

## INDUSTRY RESEARCH

# 2021 Report on Corporate Pensions: Funding Levels and Asset Allocations

## Financial Overview

This is Wilshire's 2021 Report on Corporate Pensions: Funding Levels and Asset Allocation, which reports the aggregate funded status of 258 defined benefit plans sponsored by S&P 500 Index companies. Wilshire's practice is to collect data on U.S. pensions from 10-K filings for companies in the S&P 500 Index at fiscal year-end (FY). All data for fiscal year 2020 is based on S&P 500 Index constituents as of year-end 2020 and, therefore, may differ slightly from the list of companies represented in earlier years. Wilshire has been compiling these statistics since 1990.

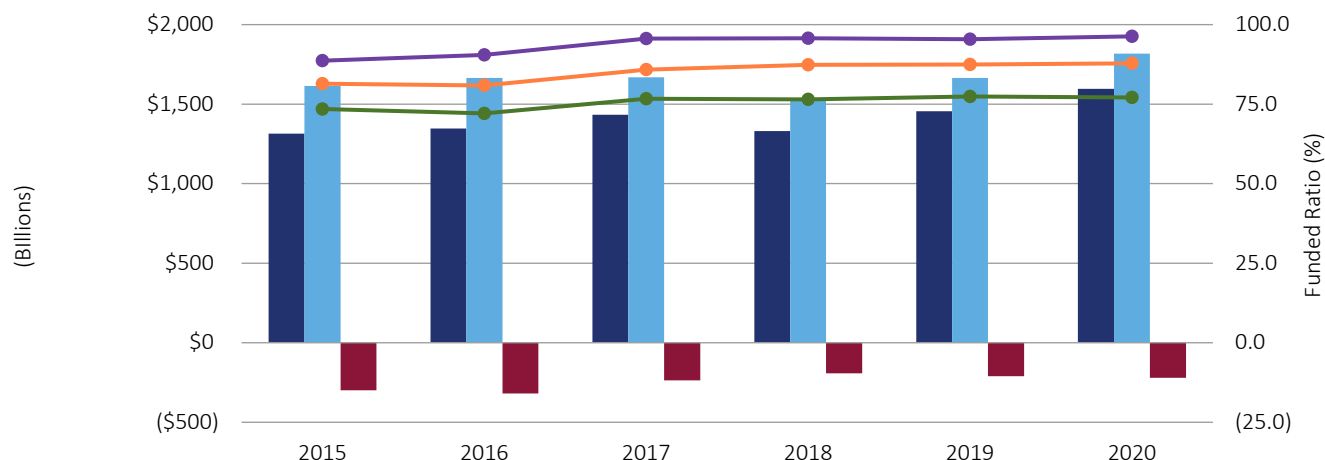
## Funded Ratio

The financial health of corporate pension plans, as indicated by the aggregate funding ratio of S&P 500 company pensions, slightly increased in fiscal 2020, according to our latest survey of 258 companies in the S&P 500 Index that maintain defined benefit plans.

*Wilshire estimates that the aggregate funded ratio was 87.8% at FY 2020, which represents a 0.4% increase from FY 2019 ending a streak of two consecutive years of no aggregate funded ratio increases.*

Exhibit 1 shows the change in aggregate assets, liabilities, and surplus (assets minus liabilities) for the surveyed companies from 2015 to the most recent 2020 fiscal reporting year.

**Exhibit 1: Funded Ratio History**



	2015	2016	2017	2018	2019	2020
Assets	1,313.9	1,346.1	1,433.1	1,330.6	1,455.1	1,596.6
Liability	1,613.6	1,664.4	1,669.6	1,523.2	1,664.6	1,817.8
Deficit	(299.7)	(318.3)	(236.5)	(192.6)	(209.5)	(221.2)
25th Percentile	73.4	72.1	76.7	76.5	77.4	77.1
Aggregate	81.4	80.9	85.8	87.4	87.4	87.8
75th Percentile	88.7	90.5	95.6	95.8	95.4	96.3

Despite the \$11.7 billion increase in aggregate pension deficit, represented by the difference between the market value of assets and liabilities, which grew to \$221.2 billion at the end of 2020, the aggregate funding ratio, equal to assets divided by liabilities, improved by 0.4 percentage-points year-over-year from 87.4%.

