INCOME RESEARCH + MANAGEMENT

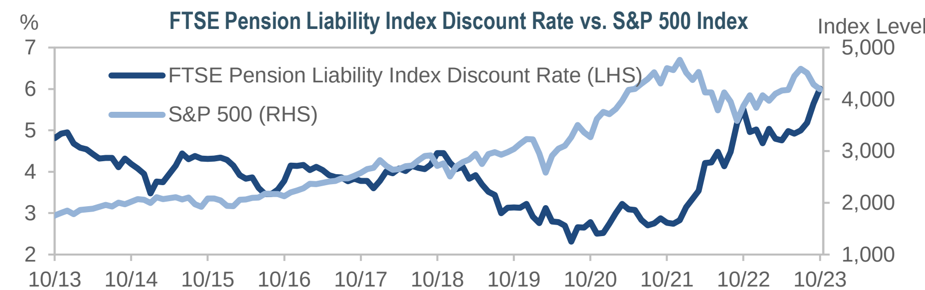
LDI MONITOR

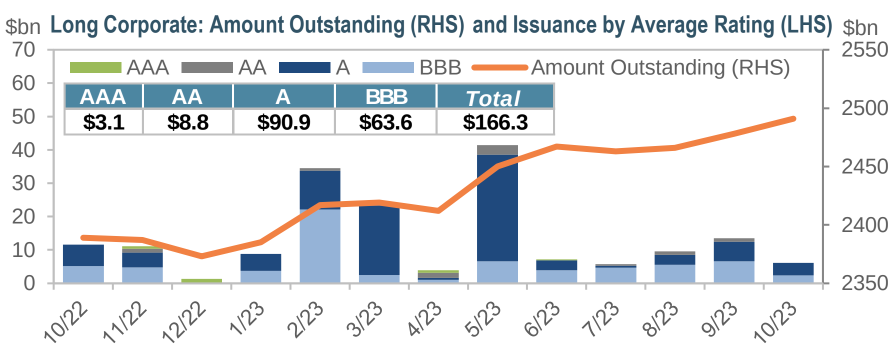
October 31, 2023

LDI Market Updates

- Discount rates[1] increased by 0.34% in October, from 5.55% to 5.89%.
- The S&P 500 continued its downward trajectory from the previous two months, declining 2.2% month-over-month in October. Long corporate spreads widened by 4bps to end the month at 138bps.
- The investment-grade corporate market saw $81 billion of new bonds price during the month, slightly below dealer expectations and last year's figures. The long end continued its trend of limited issuance, with just over $6 billion of new issues priced.

Rates Monitor	10/23	09/23	MoM Change	12/22	YTD Change
IR+M Average Plan Discount Rate (%)	5.89	5.55	0.34	4.89	1.00
Bloomberg Long Corp Yield (%)	6.54	6.14	0.40	5.60	0.94
Bloomberg Long Corp A+ Yield (%)	6.24	5.86	0.38	5.26	0.98
Bloomberg Long Corp BBB Yield (%)	6.87	6.48	0.39	5.95	0.92
Long Corp Spreads (bps)	138	134	4	158	(20)
Curve (Long Corp - Int Corp) (bps)	13	19	(6)	42	(29)

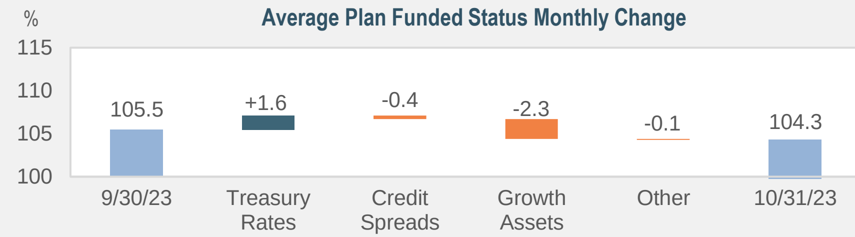




IR+M Funded Status Monitor

- Our sample Average Plan funded status decreased by 1.2% during October, closing at 104.3%, primarily due to a decline in risk assets partially offset by an increase in discount rates.

Funded Status (%)	10/23	09/23	MoM Change	12/22	YTD Change
Average Plan	104.3	105.5	(1.2)	100.4	3.9
End Stage Plan	106.1	106.9	(0.8)	105.2	0.9
Young Plan	95.7	96.7	(1.0)	92.1	3.6



Other includes contributions, expenses, benefit accruals, and liability profile changes.

