IR+M INCOME RESEARCH + MANAGEMENT

LDI MONITOR

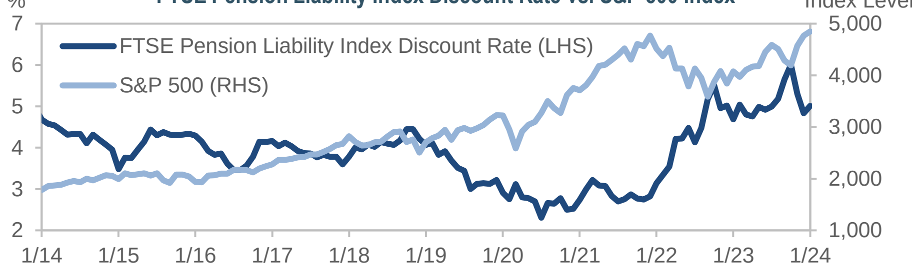
January 31, 2024

LDI Market Updates

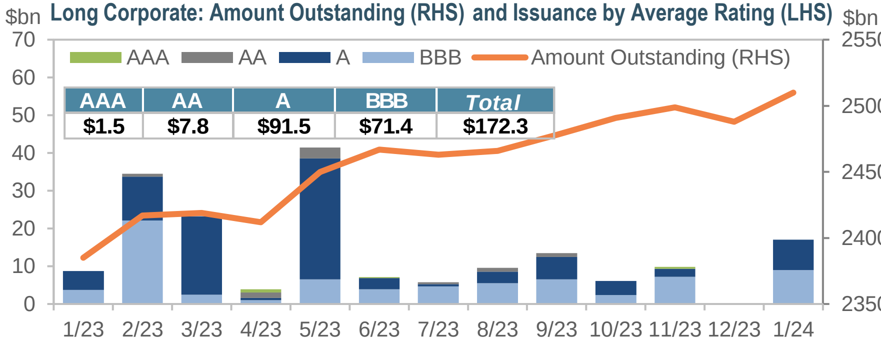
- Discount rates[1] increased by 0.16% in January, from 4.69% to 4.85%.
- The S&P 500 returned 1.6% during the month and long corporate spreads tightened by 9bps to 107bps.
- The investment-grade market saw a record-breaking $189 billion of supply come in the month, surpassing the previous high mark as well as dealer expectations.
  - Long-end supply totaled $17.1 billion or 9% of the total investment-grade issuance for the month.

Rates Monitor	01/24	12/23	YTD Change
IR+M Average Plan Discount Rate (%)	4.85	4.69	0.16
Bloomberg Long Corp Yield (%)	5.32	5.22	0.10
Bloomberg Long Corp A+ Yield (%)	5.10	4.98	0.12
Bloomberg Long Corp BBB Yield (%)	5.58	5.51	0.07
Long Corp Spreads (bps)	107	116	(9)
Curve (Long Corp - Int Corp) (bps)	17	26	(9)

FTSE Pension Liability Index Discount Rate vs. S&P 500 Index



Long Corporate: Amount Outstanding (RHS) and Issuance by Average Rating (LHS)

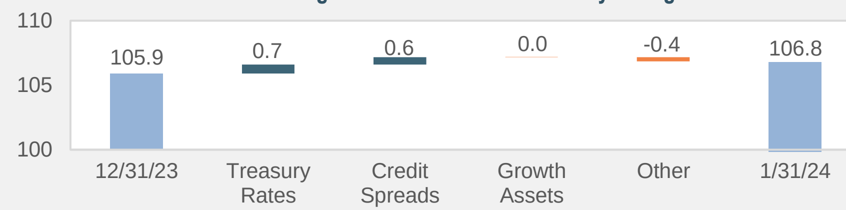


IR+M Funded Status Monitor

- Our sample Average Plan funded status increased by 0.9% during January, closing at 106.8%, primarily due to a rise in discount rates.

Funded Status (%)	01/24	12/23	YTD Change
Average Plan	106.8	105.9	0.9
End Stage Plan	108.9	108.4	0.5
Young Plan	96.1	95.2	0.9

Average Plan Funded Status Monthly Change



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

IR+M LDI Corner – How Tight Can Long Spreads Get?

- Long corporate spreads tightened to as low as 102bps in January before widening 5bps to end the month at 107bps. These levels are over 1 standard deviation away from historical averages, and the tightest levels seen since 1998.
- Elevated long-end rates and limited M&A activity have contributed to a lack of long supply. Meanwhile, the demand for long duration remains robust from a captive buyer base driven by pensions and insurance companies. Long bonds[2] issued in January were 5.0x oversubscribed on average while shorter bonds[3] were 3.5x oversubscribed.
- While over the long-term, we expect long corporate spreads to normalize at wider levels, near-term uncertainty may lead to tighter or wider spreads. Spreads may tighten even more and set new record lows if supply remains limited and rates stay elevated. However, we could see widening if fundamentals weaken, yields fall, or geopolitical tensions increase.
- At IR+M, we believe 2024 could be just as eventful as 2023, with many potential destabilizers on the horizon. The historically tight long corporate spread levels lack sufficient compensation for rising fundamental concerns. We remain cautious in our positioning, preserving liquidity to seize opportunities amid spread fluctuations - whether wider or tighter. Through active management and careful fundamental analysis, we believe bond investors can leverage higher interest rates for enhanced long-term returns and resilience against volatility.

[1]The single effective discount rate shown is for the IR+M Sample Average Plan, calculated from the FTSE Pension Discount Curve. [2]Bonds with tenures greater than or equal to 15 years. [3]Bonds with tenures less than 15 years. Long 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 1/31/24 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 1/31/2024. 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/2024/02/IRM-Funded-Status-Monitor-Whitepaper-2024.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%