## Attribution of Changes in Funding

Exhibit 2 shows the components of aggregate annual change in Projected Benefit Obligations (PBO) and Market Value of Assets.

**Exhibit 2: Changes in Asset and Liability Values**

	(\$, Billions)	% of BoY
<b>Projected Benefit Obligation, BoY</b>	\$1,664.6	
Service Cost	23.3	1.40%
Interest Cost	49.6	2.98%
Benefit Payments	(96.7)	(5.81%)
Actuarial (Gains)/Losses	163.6	9.83%
Other	<u>13.4</u>	<u>0.80%</u>
<b>Projected Benefit Obligation, EoY</b>	\$1,817.8	9.21%
<b>Market Value of Assets, BoY</b>	\$1,455.1	
Total Contributions	33.4	2.30%
Actual Return on Assets	200.4	13.77%
Benefit Payments	(96.7)	(6.64%)
Other	<u>4.4</u>	<u>0.29%</u>
<b>Market Value of Assets, EoY</b>	\$1,596.6	9.72%

## Liabilities

Wilshire estimates that aggregate liabilities increased to a record high of \$1.818 trillion as of fiscal year end 2020, an increase of 9.21% from \$1.665 trillion as of fiscal year end 2019. Actuarial losses drove liability values nearly 10% higher year-over-year primarily due to the significant decrease in discount rates.

There are three recurring items that affect the growth in liabilities.

- Service cost.**
  - This cost arises from employees earning additional benefits from an additional year of service. Service cost, which changes little from year to year, added \$23.3 billion, or 1.40%, to aggregate pension liabilities in 2020.
- Interest cost.**
  - Liabilities are valued by discounting expected future benefit payments. As each year passes, liabilities increase by the annualized interest cost as there is one less year to discount each payment. This cost item remains predictable from year to year.

### 3. **Benefit payments** to participants.

- Liabilities are reduced by benefits paid during the year.

If these recurring items were the only changes, then corporate pension liabilities would have decreased by \$23.8 billion, or 1.42%. Instead, liabilities increased by \$153.2 billion, or 9.21%, in 2020.

Another item that affects liability values in Exhibit 2 is “**Actuarial (Gains)/Losses**” which refers to changes in liabilities, either negative or positive, that arise when actual experience differs from actuarial assumptions. The most significant actuarial losses (gains) occur due to changes in discount rates. In general, when discount rates fall, the present value of liabilities rise (and vice versa when discount rates rise).

*Discount rates as of fiscal year end 2020 decreased by 80 basis points year-over-year (from a median of 3.40% in 2019 to a median of 2.60% in 2020 – see exhibit 5) for the pensions in our survey, which is the primary reason for the aggregate actuarial loss of \$163.6 billion.*

The final change is the “**Other**” category. The “other” category refers to changes in liabilities, either negative or positive, that arise from the addition or subtraction of liabilities from plan changes, curtailments, or corporate acquisition activity. Large dollar figures in the “other” category are often the result of corporate mergers and acquisitions, in which the resultant company absorbs the pension liability of the components or the transferring of pension liabilities to a third party such as an insurance company; one also finds liability changes due to pension plan amendments and settlements folded into “other.” When that happens, there also is a corresponding entry into the “other” category under Assets.

