

LDI Market Updates

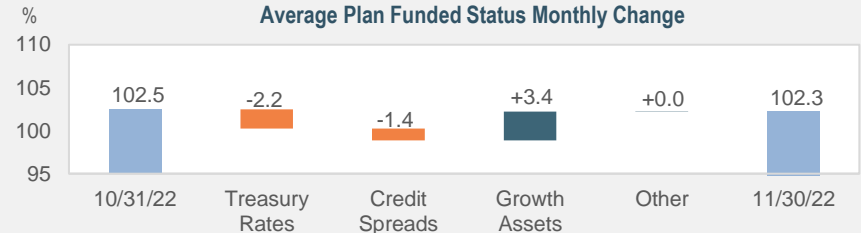
- Discount rates decreased by 0.55% in November, from 5.36% to 4.81%, and growth assets outperformed with the S&P 500 returning 5.4%.
- Fixed income assets also posted positive returns with the Long Corporate index returning 9.1% helped in part by long corporate spreads tightening 25bps from 185bps to 160bps.
- Long corporate issuance was relatively light this month - out of the \$100 billion of newly issued corporate bonds only \$10 billion came in the long end.

IR+M Funded Status Monitor

- Our sample Average Plan funded status decreased by 0.2% during November, closing at 102.3%; despite positive growth asset returns, lower discount rates decreased the funded status.

Funded Status (%)	11/22	10/22	MoM Change	12/21	YTD Change
Average Plan	102.3	102.5	(0.2)	101.9	0.4
End Stage Plan	105.9	105.7	0.2	106.8	(0.9)
Young Plan	94.7	96.4	(1.7)	92.2	2.5

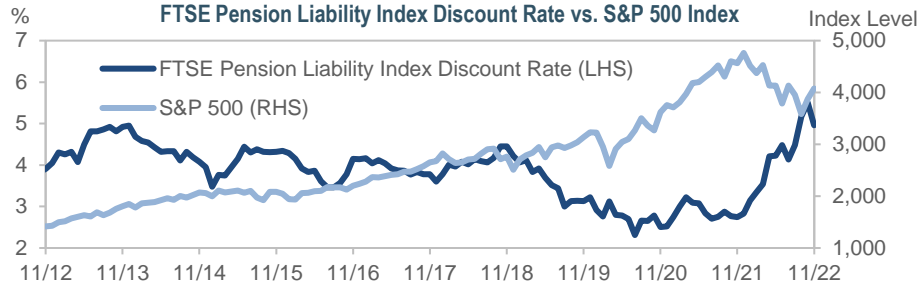
Average Plan Funded Status Monthly Change



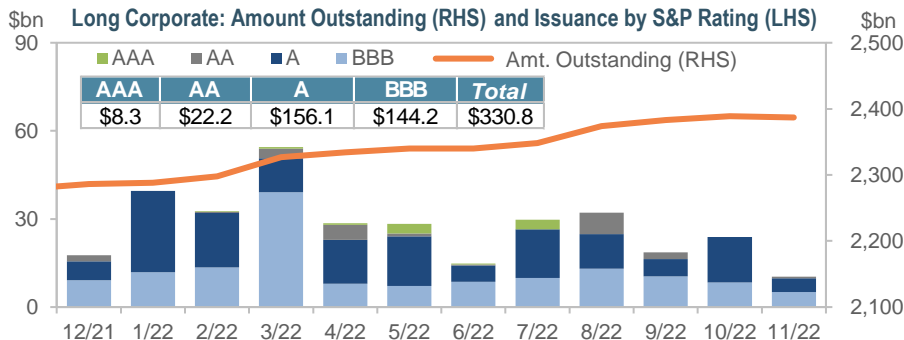
Other includes contributions, expenses, benefit accruals, and liability profile changes.

Rates Monitor	11/22	10/22	MoM Change	12/21	YTD Change
IR+M Average Plan Discount Rate (%)	4.81	5.36	(0.55)	2.61	2.20
Bloomberg Long Corp Yield (%)	5.48	6.13	(0.65)	3.10	2.38
Bloomberg Long Corp A+ Yield (%)	5.14	5.77	(0.63)	2.87	2.27
Bloomberg Long Corp BBB Yield (%)	5.82	6.49	(0.67)	3.32	2.50
Long Corp Spreads (bps)	160	185	(25)	130	30
Curve (Long Corp - Int Corp) (bps)	41	39	2	61	(20)

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



Long Corporate: Amount Outstanding (RHS) and Issuance by S&P Rating (LHS)



IR+M LDI Corner – Year-End Liquidity Might Not Go With the Flow

- We believe sponsors should be mindful of market liquidity heading into year-end and incorporate these considerations into their investment strategy decisions.
- Pension risk transfer executions are most popular in the fourth quarter and many sponsors offer lump sums shortly ahead of termination. We expect to be able to raise cash and sell most credits not too far off their bid prices for the remainder of the year, assuming no market surprises.
- On the other hand, liquidity could be thin in terms of buying with counterparties not in their seats and dealers becoming more defensive. We also do not expect any new issue supply during the last couple of weeks in December.
  - Liquidity may be further strained if Central States, Southeast & Southwest Areas Pension Plan receives at least \$35bn of [Special Financial Assistance](#), of which 67% must be invested in investment grade fixed income.
- With lagged marked-to-market asset values for alternatives, funded statuses may be adjusted lower next year once alternatives are trued up. Sponsors may want to defer long-term strategic asset allocations changes until then.
- We regularly engage and partner with our clients on liquidity related decisions to evaluate opportune times to buy or sell spread product given specific time constraints, magnitude of trades, and current and expected market conditions.

# IR+M DISCLOSURE STATEMENT

## Disclosures:

Sources: Moody's PFaroe, Milliman, FTSE Russell (formerly Citigroup), Bloomberg, and JPMorgan. All data in the above commentary is as of 11/30/22. Yields are represented as of the aforementioned date and are subject to change. The views contained in this report are those of 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. No part of this material may be reproduced in any form, or referred to in any other publication, without express written permission from Income Research + Management. "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/2022/02/IRM-Funded-Status-Monitor-Whitepaper-2022.pdf>.

	End Stage	Average	Young
<b>Target Liability Duration (Years)</b>	8-10	12-14	15-17
<b>Funded Ratio at Inception (i.e., 12/31/2019)</b>	100.0%	89.8%	80.0%
<b>Asset Allocations</b>	End Stage	Average	Young
<b>US All Cap Equity</b>	8%	27%	38%
<b>International Equity</b>	2%	17%	22%
<b>US REITS</b>	0%	2%	5%
<b>Private Equity</b>	0%	4%	5%
<b>Growth Assets Allocation</b>	10%	50%	70%
<b>Long Government Fixed Income</b>	5%	10%	10%
<b>Long Credit Fixed Income</b>	30%	25%	10%
<b>Intermediate Government Fixed Income</b>	5%	5%	5%
<b>Intermediate Credit Fixed Income</b>	50%	10%	5%
<b>Fixed Income Allocation</b>	90%	50%	30%