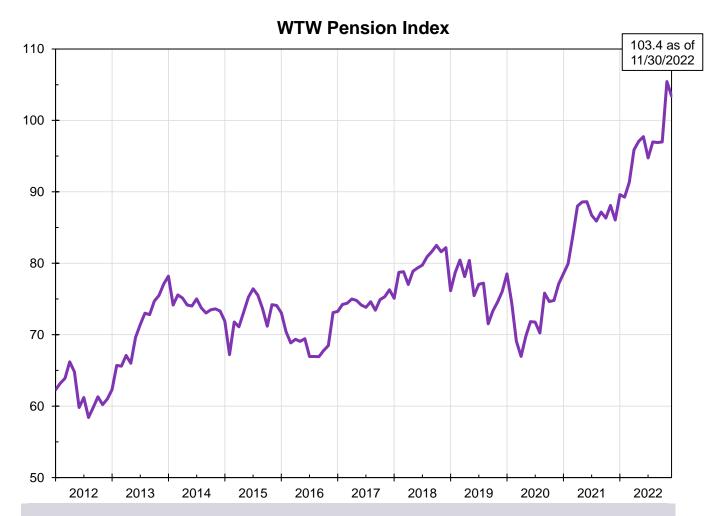


Pension Finance Watch

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Pension index decreased in November

After a sharp increase in its value in October, the WTW Pension Index declined in November 2022. This month's change was a result of an increase in liabilities due to a decrease in discount rates, partially offset by strong investment returns. As a result, the November 30, 2022 index level of 103.4 reflects a decrease of 1.9% 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

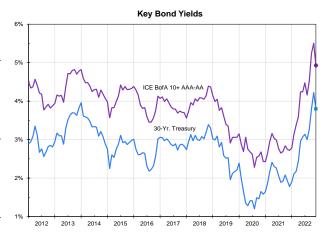
The equity portion of the benchmark portfolio returned 6.3% in November, with the international equity asset class incurring the largest growth. Equity returns were combined with the fixed income investments of the tracked benchmark portfolio, which had a positive return at 3.3%, with Long Corporate Bonds experiencing the largest gains.

Asset Class Returns					
	Nov. 2022	YTD	Last 12 Months		
Stock Returns					
S&P 500 (Large Cap)	5.6%	-13.1%	-9.2%		
Russell 2500 (U.S. Small/Mid-Cap)	4.2%	-13.2%	-10.4%		
EAFE (International)	11.3%	-14.5%	-10.1%		
Fixed Income Returns					
3-Month T-Bills	0.3%	1.2%	1.2%		
Long Treasury Bonds	7.1%	-28.0%	-29.1%		
Bloomberg Barclays U.S. Aggregate	3.7%	-12.6%	-12.8%		
Long Corporate Bonds (AAA/AA)	8.7%	-25.3%	-26.0%		

Interest rates

Yields on long high-quality corporate bond indices decreased an average of 56 basis points. These were followed by decreases in long Treasury rates. Yields on 10- and 30-year Treasury bonds decreased 42 basis points. The broader Bloomberg Barclays Aggregate index decreased 45 basis points this month.

Bond Yields			
	Nov 2022	Dec 2021	Nov 2021
U.S. Treasuries			
30-Year	3.80	1.90	1.78
10-Year	3.68	1.52	1.43
3-Month	4.37	0.06	0.05
Corporate Bonds			
ICE BofA 10+ AAA-AA	4.94	2.78	2.72
Moody's Aa	4.99	2.78	2.74
BB Aggregate	4.56	1.76	1.70





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 5.1% return for the month. Several alternative portfolios are also monitored. Portfolios with 20% and 60% fixed income allocations produced 5.7% and 4.5% returns, respectively. A variation of the 60% fixed income portfolio that incorporates longer-duration fixed income investments generated a 6.9% 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 increased by 7.2% from the discount rate change and the accumulation of interest.

These factors contributed to an overall decrease of 1.9% in the WTW Pension Index, which closes the month at 103.4.

Pension Index Results				
	Nov 2022	YTD	Last 12 Months	
Benchmark Portfolio Returns				
20% Fixed Income	5.7%	-12.6%	-9.6%	
40% Fixed Income (benchmark)	5.1%	-12.1%	-9.8%	
60% Fixed Income	4.5%	-11.6%	-10.2%	
60% Fixed Income (long duration version)	6.9%	-19.8%	-18.9%	
Benchmark Plan Liability Results				
Discount Rate (at valuation date)*	5.37	3.03	2.91	
Liability Growth Factor	7.2%	-23.8%	-25.0%	
Pension Index*	103.4	89.6	86.1	
Percentage change	-1.9%	+15.4%	+20.2%	

^{*}Discount rates and pension index values in the three columns are as of 11/30/2022, 12/31/2021 and 11/30/2021, respectively.



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.