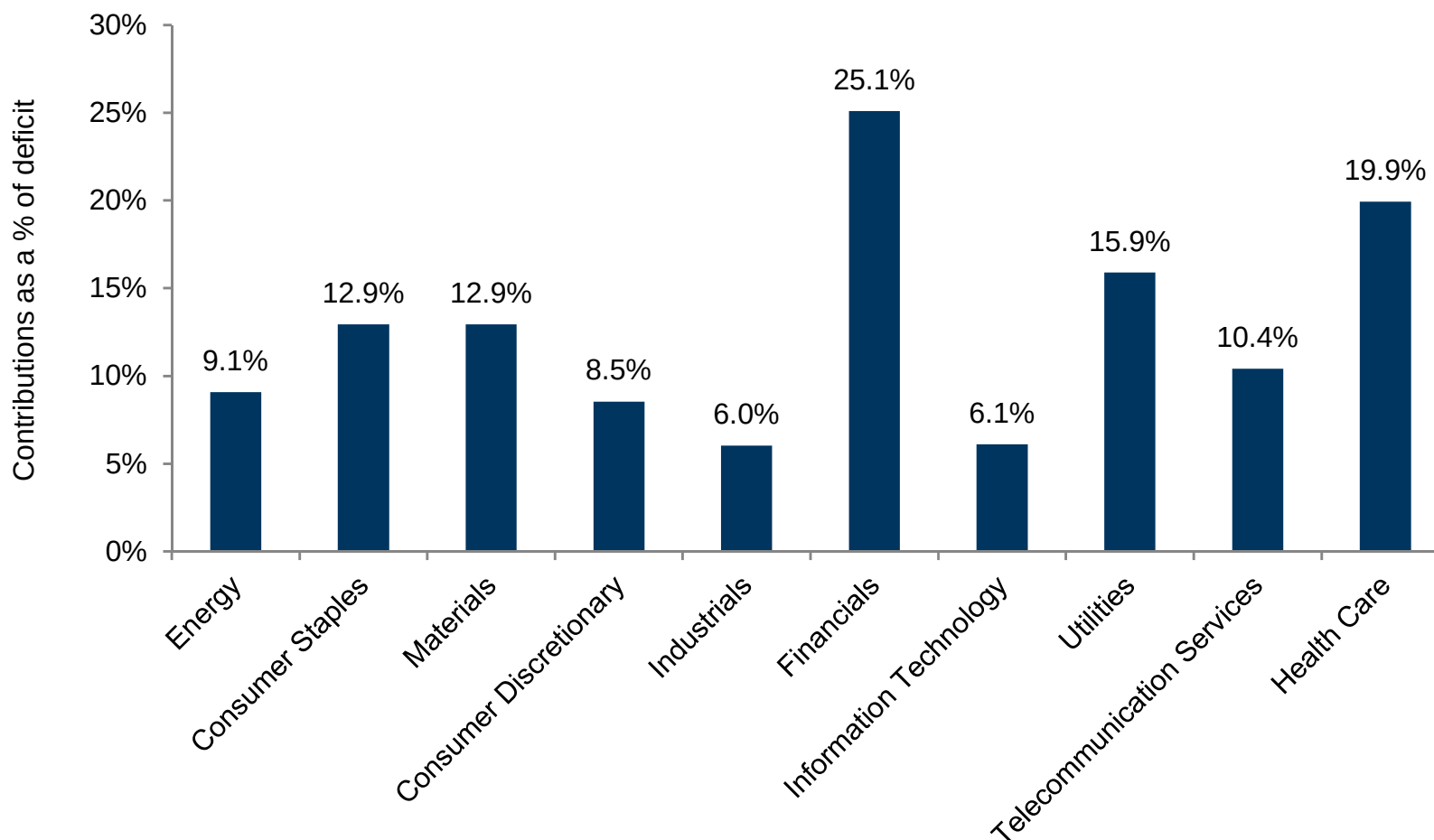


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Contributions as a percentage of outstanding deficits appeared to be meaningful for many sectors



