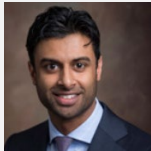# T. RowePrice®
INVEST WITH CONFIDENCE

LDI Solutions

PENSION CURVE INSIDER

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MONTHLY RECAP

Treasury yields shifted significantly higher during the month of January, as the possibility of persistent inflation fueled investor concerns about a more hawkish Fed policy path. Equity markets suffered from sharp intra-month declines, but corporate spreads rose only modestly by month end.

Plan liability values decreased on a marked-to-market basis in January, extending their decline from December. Discount rates for a sample plan liability rose by 33 basis points based on the AA-rated spot curve and 26 basis points using the top-yielding curve. At month end, the top-yielding curve provided 32 basis points of additional yield versus the broader AA-rated universe.

After a quiet holiday season, issuance picked up in January and $9.4B in new bonds entered the index. New issues had a minor upward impact on the intermediate segment of the curve. No turnover occurred due to credit rating changes, and only two bonds exited the universe due to other inclusion criteria.

LIABILITY IMPACT

Legend: Accounting Liability | Top Yielding Accounting Liability | IRS Liability | Accounting Discount Rate | Top Yielding Discount Rate | IRS Effective Interest Rate

Yield Curve	Liability Value 1/31/22	Discount Rate 1/31/22	Liability Value 12/31/21	Discount Rate 12/31/21	Liability Value 12/31/20	Discount Rate 12/31/20
Accounting Yield Curve	$11,284	3.15%	$11,849	2.82%	$12,288	2.57%
Top Yielding Accounting Curve	$10,775	3.47%	$11,192	3.21%	$11,456	3.04%
IRS Yield Curve	$11,269	3.14%	$11,411	3.06%	$12,182	2.62%

Sources: Bloomberg. Bloomberg Index Services Ltd. Copyright 2021, Bloomberg Index Services Ltd. Used with permission. IRS, and T. Rowe Price. Sample plan cash flows have a liability of $10,000 at 4.0% discount rate.

ACCOUNTING CURVE
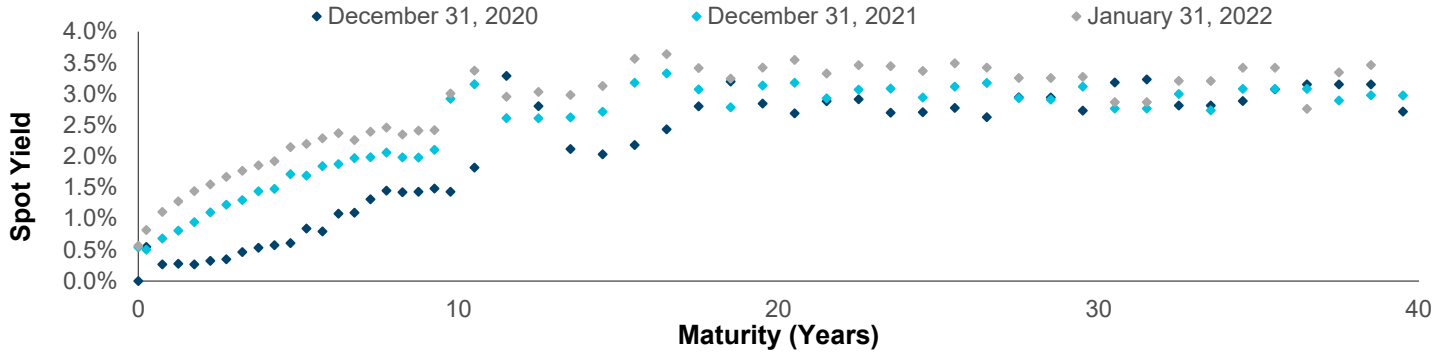
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Issuer	Event	Curve Impact
Export-Import Bank of Korea	New Issue (3 Bonds)	The Export-Import Bank of Korea brought three new issues to market during the month of January. The South Korean agency, which provides credit support to exporters within the country, accounted for $16.6B (2.5%) of the AA-rated universe's market value at month end. The three $1.0B notional bonds had maturities of three, five, and ten years, and each traded in line with similar seasoned index constituents.
Province of Ontario	New Issue (1 Bond)	The Province of Ontarios sold a $1.5B notional bond in late January. The Canadian province rose ahead of Shell International, PLC to become the third-largest debt issuer within the AA-rated index, accounting for 6.1% of its market value at month end. The new bond traded slightly tighter than similar issues in the AA-rated index, and was expected to list on the Euro MTF Market in Luxembourg.
Procter & Gamble	New Issue (2 Bonds)	Procter & Gamble issued $1.8B of new debt during the month, in two bonds dated to mature in February of 2027 and 2032. Curve impact from their index inclusion was minimal, as the bonds traded within range of similarly-dated peers.

