

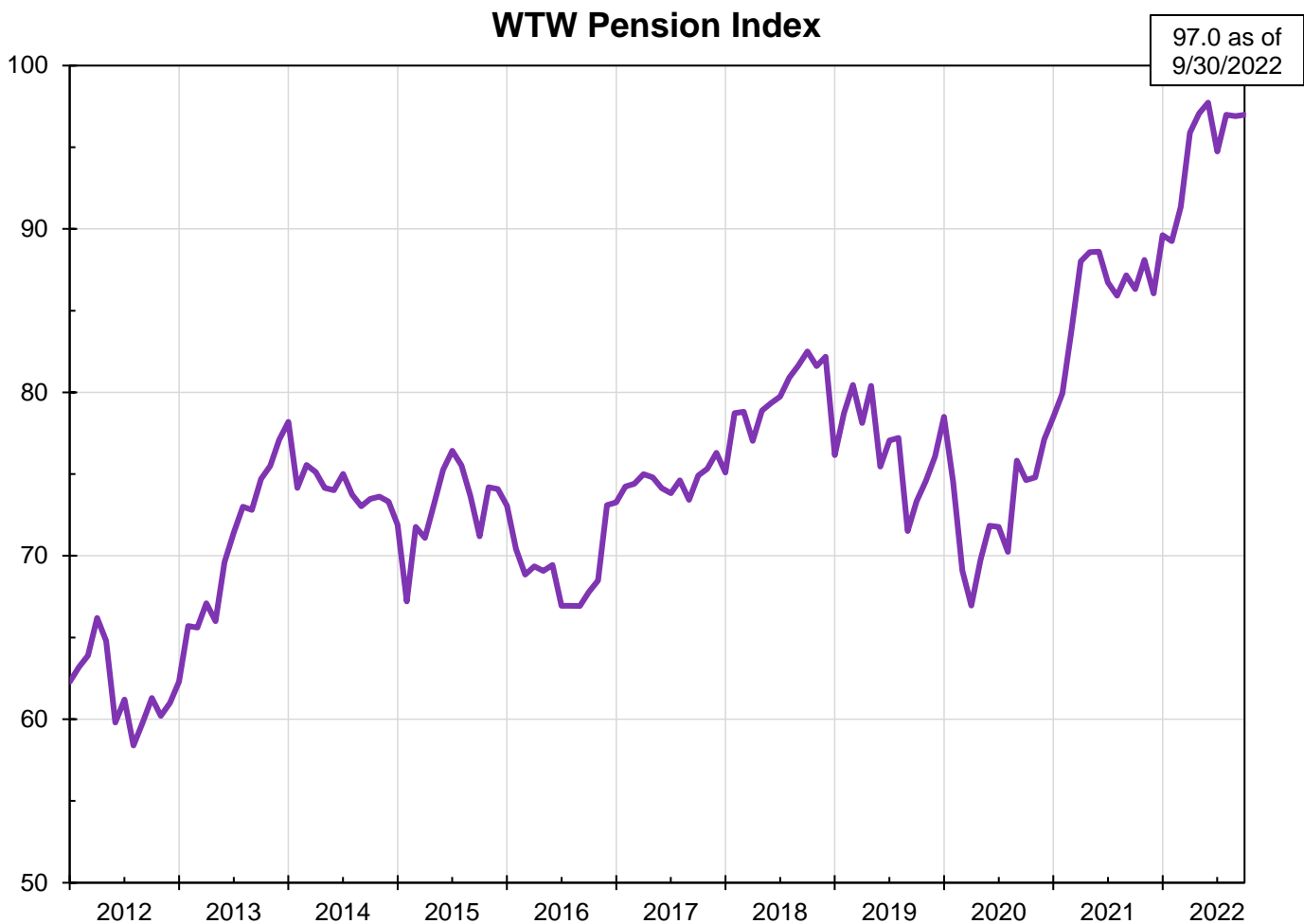


Pension Finance Watch

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Pension index increased in September

The WTW Pension Index increased slightly in September 2022, recovering the losses incurred last month and reverting back to July's level. This month's change was due to a decrease in liabilities, almost completely offset by negative investment returns. The end-of-September index level of 97.0 reflects an increase of 0.1% for the month.



About this report

Pension Finance Watch is designed to support our clients in the ongoing financial management of their U.S. retirement plans. The report tracks the value of the WTW Pension Index in a series that was initiated in 1990.

The index reflects the asset/liability performance of a hypothetical benchmark pension plan, and it provides an indicator of capital market effects on pension plan financing. Individual plan results will vary based on such factors as portfolio composition, investment management strategy, liability characteristics and contribution policy.