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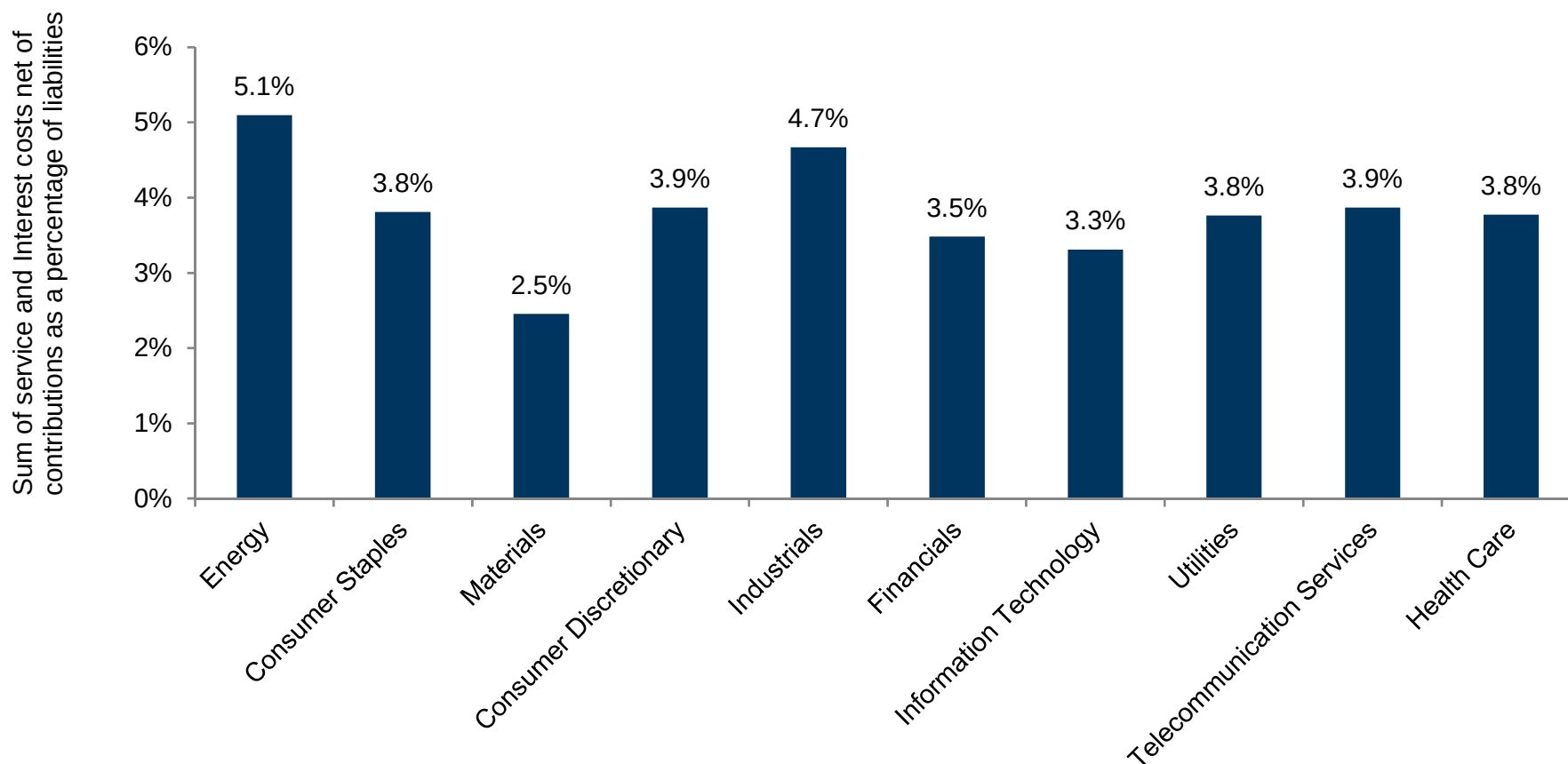


Source: Goldman Sachs Asset Management; company reports; analysis based upon the US plans (when specified) of S&P 500 companies; all data for fiscal year 2015; for illustrative purposes only. Please see additional disclosures at the end of this presentation.

However, the impact of contributions was generally insufficient to offset collective impact of yearly service and interest costs



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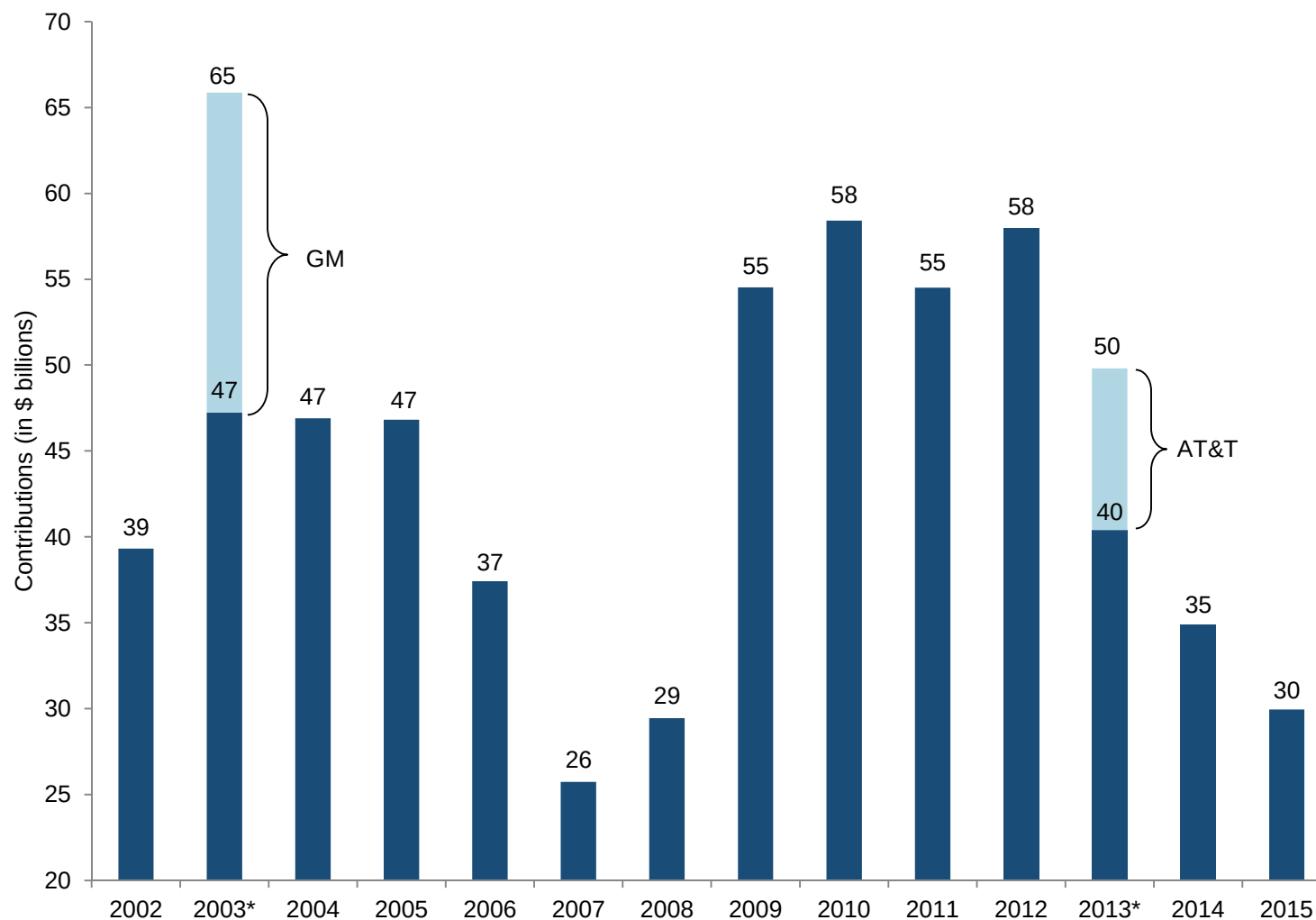