Sources: Bloomberg. Bloomberg Index Services Ltd. Copyright 2021, Bloomberg Index Services Ltd. Used with permission. T. Rowe Price.

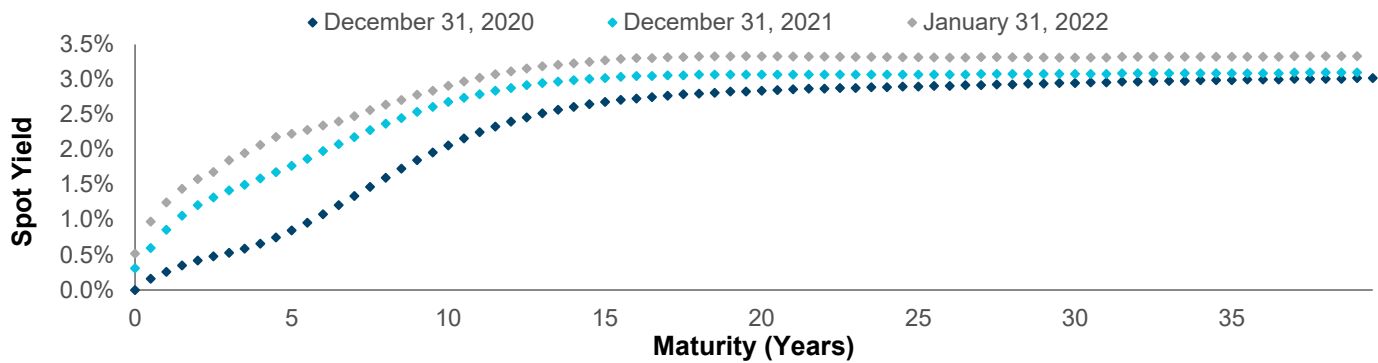|	New Issues	Other Bonds Entering	Downgrades	Other Bonds Exiting
January 2022				
Count	10	--	--	2
Market Value ($M)	$9,399	--	--	$2,102
Market Value (%)	1.41%	--	--	0.32%
2022 YTD				
Count	10	--	--	2
Market Value ($M)	$9,399	--	--	$2,102
Market Value (%)	1.41%	--	--	0.32%

Sources: Bloomberg. Bloomberg Index Services Ltd. Copyright 2021, Bloomberg Index Services Ltd. Used with permission. T. Rowe Price.

TOP YIELDING ACCOUNTING CURVE
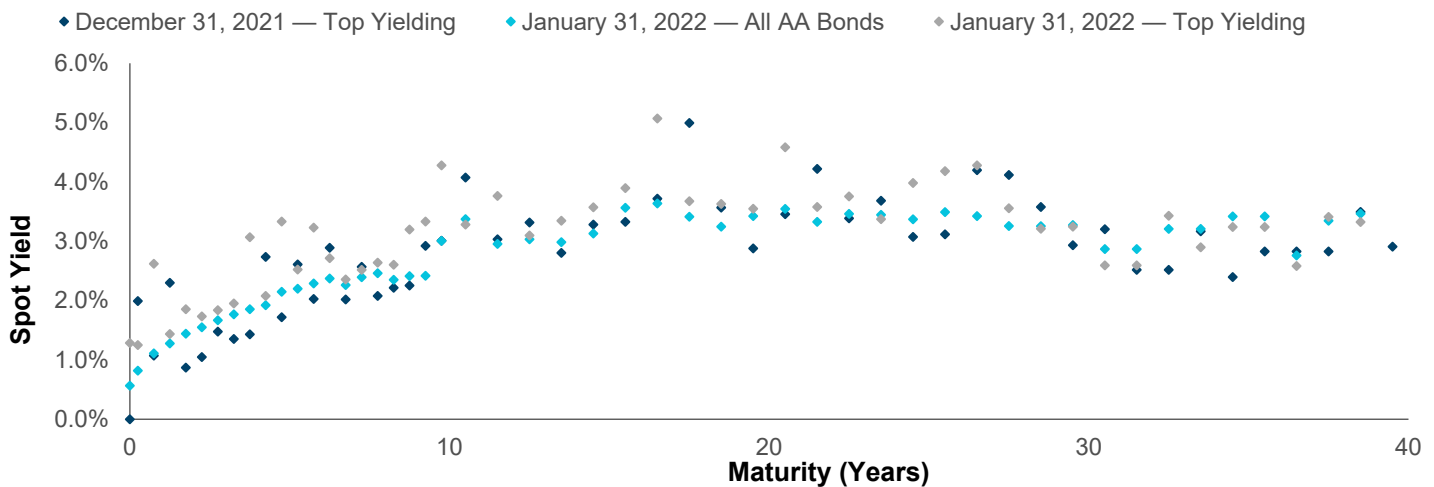
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IRS CURVE