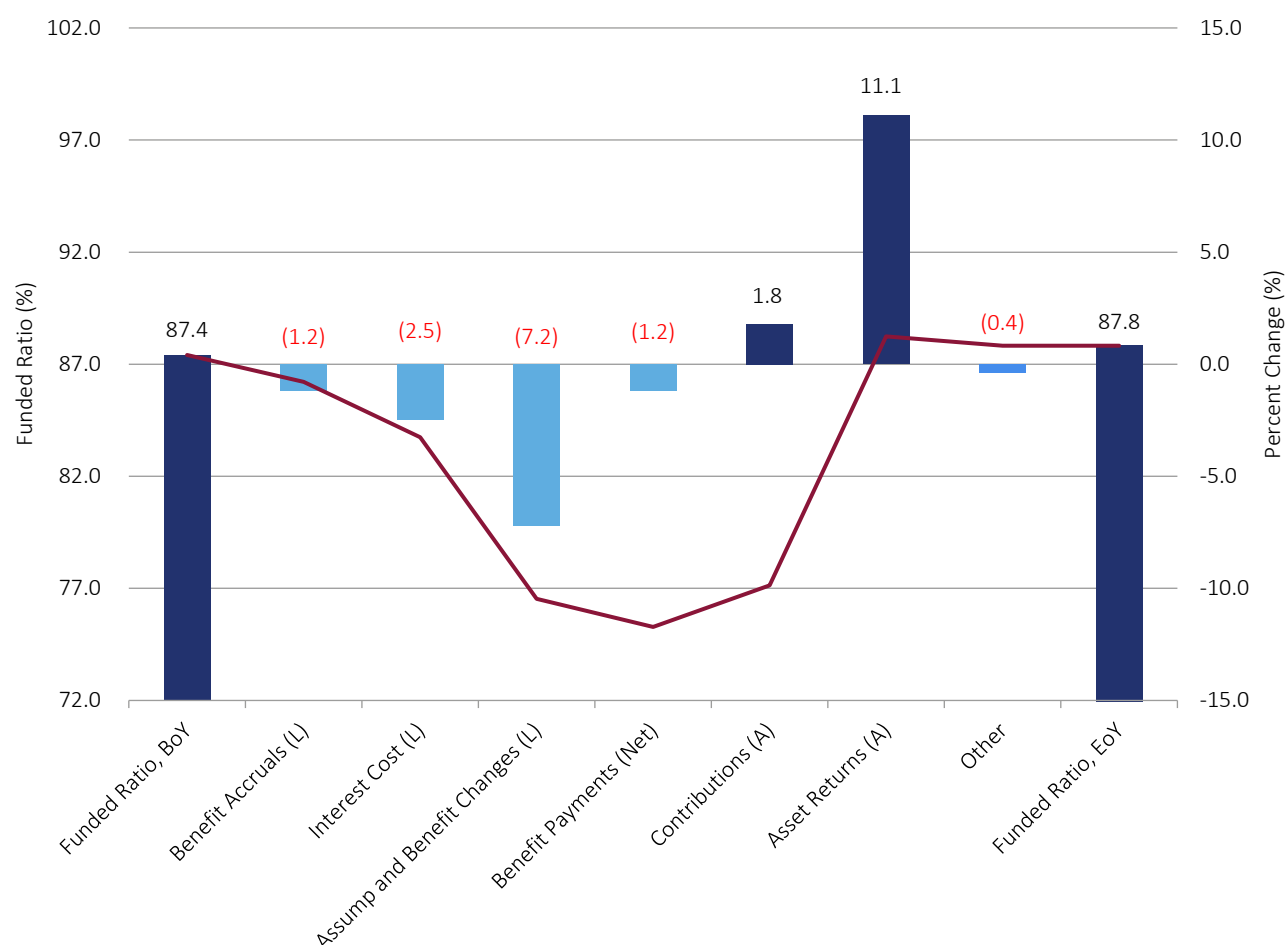
## Assets

Wilshire estimates that aggregate assets increased to a record high of \$1.597 trillion as of fiscal year end 2020, an increase of 9.72% from \$1.455 trillion as of fiscal year end 2019. The second consecutive year of double digit positive aggregate returns on investment and plan contributions drove asset values higher for the year.

- Contributions increased the asset value by 2.30% for the year, almost all of which contributed by plan sponsors.
- Investment returns increased the asset value by 13.77% for the year.
- Benefit payments are estimated to have decreased the asset value by 6.64%.
- “Other” items are expected to have decreased the asset value by 0.29%.

Exhibit 3 shows the components of aggregate change in liabilities and assets from Exhibit 2 and their relative impact on funded status change during the fiscal year.