Source: Goldman Sachs Asset Management; company reports; analysis based upon the US plans (when specified) of S&P 500 companies; all data for fiscal year 2015; for illustrative purposes only. Please see additional disclosures at the end of this presentation.

Funding relief has contributed to relatively low contribution activity in recent years



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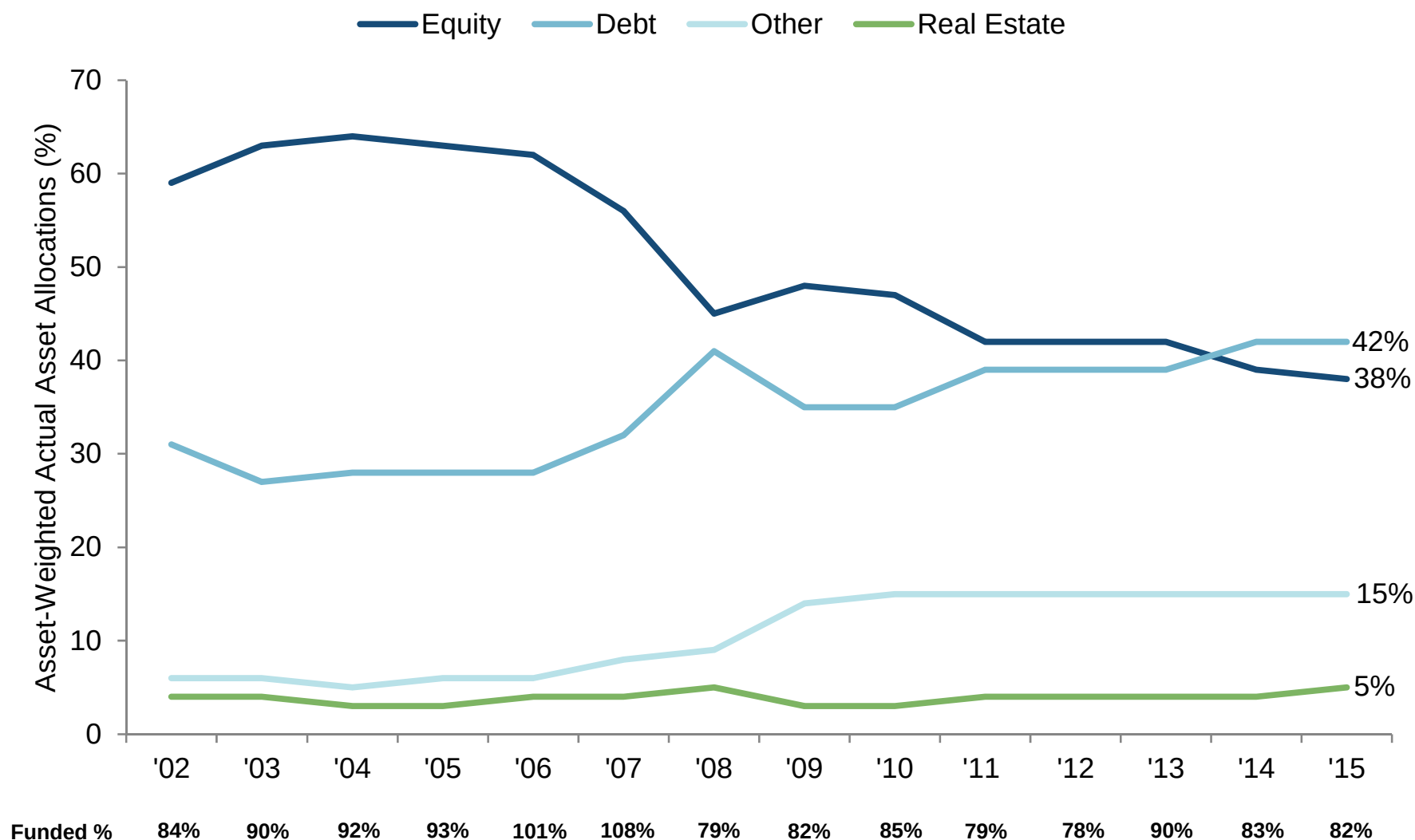


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Fixed income allocations exceed equities as plans continue to pursue de-risking actions