If you have questions or comments about this report, please contact Christopher Kludy, FSA, MAAA, EA, CFA at chris.kludy@wtwco.com

Investment returns

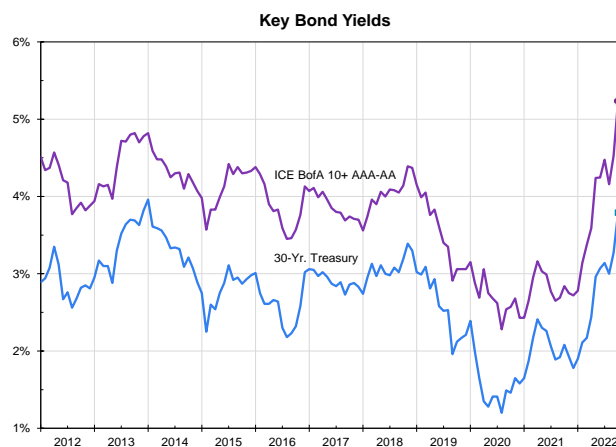
The equity portion of the benchmark portfolio returned -9.3% in September, with all equity asset classes incurring similar declines. The fixed income investments of the tracked benchmark portfolio also had a negative return at -3.8%, with Long Corporate Bonds experiencing the largest losses.

Asset Class Returns			
	Sept. 2022	YTD	Last 12 Months
Stock Returns			
S&P 500 (Large Cap)	-9.2%	-23.9%	-15.5%
Russell 2500 (U.S. Small/Mid-Cap)	-9.5%	-24.0%	-21.1%
EAFE (International)	-9.4%	-27.1%	-25.1%
Fixed Income Returns			
3-Month T-Bills	0.2%	0.6%	0.6%
Long Treasury Bonds	-7.9%	-28.8%	-26.6%
Bloomberg Barclays U.S. Aggregate	-4.3%	-14.6%	-14.6%
Long Corporate Bonds (AAA/AA)	-9.3%	-28.9%	-27.7%

Interest rates

Yields on long high-quality corporate bond indices increased an average of 68 basis points, with the ICE BofA 10+ AAA-AA hitting its highest level since June 2011. These were followed by increases in long Treasury rates. Yields on 10- and 30-year Treasury bonds increased 68 and 52 basis points, respectively. The broader Bloomberg Barclays Aggregate index increased 79 basis points this month.

Bond Yields			
	Sept 2022	Dec 2021	Sept 2021
U.S. Treasuries			
30-Year	3.79	1.90	2.08
10-Year	3.83	1.52	1.52
3-Month	3.33	0.06	0.04
Corporate Bonds			
ICE BofA 10+ AAA-AA	5.24	2.78	2.84
Moody's Aa	5.19	2.78	2.89
BB Aggregate	4.75	1.76	1.57





Effect on pension index

The WTW Pension Index tracks the performance of a hypothetical pension plan invested in a 60% equity/40% fixed income portfolio. This portfolio recorded a -7.1% return for the month. Several alternative portfolios are also monitored. Portfolios with 20% and 60% fixed income allocations produced -8.2% and -6.0% returns, respectively. A variation of the 60% fixed income portfolio that incorporates longer-duration fixed income investments generated a -8.4% monthly return.

Discount rates used by U.S. plan sponsors to measure pension obligations are typically measured with reference to yields on high quality corporate bonds. The index relies on WTW's proprietary RATE:Link model for this purpose.

Pension obligations move in the opposite direction of the interest rates used for their valuation. The liability implicit in the index decreased by 7.2% from the discount rate change and the accumulation of interest.

These factors contributed to an overall increase of 0.1% in the WTW Pension Index, which closes the month at 97.0.

Pension Index Results			
	Sept 2022	YTD	Last 12 Months
Benchmark Portfolio Returns			
20% Fixed Income	-8.2%	-22.1%	-16.8%
40% Fixed Income (benchmark)	-7.1%	-19.8%	-15.7%
60% Fixed Income	-6.0%	-17.4%	-14.7%
60% Fixed Income (long duration version)	-8.4%	-25.6%	-22.1%
Benchmark Plan Liability Results			
Discount Rate (at valuation date)*	5.53	3.03	3.06
Liability Growth Factor	-7.2%	-25.9%	-25.0%
Pension Index*	97.0	89.6	86.3
Percentage change	+0.1%	+8.2%	+12.4%

*Discount rates and pension index values in the three columns are as of 9/30/2022, 12/31/2021 and 9/30/2021, respectively.



Aggregate funded status for the WTW 300 Companies

The WTW Pension Index measures the impact of capital market results, primarily investment returns and Aa-grade corporate bond yields, on a representative but hypothetical pension plan. An actual pension plan's financial condition relies on several additional factors, including:

- The level of plan sponsor contributions
- The plan's asset allocation and actual return performance
- The discount rate used to value plan liabilities
- Other assumptions, including demographic and ancillary assumptions
- Plan amendments, settlement transactions, acquisitions/divestitures, currency adjustments
- Other experience gains and losses.

