IR+M INCOME RESEARCH + MANAGEMENT

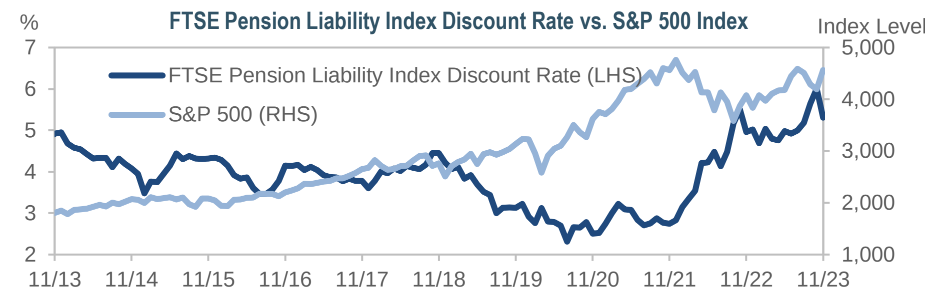
LDI MONITOR

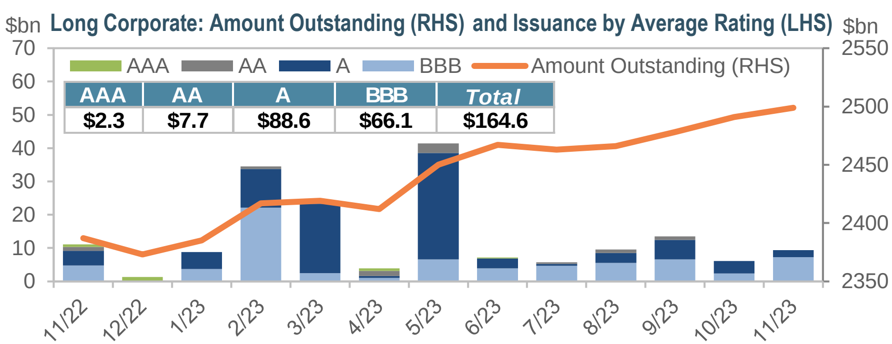
November 30, 2023

LDI Market Updates

- Discount rates[1] decreased by 0.70% in November, from 5.89% to 5.19%.
- Both equity and fixed income markets posted positive returns as the S&P 500 grew by 8.9%, and long corporate spreads tightened by 25bps to 113bps.
- Investment-grade issuance of $98 billion during November was met with strong demand; deals were generally oversubscribed, and new issue concessions were minimal. The long end continued its trend of limited supply with just over $9 billion of new issues priced.

Rates Monitor	11/23	10/23	MoM Change	12/22	YTD Change
IR+M Average Plan Discount Rate (%)	5.19	5.89	(0.70)	4.89	0.30
Bloomberg Long Corp Yield (%)	5.74	6.54	(0.80)	5.60	0.14
Bloomberg Long Corp A+ Yield (%)	5.48	6.24	(0.76)	5.26	0.22
Bloomberg Long Corp BBB Yield (%)	6.05	6.87	(0.82)	5.95	0.10
Long Corp Spreads (bps)	113	138	(25)	158	(45)
Curve (Long Corp - Int Corp) (bps)	14	13	1	42	(28)

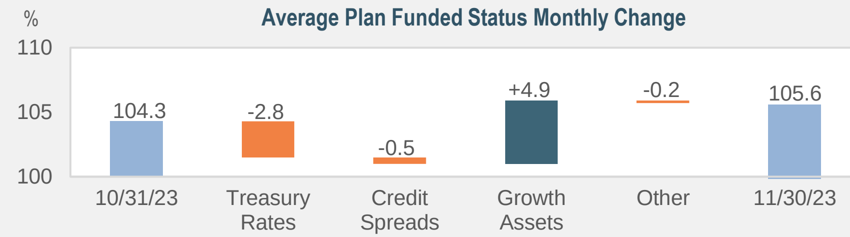




IR+M Funded Status Monitor

- Our sample Average Plan funded status increased by 1.3% during November, closing at 105.6%. Positive growth asset returns offset lower rates.

Funded Status (%)	11/23	10/23	MoM Change	12/22	YTD Change
Average Plan	105.6	104.3	1.3	100.4	5.2
End Stage Plan	107.5	106.1	1.4	105.2	2.3
Young Plan	95.9	95.7	0.2	92.1	3.8



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

IR+M LDI Corner – Can Intermediate Credit Carry Your LDI Strategy?

- We recently published a timely piece exploring how plan type and objectives may influence the decision to add Intermediate Credit in LDI solutions. Intermediate Credit may be a compelling option for your investment strategy given its current carry advantage and diversification benefits along with the ability to limit its impact to funded status volatility
- We evaluated the addition of Intermediate Credit to our Average, Mature, and Young plans, and we employed both back-testing and forward-looking Monte Carlo simulations to highlight various sponsor considerations. We found that:
  - Adding an Intermediate Credit allocation did not improve our Young Plan's results;
  - Our Average Plan's risk and return may be improved with a tactical allocation to Intermediate Credit; and
  - Our Mature Plan may benefit from a strategic allocation to Intermediate Credit.
- At IR+M, we recognize that each plan's unique objectives, asset allocations, and liability profiles should be factored into investment decisions. We would welcome the opportunity to discuss our capabilities and tailor our analysis to your plan in evaluating whether an Intermediate Credit allocation can add value to your LDI strategy.

[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 11/30/2023 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 11/30/2023. 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%