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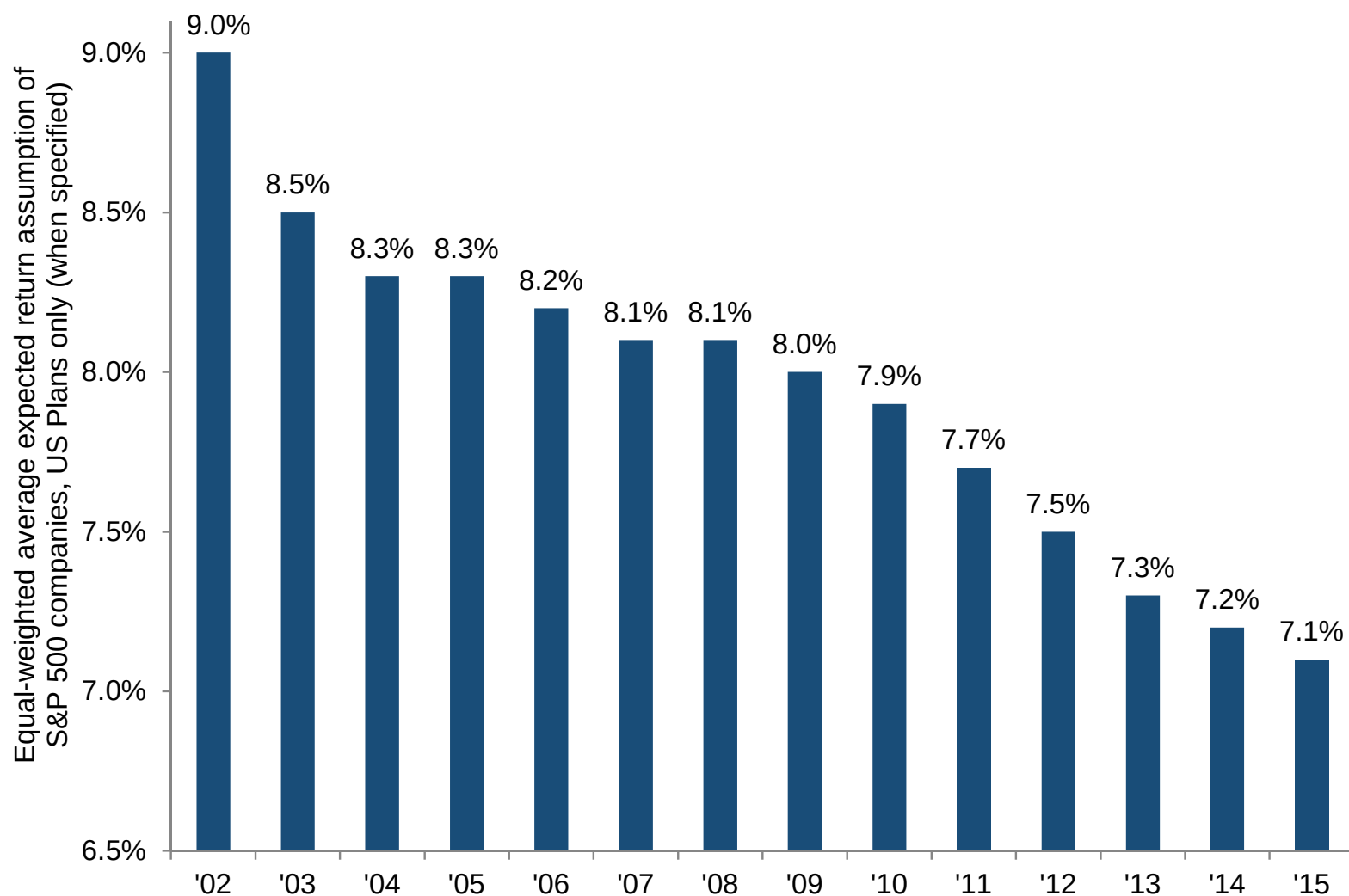


Source: Goldman Sachs Asset Management; company reports; analysis based upon the US plans (when specified) of S&P 500 companies.

Average US corporate DB pension plan expected return on assets assumption continues to decline

