IR+M INCOME RESEARCH + MANAGEMENT

LDI MONITOR

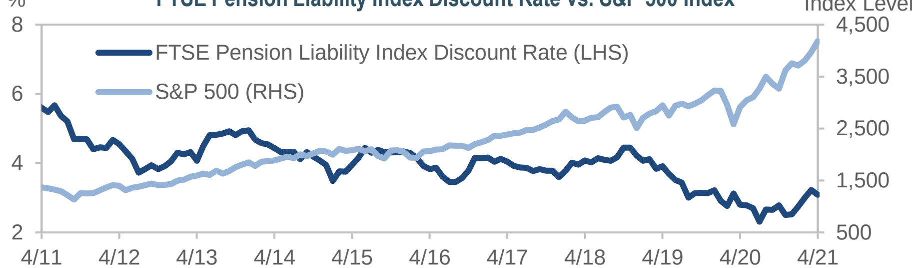
April 30, 2021

LDI Market Updates

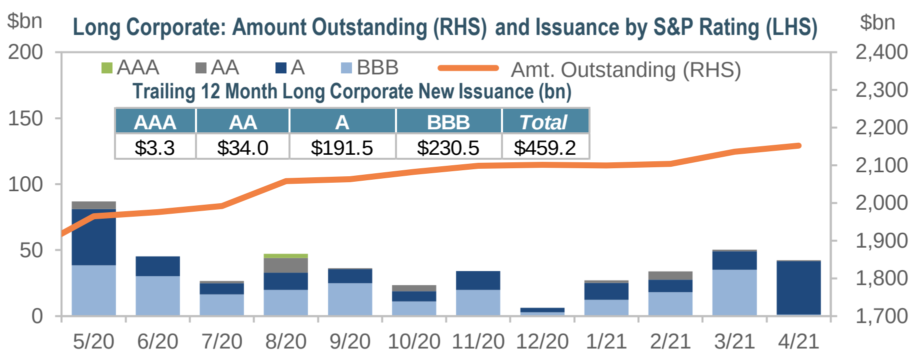
- Discount rates decreased in April by 0.13%, to 2.80% from 2.93%.
- Strong economic data, positive earnings, and a continued accommodative stance from the Federal Reserve provided a tailwind for risk assets in April.
- Driven by the banking sector and the expectation of higher rates, issuance in long bonds surprised to the upside, with a focus on 20-year debt.
- After tightening mid-month, spreads widened 1bp to 126bps, as investors took a pause amid the deluge of supply.

Rates Monitor	04/21	03/21	MoM Change	12/20	YTD Change
IR+M Average Plan Discount Rate (%)	2.80	2.93	(0.13)	2.22	0.58
Bloom Barc Long Corp Yield (%)	3.35	3.45	(0.10)	2.78	0.57
Bloom Barc Long Corp A+ Yield (%)	3.09	3.20	(0.11)	2.49	0.60
Bloom Barc Long Corp BBB Yield (%)	3.60	3.69	(0.09)	3.07	0.53
Long Corp Spreads (bps)	126	125	1	140	(14)
Curve (Long Corp - Int Corp) (bps)	60	55	5	72	(12)

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



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



Trailing 12 Month Long Corporate New Issuance (bn)

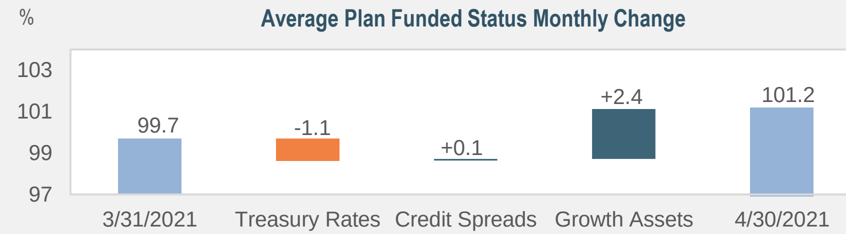
AAA	AA	A	BBB	*Total*
$3.3	$34.0	$191.5	$230.5	$459.2

IR+M Funded Status Monitor

- Our sample Average Plan funded status increased by 1.5% during April, closing at 101.2%; despite lower discount rates, positive growth asset returns pushed its funded status higher month-over-month.

Funded Status (%)	04/21	03/21	MoM Change	12/20	YTD Change
Average Plan	101.2	99.7	1.5	91.8	9.4
End Stage Plan	106.7	106.3	0.4	102.8	3.9
Young Plan	94.3	92.9	1.4	80.0	14.3

Average Plan Funded Status Monthly Change



IR+M LDI Corner: It's Hard To Say Good-Bye… So Don't?

- As funded statuses have made significant gains in 2021, it is timely for sponsors to re-visit the desired end stage for their pension plans.
- Hibernation seeks to earn sufficient returns on plan assets to cover any plan-related expenses without the need for additional cash contributions. The sponsor keeps the pension liability on the corporate balance sheet and pays ongoing costs to maintain the plan, including PBGC premiums.
  - Hibernation may be preferred if the pension is viewed as an effective employee retention tool.
  - We are also increasingly seeing hibernation as an interim step until full termination can be effected under more favorable prices.
- Under termination via an annuity buy-out with an insurer, all costs associated with sustaining the plan and accounting for liabilities are eliminated.
- Sponsors should consider if hibernation with LDI can achieve similar outcomes at a lower economic cost vs. a buy-out (which includes an insurer profit margin).
- LDI managers can partner with clients or consultants to craft a custom journey, ensuring progress to the chosen end stage over the preferred time horizon.

IR+M DISCLOSURE STATEMENT

Disclosures:

Sources: Milliman, FTSE Russell (formerly Citigroup), Bloomberg Barclays, Bloomberg, and JPMorgan. All data in the above commentary is as of 4/30/21. 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. This report is for informational purposes only and is not intended to provide specific advice, recommendations for, or projected returns of 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® is a trademark and service mark of Bloomberg Finance L.P. and its affiliates (collectively “Bloomberg”). BARCLAYS® is a trademark and service mark of Barclays Bank Plc (collectively with its affiliates, “Barclays”), used under license. Bloomberg or Bloomberg’s licensors, including Barclays, own all proprietary rights in the Bloomberg Barclays Indices. Neither Bloomberg nor Barclays approves or endorses this material, or guarantees the accuracy or completeness of any information herein, or makes any warranty, express or implied, as to the results to be obtained therefrom and, to the maximum extent allowed by law, neither shall have any liability or responsibility for injury or damages arising in connection therewith.

IR+M Funded Status Monitor Assumptions:

Detailed methodology and assumptions for the IR+M Funded Status Monitor can be found at:
http://www.incomeresearch.com/wp-content/uploads/2021/01/IRM-Funded-Status-Monitor-2021.pdf.

	End Stage	Average	Young
Target Liability Duration (Years)	8-10	12-14	15-17
Funded Ratio at Inception (i.e., 12/31/2019)	100.0%	89.8%	80.0%

Asset Allocations	End Stage	Average	Young
US Equity	12%	27%	38%
International Equity	3%	17%	22%
US REITS	0%	2%	5%
Private Equity	0%	4%	5%
Growth Assets Allocation	15%	50%	70%
Long Government Fixed Income	5%	10%	10%
Long Credit Fixed Income	30%	25%	10%
Intermediate Government Fixed Income	5%	5%	5%
Intermediate Credit Fixed Income	45%	10%	5%
Fixed Income Allocation	85%	50%	30%