To capture these effects, we supplement the WTW Pension Index results with a report on the financial condition of the WTW 300. These statistics reflect assets and liabilities on an aggregated global basis.

Aggregated Pension Financial Results for the WTW 300 Companies

(\$ billions)	September 30, 2022 (estimated)	December 31, 2021*	December 31, 2020*
Pension Assets (Market Value)	\$1,547	\$2,082	\$2,077
Projected Benefit Obligations	1,623	2,176	2,366
Unfunded Liability (Surplus)	76	94	289
Aggregate Funded Ratio	95.3%	95.7%	87.8%

*Values as of December 31st have been estimated for companies with non-calendar year fiscal years.

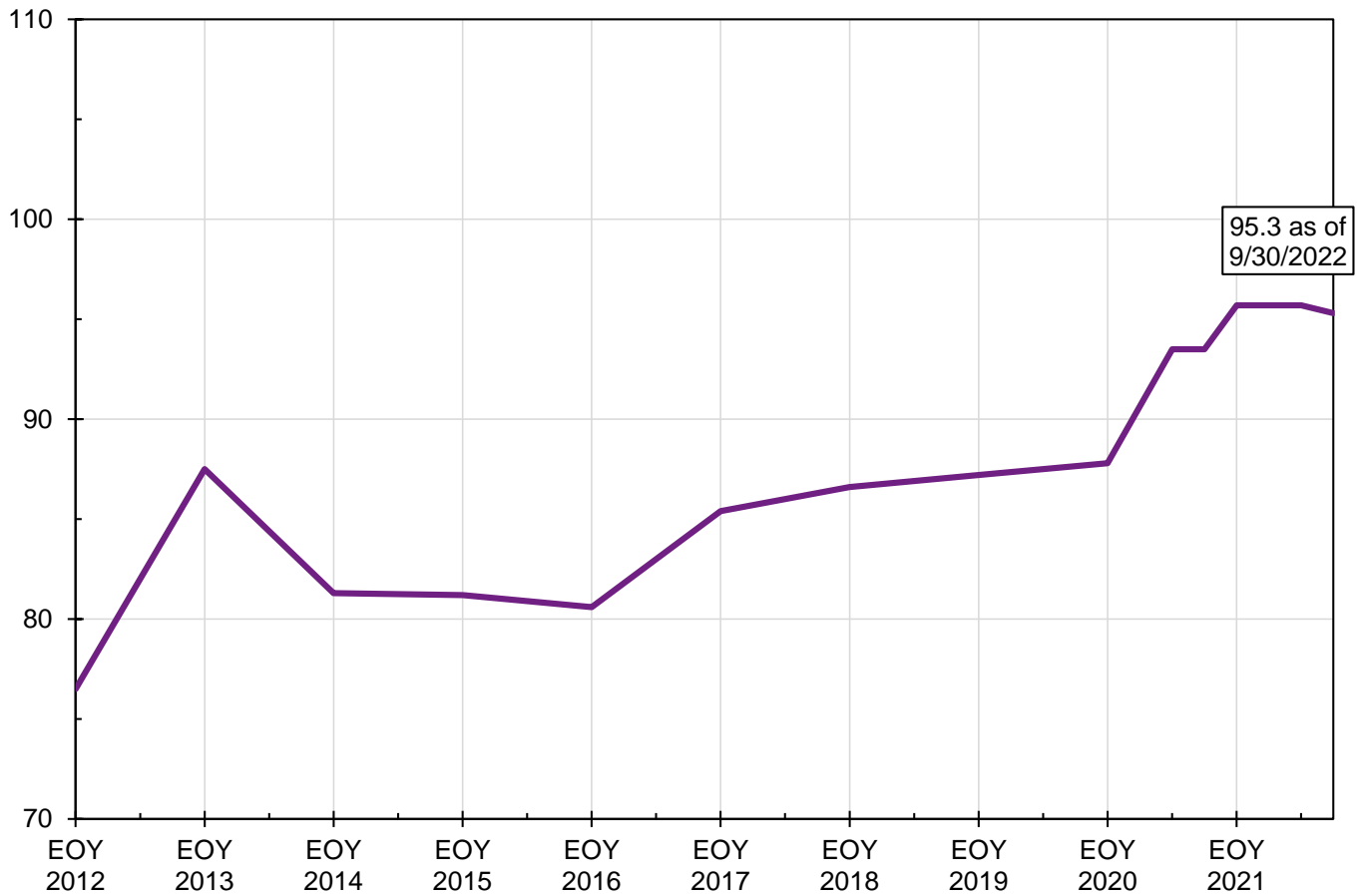
Significant elements of the year-to-date estimated funded status change include:

- Expected results, including plan sponsors contributions, expected asset returns, benefit accruals and benefit payments, which increased funded status by 1.8%
- An average 250 basis point increase in the discount rates used to determine benefit obligations, which decreased benefit obligations by 24.4%
- Estimated investment return below prior expectations, which decreased asset values by 26.1%
- The net impact of discount rate and asset experience decreased funded status by approximately 2.2%



The historical and estimated current funded ratios for the 300-company database are charted below. (Historical figures are based on annual report disclosures.)