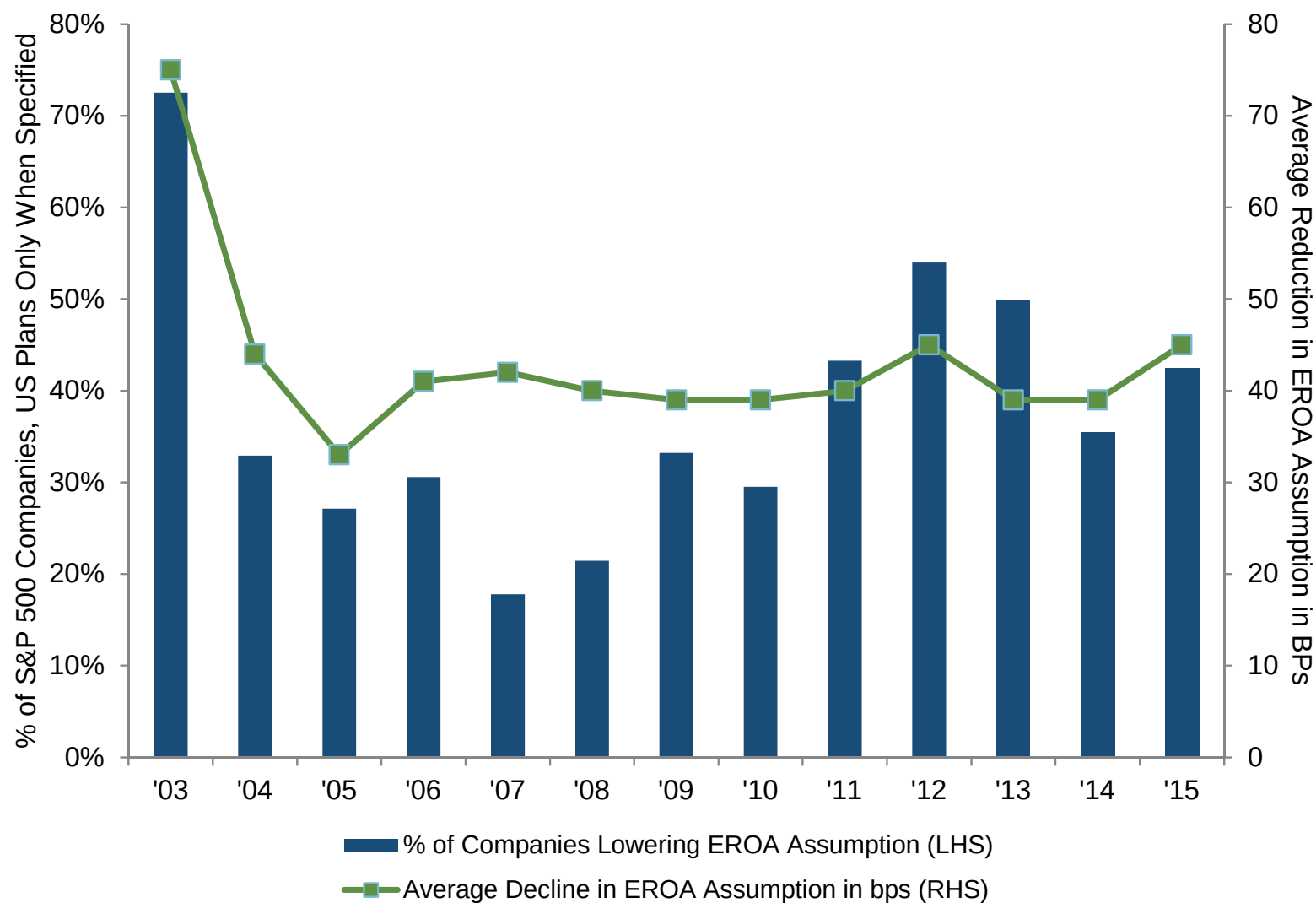


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Source: Goldman Sachs Asset Management; company reports; analysis based upon the US plans (when specified) of S&P 500 companies.

Every year from 2011 – 2015 has had more reductions than any year since 2003: no longer a barrier to de-risking?

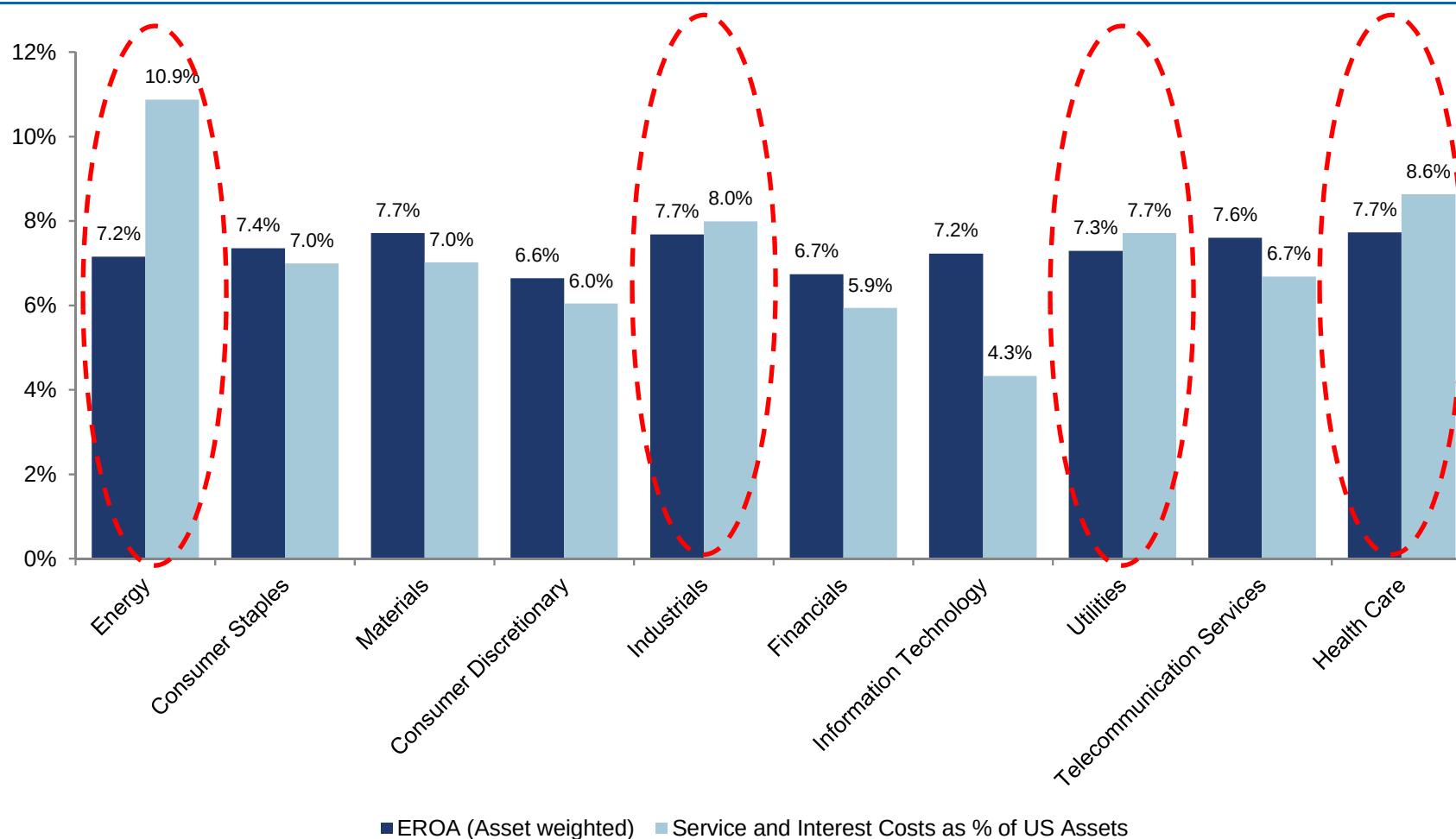


Source: Goldman Sachs Asset Management; company reports; analysis based upon the US plans (when specified) of S&P 500 companies.