IR+M LDI Corner – Don't Let Rate Volatility Spook You

- Volatility in the long end haunted fixed income markets in October. The ICE BofA MOVE Index—a measure of volatility in the US bond market—rose by 28 points in early October and remained elevated throughout the month. The 10-year Treasury yield increased by 36bps to 4.93%, and the 30-year increased by 39bps to 5.10%, marking their highest levels since 2007. The unpredictability of markets has further escalated as of late due to geopolitical factors, such as overseas conflicts and political uncertainty in the US.
- Market indicators paint a mixed picture of the state of the economy. The S&P 500 has declined by 8% since July, while corporate fundamentals imply some resilience. The Federal Reserve (Fed) has paused rate hikes amid growing pressures, and the market anticipates moderate rate cuts in early 2024. Meanwhile, a potential recession remains a looming concern for investors.
  - While some analysts see the most recent rise in rates as momentum-driven and anticipate a modest reversion by year-end, others suggest that higher rates may endure as a "new normal" with inflation around 3%.
- Pension plans have thrived in the higher rate environment with lower liabilities and improved funded statuses. At IR+M, we maintain a duration neutral stance, recognizing the inherent difficulty in predicting rates. Whether rates rise or fall, a strategic shift towards Liability Driven Investing can safeguard recent funded status gains, offering a prudent response to market volatility and uncertainty.

[1]The single effective discount rate shown is for the IR+M Sample Average Plan, calculated from the FTSE Pension Discount Curve. Long corporate issuance sourced from Bloomberg. Long issuance figures exclude 10-year bonds. The table in the long issuance chart shows the 12-month running total investment grade issuance by rating, through 10/31/2023 in USD billions. Totals may not sum due to rounding.

IR+M DISCLOSURE STATEMENT

Disclosures:

Sources: Moody's PFaroe, FTSE Russell (formerly Citigroup), and Bloomberg. All data in the above commentary is as of 10/31/2023. Yields are represented as of the aforementioned date and are subject to change. The views contained in this report are those of Income Research & Management ("IR+M") and are based on information obtained by IR+M from sources that are believed to be reliable but IR+M makes no guarantee as to the accuracy or completeness of the underlying third-party data used to form IR+M's views and opinions. This report is for informational purposes only and is not intended to provide specific advice, recommendations, or projected returns for any particular IR+M product. Investing in securities involves risk of loss that clients should be prepared to bear. More specifically, investing in the bond market is subject to certain risks including but not limited to market, interest rate, credit, call or prepayment, extension, issuer, and inflation risk. "Bloomberg®" and Bloomberg Indices are service marks of Bloomberg Finance L.P. and its affiliates, including Bloomberg Index Services Limited ("BISL"), the administrator of the index (collectively, "Bloomberg") and have been licensed for use for certain purposes by IR+M. Bloomberg is not affiliated with IR+M, and Bloomberg does not approve, endorse, review, or recommend the products described herein. Bloomberg does not guarantee the timeliness, accurateness, or completeness of any data or information relating to any IR+M product. Moody's Analytics PFaroe® product used by IR+M includes market data and other information sourced from third parties under license. Certain licensors require Moody's Analytics to make disclosures to, or to obtain acknowledgements or agreements from, IR+M and parties receiving the information from IR+M, which is effected by the disclosures and disclaimers available at https://static.pfaroe.com/DisclosuresAndDisclaimers/index.html.

IR+M Funded Status Monitor Assumptions:

Detailed methodology and assumptions for the IR+M Funded Status Monitor can be found at:
https://www.incomeresearch.com/wp-content/uploads/2023/02/IRM-Funded-Status-Monitor-Whitepaper-2023.pdf

	End Stage	Average	Young
Target Liability Duration (Years)	7-9	10-12	13-15
Funded Ratio at Inception (i.e., 12/31/2019)	100.0%	89.8%	80.0%

Asset Allocations	End Stage	Average	Young
US All Cap Equity	8%	27%	38%
International Equity	2%	17%	22%
US REITS	0%	2%	5%
Private Equity	0%	4%	5%
Growth Assets Allocation	10%	50%	70%
Long Government Fixed Income	5%	10%	15%
Long Credit Fixed Income	30%	25%	15%
Intermediate Government Fixed Income	5%	5%	0%
Intermediate Credit Fixed Income	50%	10%	0%
Fixed Income Allocation	90%	50%	30%