**Exhibit 3: Changes in Annual Funded Ratio**



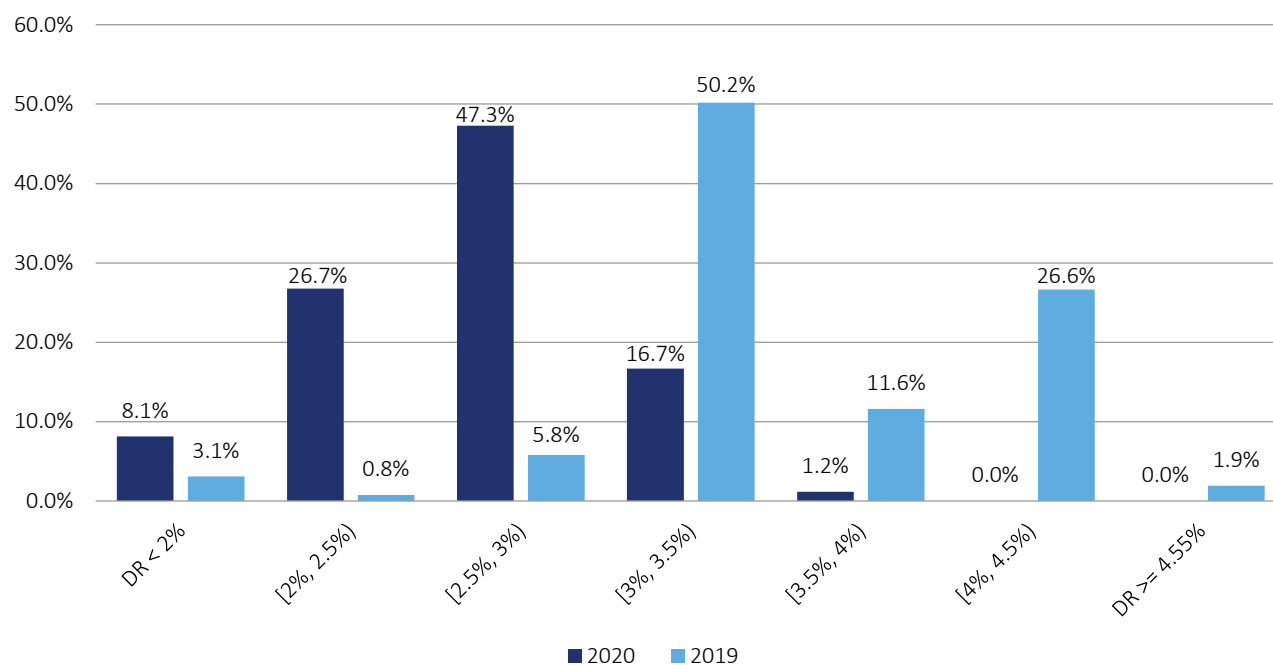
Benefit accruals, interest cost, actuarial assumptions changes and benefit payments decreased the funded ratio by more than twelve percentage points which was more than offset by total contributions and asset returns.

## Discount Rates

The discount rate used to calculate the liability value (present value of a stream of projected benefit payments) is determined using a high quality corporate bond yield curve. For corporate pension plans, this is generally understood to mean bonds that are rated as AA- or above. Yields on such bonds have trended lower over the past several years including this year's study as the median discount rate decreased by 80 basis points to an all-time low of 2.60% from 3.40% at the end of 2019.

Exhibit 4 shows the distribution of discount rates used to calculate the liability value over the past two years.