In 2015, 4/10 sectors had service and interest costs which exceeded return assumptions



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Reductions to Expected Return on Assets (EROA) assumptions continuing in 2016



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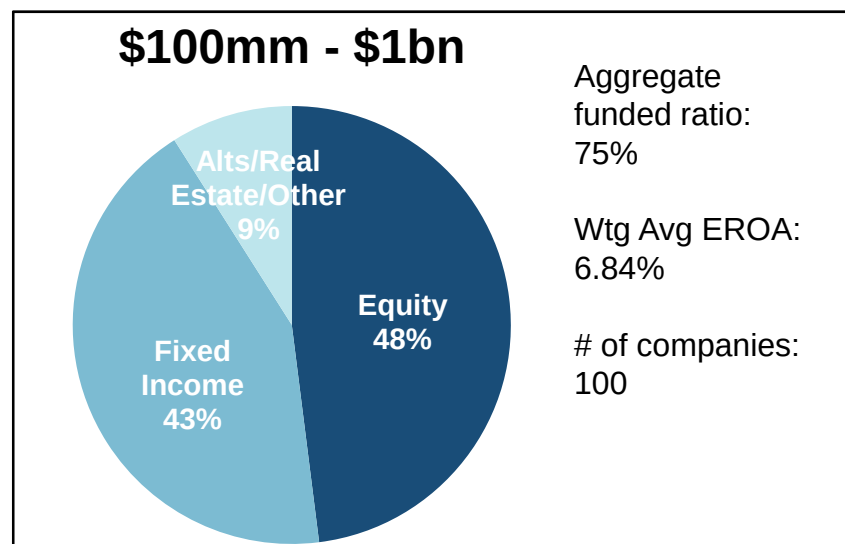
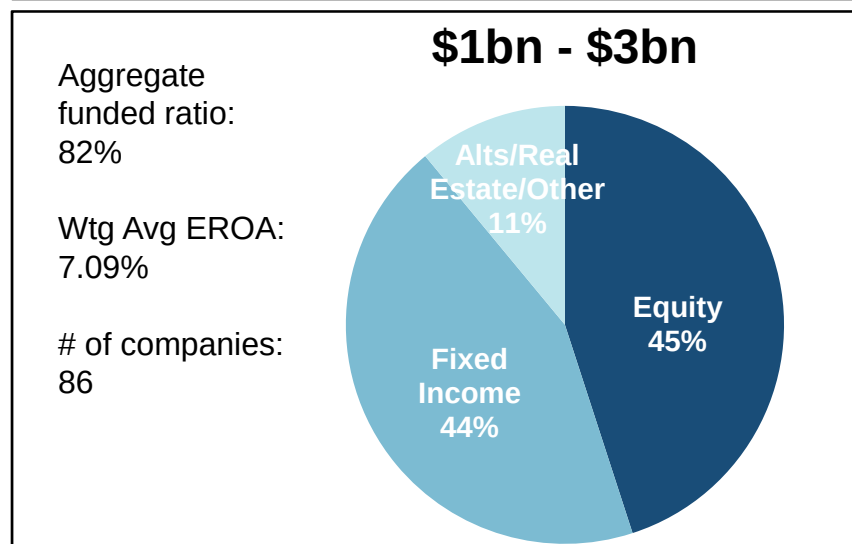
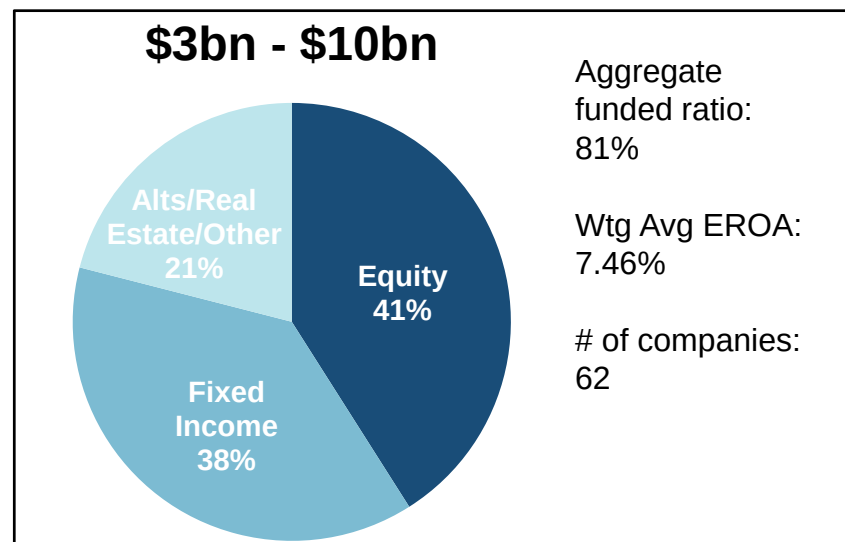
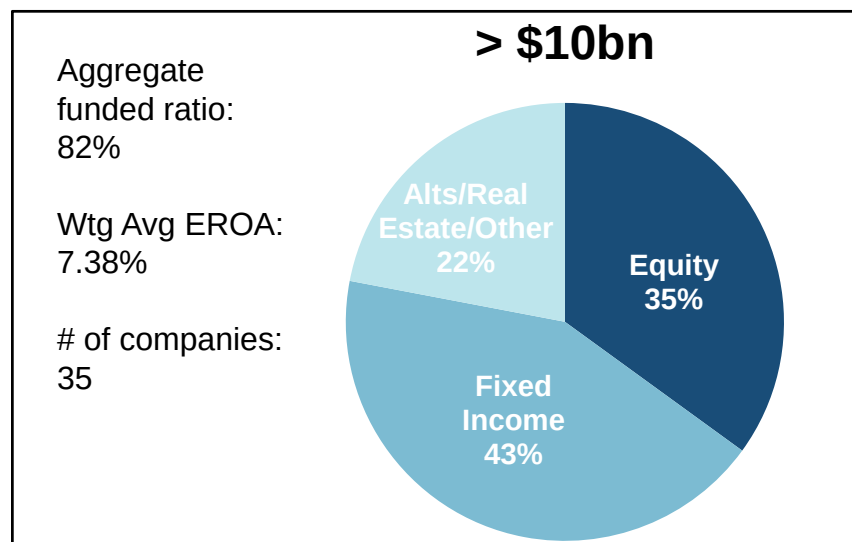
Sorted by Numerical Change Data for US plans only (when specified)			Month of Fiscal Year end	Expected Return on Plan Assets		Numerical Change	Directional Change	Plan Assets (\$ Millions)
Ticker	Company Name	Industry		2016	2015			
FDX	FedEx Corporation	Air Freight and Logistics	May	6.50%	7.75%	-1.25%	Lower	23,006
IBM	Intl. Business Machines Corp.	IT Consulting and Other Services	December	7.00%	7.50%	-0.50%	Lower	51,716
DD	E. I. du Pont de Nemours & Co.	Diversified Chemicals	December	8.00%	8.50%	-0.50%	Lower	17,497
CAT	Caterpillar Inc.	Const. Mach. & Heavy Trucks	December	6.90%	7.40%	-0.50%	Lower	11,440
KMB	Kimberly-Clark Corporation	Household Products	December	4.84%	5.21%	-0.37%	Lower	1,754
MMM	3M Company	Industrial Conglomerates	December	7.50%	7.75%	-0.25%	Lower	13,966
MET	MetLife, Inc.	Life and Health Insurance	December	6.00%	6.25%	-0.25%	Lower	8,490
FE	FirstEnergy Corp.	Electric Utilities	December	7.50%	7.75%	-0.25%	Lower	5,338
XEL	Xcel Energy Inc.	Electric Utilities	December	6.87%	7.09%	-0.22%	Lower	2,884
GM	General Motors Company	Automobile Manufacturers	December	6.30%	6.38%	-0.08%	Lower	61,072