Sources: IRS and T. Rowe Price

Dates	AAA Corporate OAS (basis points)	AA Corporate OAS	A Corporate OAS	BBB Corporate OAS
December Monthly Average	70	52	76	116
January 1, 2022	65	49	73	112
January 15, 2022	70	51	76	115
January 31, 2022	74	56	83	126
January Monthly Average	70	52	77	117

Sources: Bloomberg. Bloomberg Index Services Ltd. Copyright 2021, Bloomberg Index Services Ltd. Used with permission. T. Rowe Price.
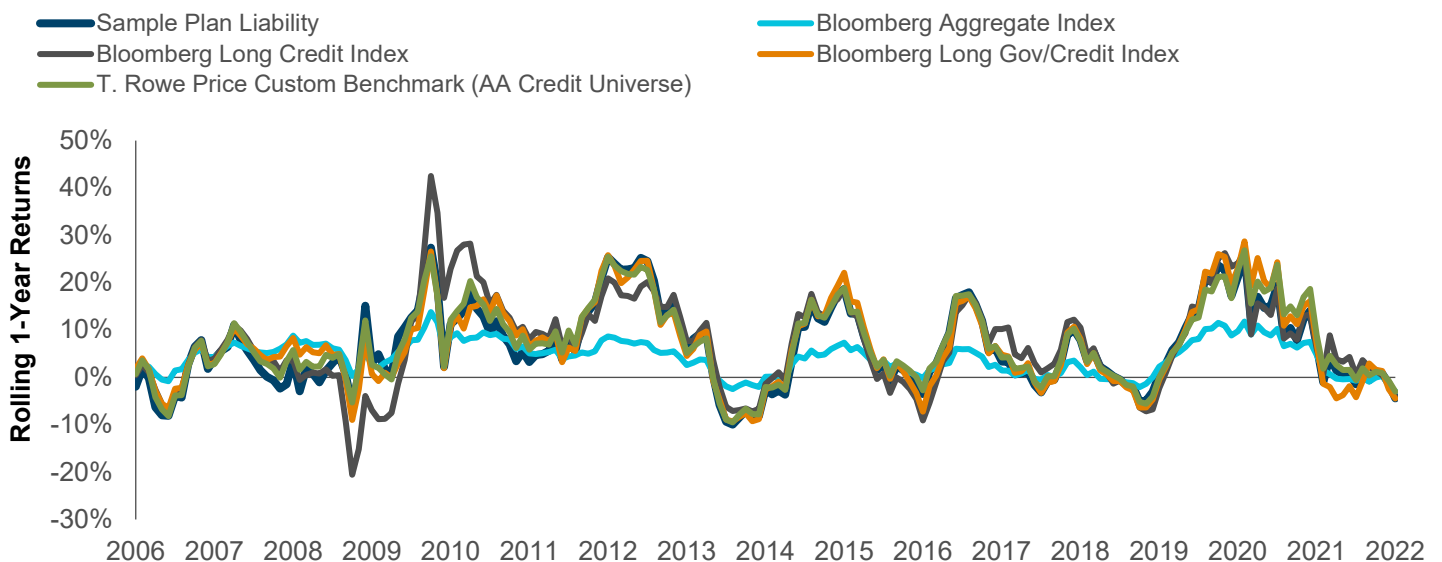
ONE-YEAR ROLLING RETURNS AND TRACKING ERROR