**Exhibit 4: Distribution of Discount Rates\***



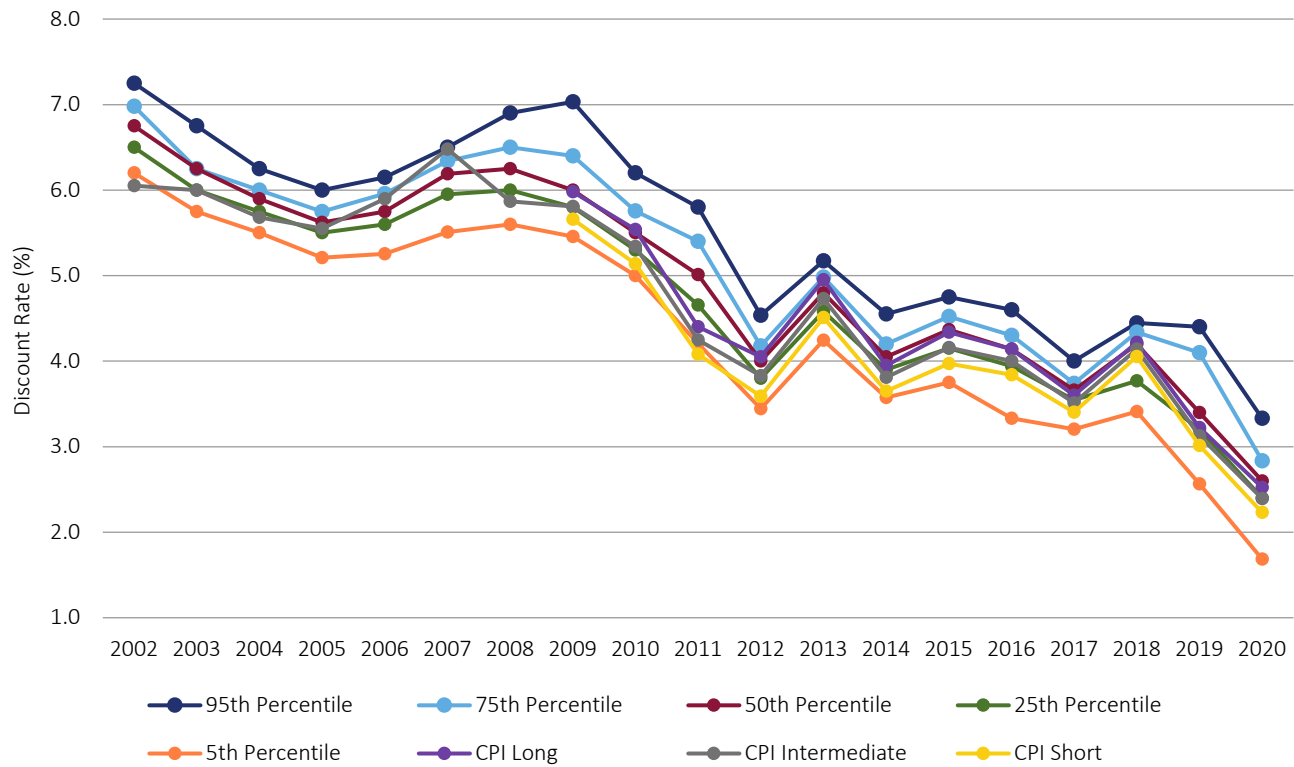
\* The total may not sum to 100% due to rounding.

The FTSE Pension Liability Index (FPLI)<sup>1</sup> provides reasonable estimates for corporate defined benefit pension plan effective discount rates. As interest rates fall, companies are forced to lower their discount rates, thereby increasing the accounting value of total pension liabilities.

Exhibit 5 plots these year-end corporate bond yields alongside the historical distribution of discount rates.

<sup>1</sup>Formerly the Citigroup Pension Liability Index

Exhibit 5: Discount Rates by Percentile



(%)	2000	2005	2010	2015	2016	2017	2018	2019	2020
95th Percentile	8.00	6.00	6.20	4.75	4.60	4.00	4.45	4.40	3.33
75th Percentile	7.75	5.75	5.76	4.52	4.30	3.74	4.34	4.10	2.84
Median	7.50	5.62	5.50	4.37	4.14	3.66	4.20	3.40	2.60
25th Percentile	7.25	5.50	5.30	4.15	3.94	3.55	3.77	3.20	2.40
5th Percentile	6.87	5.21	5.00	3.75	3.33	3.20	3.41	2.56	1.69

# The Impact of Net Periodic Pension Cost (NPPC) On Corporate Earnings

Exhibit 6 provides an aggregate accounting of pension expense (income) for calendar year 2020 for the 258 S&P 500 Index companies in our study.