BA	The Boeing Company	Aerospace and Defense	December	7.00%	7.00%	0.00%	Unchanged	56,514
T	AT&T, Inc.	Integrated Tele. Services	December	7.75%	7.75%	0.00%	Unchanged	50,909
GE	General Electric Company	Industrial Conglomerates	December	7.50%	7.50%	0.00%	Unchanged	45,720
F	Ford Motor Co.	Automobile Manufacturers	December	6.75%	6.75%	0.00%	Unchanged	41,252
LMT	Lockheed Martin Corporation	Aerospace and Defense	December	8.00%	8.00%	0.00%	Unchanged	32,096
NOC	Northrop Grumman Corp.	Aerospace and Defense	December	8.00%	8.00%	0.00%	Unchanged	23,950
RTN	Raytheon Company	Aerospace and Defense	December	8.00%	8.00%	0.00%	Unchanged	18,063
HON	Honeywell International Inc.	Aerospace and Defense	December	7.75%	7.75%	0.00%	Unchanged	16,349
EXC	Exelon Corporation	Electric Utilities	December	7.00%	7.00%	0.00%	Unchanged	14,347
JPM	JPMorgan Chase & Co.	Diversified Banks	December	6.50%	6.50%	0.00%	Unchanged	14,125
C	Citigroup Inc.	Diversified Banks	December	7.00%	7.00%	0.00%	Unchanged	12,137
PRU	Prudential Financial, Inc.	Life and Health Insurance	December	6.25%	6.25%	0.00%	Unchanged	11,914
PEP	Pepsico, Inc.	Soft Drinks	December	7.50%	7.50%	0.00%	Unchanged	11,397
DE	Deere & Company	Agricultural and Farm Machinery	October	7.30%	7.30%	0.00%	Unchanged	11,164
IP	International Paper Company	Paper Products	December	7.75%	7.75%	0.00%	Unchanged	10,923
AA	Alcoa Inc.	Aluminum	December	7.75%	7.75%	0.00%	Unchanged	8,077
D	Dominion Resources, Inc.	Multi-Utilities	December	8.75%	8.75%	0.00%	Unchanged	6,166
DOW	The Dow Chemical Company	Diversified Chemicals	December	7.87%	7.85%	0.02%	Higher	13,517