	January 2022 Return	YTD Total Return	Annual Tracking Error Relative to Liability	Average Monthly Return Difference from Liability
Hypothetical Sample Plan Liability	-4.56%	-4.56%	NA	NA
Bloomberg Aggregate Index	-2.15%	-2.15%	6.60%	1.44%
Bloomberg Long Credit Index	-5.48%	-5.48%	4.36%	0.89%
Bloomberg Long Gov/Credit Index	-4.90%	-4.90%	3.17%	0.64%
Hypothetical T. Rowe Price Custom Benchmark	-3.92%	-3.92%	2.01%	0.32%

Sources: Bloomberg Index Services Ltd., T. Rowe Price; Analysis by T. Rowe Price. Performance in graph and tables above shown from February 1, 2005 through January 31, 2022.

Past performance cannot guarantee future results. Custom Benchmark returns do not reflect the deduction of management fees. Please refer to the disclosure at the end of the article for important additional information.

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GLOSSARY

IRS Yield Curve: Plan sponsors of qualified defined benefit pension plans use this yield curve to determine funding requirements per IRS regulations. These funding requirements are disclosed on form 5500 annually. Yields on AAA, AA, and A corporate securities determine the yield curve for discounting purposes. The yield curve is not a marked-to-market curve representing any single date, but rather an average yield over the course of the entire month. For more information on the IRS methodology, please see **treasury.gov/resource-center** and **irs.gov/Retirement-Plans**.

Accounting Yield Curve: US GAAP requires pension plan sponsors to disclose pension obligations using "fixed-income debt securities that receive one of the two highest ratings given by a recognized ratings agency". As a proxy for bonds useable for accounting purposes, we use the constituents of Bloomberg AA credit universe to develop the accounting yield curve shown. Please see **fasb.org** for more information.

Top Yielding Curve: Since the US GAAP rules allow the use of a fairly broad range of securities for accounting purposes, some plan sponsors use an optimized yield curve approach to value their pension liabilities on the disclosure dates. Bonds trading at higher yields than other bonds of similar maturity tend to be used for this purpose. To quantify the effectiveness of this approach, T. Rowe Price developed a yield curve using the highest yielding bonds designed to meet SEC requirements at each node.

Annual Tracking Error Relative to Liability: Calculated as the standard deviation of return differences between a fixed income index and a set of cash flows discounted using the accounting yield curve. The liability return has two components: an interest cost component analogous to roll return on a bond, and yield change component analogous to price return on a bond. The table shows annualized ex-post tracking error.

Average Monthly Return Difference: Similar to the tracking error metric, this metric demonstrates how closely a fixed income benchmark tracks a set of liability returns. We calculate this measure by simply averaging the difference in returns over the period shown.

Sample Plan Liability: Pension plan sponsors must account for the cost of their retirement plan on their financial statements. The amount of this liability can fluctuate over time based on several factors, including benefits earned, benefits paid out, mortality experience, and most significantly, interest rates. The Sample Plan is intended to be a representative defined benefit pension plan and does not reflect the cash flows from any specific plan.

T. Rowe Price Custom Benchmark: An index of fixed income securities created using T. Rowe Price proprietary methodology that attempts to replicate interest rate exposures embedded in a pension plan's liability structure.

To learn more, please visit **troweprice.com**

Important Information

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The illustrations presented are hypothetical and used to demonstrate capabilities. Certain assumptions have been made for modelling purposes and with the benefit of hindsight and are unlikely to be realized. The specific issuers and bond issues mentioned in this document had significant impact on liability curves calculated using Bloomberg index universes. The modelling used for plan and benchmark development has certain inherent limitations. Benchmark construction may not reflect all material economic and market factors that could have impacted implementation or weighting decisions if the modelled plan actually existed during the time period presented. Actual T. Rowe Price Custom Benchmark characteristics, including (among other things) yield, annualized return, liability-relative tracking error and average monthly returns difference relative to plan liability may differ substantially from the hypothetical scenario presented.