## Exhibit 6: Pension Expense / Income

	(\$, Billions)
Service Cost	\$23.3
Interest Cost	49.6
Expected Return on Plan Assets	(86.4)
Amortizations	33.6
Other	<u>6.1</u>
Pension Expense (Income)	\$26.2

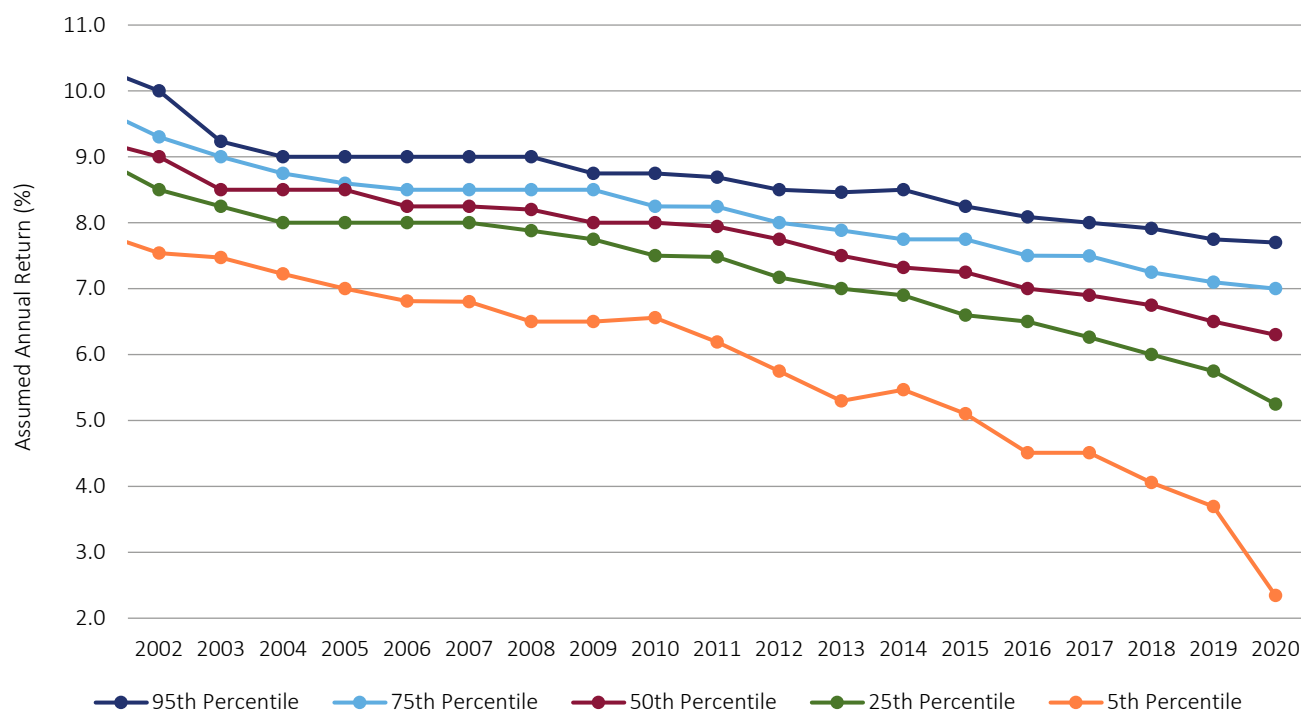
There are four recurring items that comprise pension expense (income). The first two are **Service Costs** and **Interest Costs**, which were described in Exhibit 2.

There is some controversy surrounding the third item, the **Expected Return on Plan Assets**.

- Market Value accounting might suggest that service costs and interest costs would be offset by the actual return on assets in calculating pension expense (income). This would be consistent pension accounting under International Financial Reporting Standards (IFRS). Instead, pension expense is \$26.2 billion in 2020 because of the method by which the asset return is reflected (using expected return on assets rather than actual return). The expected return on plan assets is calculated using a “Market Related Value of Assets” (MRVA) and an expected rate of return on assets. The MRVA allows plan sponsors the ability to amortize (or “smooth”) asset gains and losses over a period of up to five years. This helps to reduce the short-term volatility of asset returns on corporate net income.

Exhibit 7 plots the historical distribution of **Expected Return on Assets** (EROA). The EROA impacts net periodic pension cost.