Aggregate Funded Ratio for WTW 300 Companies



The 300 companies included in the WTW 300 represent a select group of U.S.-based companies with annual revenues in excess of \$4 billion and financial statements that indicate significant pension obligations. The universe is reconstituted each year. Figures shown for year-end 2020 and year-end 2021 include adjustments to December 31st using the methods described below for companies with non-calendar year fiscal years.

Fiscal year-end 2021 asset and liability amounts have been projected to September 30, 2022 based on the companies' disclosed contribution expectations, asset allocation data and other available data. Obligations are modelled based on outcomes from WTW's global suite of discount rate models and estimated sensitivities.



Definition of terms

Asset Class Returns

- Total return incorporates the combined effect of price changes and interest/dividend income; this may differ from index results which are based only on price changes.
- The Russell 2500 Index tracks companies ranked 501 to 3000 ordered by market value of equity; these are considered small and mid-capitalization stocks.
- EAFE refers to the Morgan Stanley Capital International Europe, Australasia, Far East Index of equity securities; total return is reported in U.S. dollars, which includes the effect of currency changes.
- 3-Month T-Bill returns are based on the FTSE 3-Month Treasury Bill Index.
- Long Treasury Bond returns are based on the Bloomberg Barclays Long Treasury Bond Index.
- Prior to April 2022, Long Corporate Bond returns were based on the FTSE High Grade Credit Index (as described below). As the FTSE Index has been decommissioned at the end of March 2022, starting on April 2022, returns are based on the ICE BofA 10+ AAA-AA Index (as described below).

Bond Yields

- Treasury yields are constant maturity yields reported by the Federal Reserve.
- ICE BofA 10+ AAA-AA Index includes issues with 10+ years to maturity and AA or AAA ratings from the ICE Bank of America U.S. Corporate Master Index.
- Bloomberg Barclays U.S. Aggregate Bond Index covers the broad range of investment grade bonds, including government and corporate securities (minimum grade Baa) and mortgages.
- Bond yields are stated as yields to maturity, on a bond-equivalent basis (reflecting semi-annual coupons).

Benchmark Portfolio Returns

- The benchmark portfolio reflects a diversified asset allocation of 60% equity (40% large cap, 10% small/mid-cap, 10% international) and 40% fixed income (35% BB Aggregate bonds, 5% T-bills). This generally aligns with the average portfolio for the 300 large companies included in WTW's benchmarking database.
- Alternative portfolios with 20% and 60% fixed income allocations are constructed with similar asset class ratios within their equity and fixed income segments.
- The 60% fixed income-long duration portfolio includes a similarly constructed equity segment along with a fixed income segment consisting of 27.5% long corporate bonds, 27.5% long Treasury bonds and 5% T-bills.

Benchmark Discount Rate

- The discount rate is determined for our benchmark plan each month using a yield curve developed based on high-quality corporate bonds (10th-90th percentiles). This calculation uses WTW's RATE:Link methodology to develop an appropriate discount rate based on the benchmark plan's projected cash flows. Higher or lower discount rates might be appropriate for other plans.

Liability Growth Factor

- The benchmark plan is based on a traditional final-pay based formula and covers a relatively mature population. Roughly one-half of the plan's obligations are related to inactive participants. The liability growth factor measures the change in the plan's projected benefit obligation due to the accumulation of interest and changes in financial assumptions *

WTW Pension Index

- The index is designed to capture the impact of capital market results, without influence from the costs of ongoing accruals or cash inflows/outflows related to contributions and benefit payments.
- The index reflects the PBO funded ratio (market value of assets/projected benefit obligation) for a benchmark pension plan. The asset value changes from month to month based on the investment performance of the 40% fixed income portfolio. Liability values are adjusted to reflect changes in financial assumptions.

* Discount rate and compensation increase assumptions are adjusted to reflect changes in market interest rates. The net sensitivity of the benchmark plan's benefit obligation to a percentage point change in interest rates is roughly 14%. These dynamics vary considerably among plans, depending on characteristics such as the benefit formula and on the demographic profile of the covered population.