Source: Goldman Sachs Asset Management; company reports; as of May 2016; analysis represents companies where we observed a public disclosure of the EROA assumption to be used in fiscal 2016 for its US DB plans. Any reference to a specific company or security does not constitute a recommendation to buy, sell, hold or directly invest in the company or its securities.

Larger plans tend to be better funded, utilize a more diversified asset allocation and anticipate higher expected return on assets



Asset Management



Source: Goldman Sachs Asset Management; company reports; all data for fiscal year 2015 population: S&P 500 (US plans only when specified); pie charts designated by plan asset size.

Reviewing potential tools in the pension risk management toolbox:

Asset Management Liability Management Corporate Finance



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Potential Tool	Description	Potential applicability may include, e.g.
ASSET ALLOCATION		
<i>Implement Glide Path</i>	Adjust asset allocation as funded status changes.	Plans that want to adjust asset allocation dynamically and seek to ensure that improvements to funded levels are locked in through better asset/liability management.
<i>Extend Duration of Fixed Income</i>	Shift current fixed allocations away from Barclays Agg-type exposure to longer-term benchmarks like Barclays Long Gov/Credit.	May be a first step in a de-risking program. May be helpful for plans that are notably underhedged interest rate risk.
<i>Increase Allocation to Fixed Income</i>	Reduce allocations to equities and other return seeking assets in favor of liability hedging fixed income.	After extending duration of existing allocations, plans may seek to increase the actual allocation to physical long-duration bonds.
<i>Diversify Away from Equity Beta</i>	Reduce allocations to equities in favor of alternative asset classes as well as other means of sourcing growth.	Underfunded and/or open plans that still need returns but which would like to reduce drawdown risk.
<i>Annuity Buy-In</i>	Buying an annuity held within plan.	May be a first step for plans, including those who ultimately transfer some obligations to an insurance company through the purchase of a group annuity contract.
<i>Super Majority Bond Allocation</i>	Employ an asset allocation consisting almost entirely of fixed income.	May have the effect of linking performance of the company's stock to its own operations (not the equity values of other companies).
<i>Rebalancing</i>	Risk management exercise designed to keep actual portfolio weights in line with strategic targets.	A typical practice for institutional investors.

Source: Goldman Sachs Asset Management; as of April 2016.

Reviewing potential tools in the pension risk management toolbox:

Asset Management Liability Management Corporate Finance



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<u>Potential Tool</u>	<u>Description</u>	<u>Potential applicability may include, e.g.</u>
<u>HEDGING POLICIES</u>		
<i>Overlay & Leverage</i>	Interest rate swaps and other forms of leverage to extend duration and increase the plan's hedge ratio.	Plans that want to hedge interest rate risk but also want to preserve return seeking assets.
<i>Custom Liability Benchmark</i>	Shift fixed income benchmark from publicly available benchmarks to one based on the plan's liability cash flows.	As funded status and the allocation to fixed income rises, shifting to such a benchmark can potentially increase the efficacy of the LDI program.
<i>Completion Manager</i>	Engage a fixed income manager to complete differences between all long duration manager positions and the custom liability benchmark.	Can potentially increase liability hedging efficacy and LDI accountability.
<i>Longevity Swap</i>	Transfer the risk of participants living longer than expected to a third party.	Plans concerned about potential adverse actuarial experience.
<i>Long Corporate, Duration Hedged</i>	Buy long corporate bonds and hedge the interest rate risk using overlays.	Plans waiting for higher interest rates levels to hedge the interest rate risk but may want to purchase corporate bonds before potential scarcity value increases, or find level of credit spreads attractive.
<u>FIDUCIARY MANAGEMENT</u>		
<i>Strategic Partnership</i>	Engage an external manager to advise the plan and execute the investment management strategy, including helping with many of the tools noted elsewhere such as liability hedging and preparing for risk transfer.	Sponsors that may be resource constrained and who are looking for a strategic partner to help them through the various stages of their plan's life cycle.

Reviewing potential tools in the pension risk management toolbox:

Asset Management **Liability Management** Corporate Finance



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Potential Tool	Description	Potential applicability may include, e.g.
PLAN DESIGN		
<i>Close/Freeze Plan</i>	New hires do not enter the DB plan and/or new accruals cease for employees (new or existing).	Plans that wish to slow the growth of the gross pension obligation.
<i>Switch to Cash Balance Formula</i>	Change benefit accrual formula from one based on final pay to one where accruals are based on crediting and interest rates and the value to the participant is expressed as a notional account balance.	Sponsors that want to maintain a DB plan but may view a cash balance formula as being less volatile and portable for the participant.
RISK TRANSFER		
<i>Lump sum window for terminated vested (TV) participants</i>	Offer TV participants a one-time option to replace their lifetime pension annuity with a payment representing the present value of future pension payments.	Sponsors looking to reduce PBGC flat rate premiums as well as those looking to reduce the gross size of the pension liability. May be most applicable for plans with a large number of TV participants with small balances.
<i>Annuitization of Retired Participants</i>	Purchase a group annuity contract for retired participants to transfer the risk to a third party insurance company.	Sponsors looking to reduce PBGC flat rate premiums as well as those looking to reduce the gross size of the pension liability. May be most applicable for plans with a high percentage of obligations residing in the retiree cohort.

Reviewing potential tools in the pension risk management toolbox:

Asset Management Liability Management **Corporate Finance**



Asset
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<u>Potential Tool</u>	<u>Description</u>	<u>Potential applicability may include, e.g.</u>
<u>CONTRIBUTION STRATEGIES</u>		
<i>Revisit Existing Policy</i>	Consideration of a policy that is focused on reducing PBGC variable rate premiums.	Plans looking to minimize costs by linking contribution policy to PBGC premiums.
<i>Borrow to Fund</i>	Issue debt, contribute proceeds and allocate the contribution to long duration fixed income to increase the hedge given the higher funded status.	Strategy that takes into account low interest rates while at the same time increasing funded levels to reduce PBGC variable rate premiums.
<i>In-kind Contribution</i>	Contribute in-kind to plan subject to regulatory constraints.	Increase funded levels to, among other things, reduce PBGC variable rate premiums.
<u>FINANCIAL REPORTING</u>		
<i>Mark to Market Accounting</i>	Adjust reporting whereby gains and losses on plan assets and liabilities are recognized in full in the year when they are generated.	Sponsors who would like to simplify the accounting, potentially make its reporting more comparable to peers, and align financial reporting with de-risking strategies. In the current environment, it also may reduce or eliminate ongoing amortization expenses.
<i>Pro Forma Accounting</i>	Rather than adjust actual GAAP accounting, back out certain pension-related expenses from GAAP earnings to derive an adjusted EPS figure.	Similar to companies that want to simplify the reporting but without changing actual GAAP accounting policies.
<i>Spot Rate Method for Discount Rate</i>	A more granular approach to calculating the discount rate used to value service and interest cost.	No change to plan economics, but generally may lower recognized GAAP pension expense.

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