**Exhibit 7: Expected Return on Assets by Percentile**



(%)	2000	2005	2010	2015	2016	2017	2018	2019	2020
95th Percentile	10.50	9.00	8.75	8.25	8.09	8.00	7.91	7.75	7.70
75th Percentile	9.75	8.60	8.25	7.75	7.50	7.50	7.25	7.10	7.00
Median	9.50	8.50	8.00	7.25	7.00	6.90	6.75	6.50	6.30
25th Percentile	9.00	8.00	7.50	6.60	6.50	6.27	6.00	5.75	5.25
5th Percentile	8.00	7.00	6.56	5.10	4.51	4.51	4.06	3.70	2.34

- The expected rate of return for pension assets has been declining in recent years. The median expected return was 9.50% at the end of 2000 and has fallen to 6.30% at the end of 2020. The expected return assumption is multiplied by the MRVA to arrive at a dollar value for the expected investment earnings that is credited against service and interest costs. In 2020, companies collectively expected their assets to earn \$86.4 billion (compared to the estimated return of \$200.4 billion), and it was this number that was used in the calculation of pension expense and corporate net income.

The fourth item, **Amortizations**, primarily represents the difference between actual and expected asset and liability growth recognized over several years, but it also includes prior service cost amortizations, settlements and curtailments.

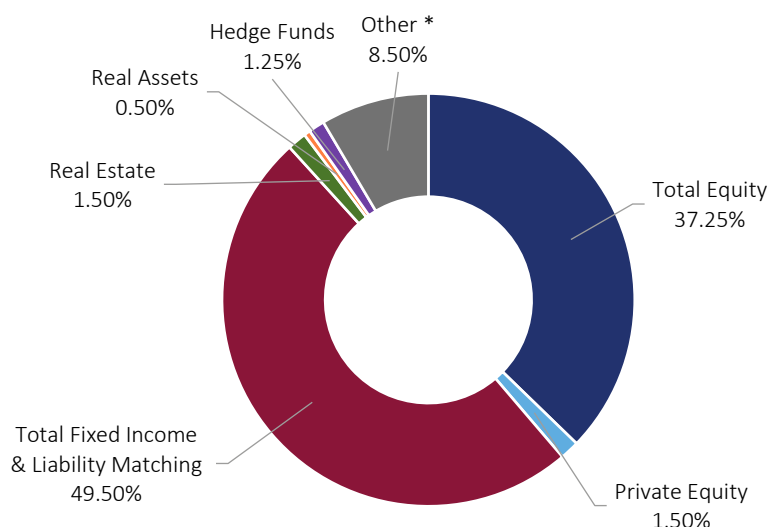
Accounting Standards Update (ASU) 2017-07, *Improving the Presentation of Net Periodic Pension Cost and Net Periodic Postretirement Benefit Cost*, issued by the Financial Accounting Standards Board (FASB) in March 2017 disaggregated the components of NPPC into operating and non-operating costs. Previously, the entire NPPC was considered an operating cost. Now, only the Service Cost component is considered an operating cost and the remaining components are considered non-operating costs.



# Pension Plan Asset Allocation

Exhibit 8 shows the reported aggregate asset allocation for the 258 S&P 500 Index companies in our study.

**Exhibit 8: Aggregate Asset Allocation**



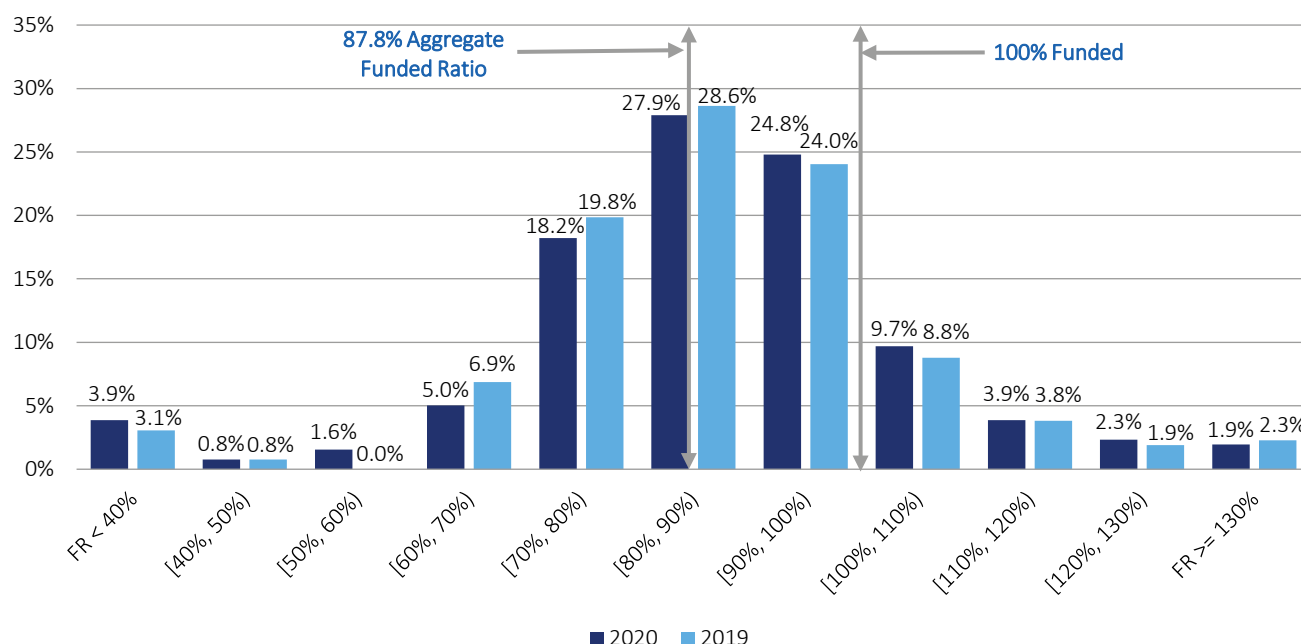
\*Other refers to any other asset class for example Commodities and Cash.

Year-over-year, there were minimal changes to the aggregate asset allocation. However, over the past ten years, the total allocation to equity has declined by more than fifteen percentage points, whereas the total allocation to fixed income has increased by close to fifteen percentage points.

We conclude the report with Exhibit 9, which shows the distribution of funded ratios over the past two years.

Similar to the aggregate funded ratio, the distribution of funded ratios year-over-year did not change materially

Exhibit 9: Distribution of Funded Ratios\*



Year-over-year, the number of plans that reported pension assets that equal or exceed assets increased by 2 to 46, or 17.8% of the plans, as of fiscal year-end 2020 compared to 44, or 16.8%, at fiscal year-end 2019.

Fiscal year-end 2007, five years into a recovery from the 2000-2002 bear market (and one year prior to the global recession of 2008 and early 2009), marked a high point in the percentage of plans that reported a fully-funded or surplus status at 42%.

## Appendix A: Corporate Pension Plan Funding Rules Overview

The Pension Protection Act of 2006 (PPA) radically changed the funding methodologies for cash requirements; it was first effective for the 2008 plan year. There have been incremental changes to these rules since 2008. A material change in 2012 was part of the Moving Ahead for Progress in the 21st Century (MAP-21) law. MAP-21 delayed recognition of the current low interest rate environment by introducing a 25-year smoothing of interest rates. MAP-21 was designed to have the largest impact for 2012 plan years with the impact shrinking over a few subsequent years. Further funding relief was passed in 2014 as a part of the Highway and Transportation Funding Act of 2014 (HATFA-2014). HATFA-2014 extended the pension plan funding stabilization provisions included in MAP-21 for an additional five years. Additional funding relief was passed in 2015 as a part of the Bipartisan Budget Act of 2015 (BBA). BBA extended the pension plan funding stabilization provisions included in HATFA-2014 for an additional three years. The most recent funding relief, the American Rescue Plan Act (ARPA 2021), was signed into law in 2021. ARPA-2021 increased the allowable discount rates used to calculate liability values and extended the shortfall amortization period from 7 to 15 years. These laws are effectively saying that rates are historically low and companies will be provided with funding relief for a several more years. If rates don't increase, the current period funding deficits will be paid for in the future.

One of the goals of the PPA was to fund shortfalls over a seven-year period. That generally requires faster funding than existed in previous laws.

One final complicating factor when comparing cash contributions to the cash flows reported for accounting purposes is that the minimum required cash contribution for a plan year may be paid as late as 8.5 months after the end of the plan year (fiscal year). Thus, cash contributions dramatically increased in 2009 to reflect the impact of PPA first effective in 2008. Cash contributions decreased in 2013, 2014 and 2015, partially reflecting the reduction in cash requirements afforded by MAP-21 and HATFA-2014 first effective for the 2012 and 2014 plan years, respectively.

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