

LDI MONITOR

March 31, 2021

LDI Market Updates

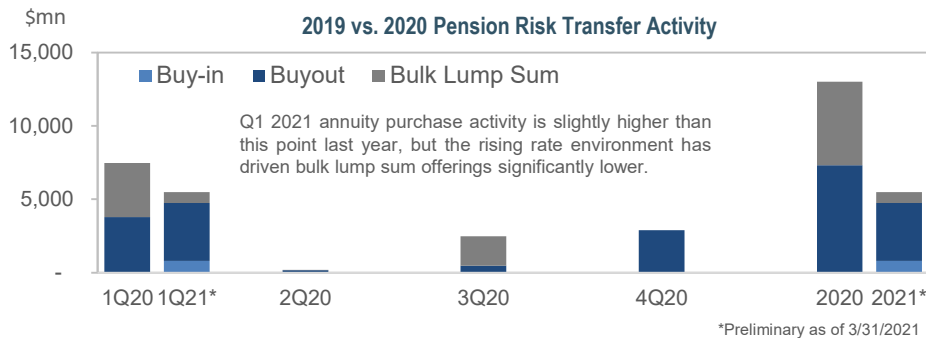
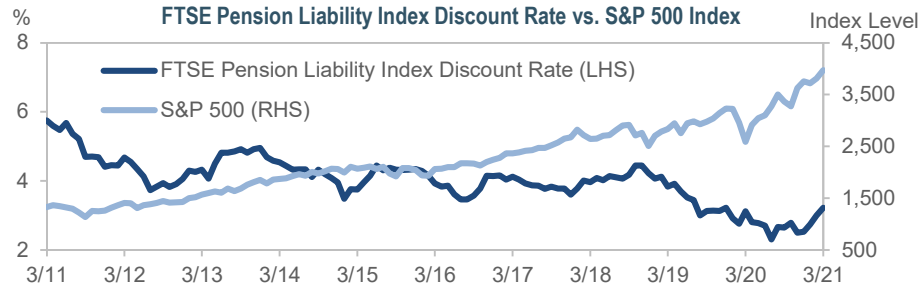
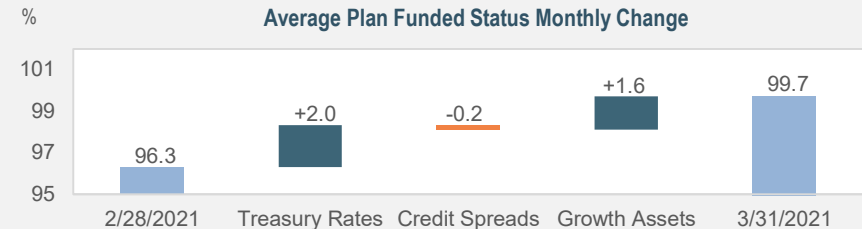
- Discount rates increased in March by 0.24%, to 2.93% from 2.69%.
- Growth assets largely outperformed, as the S&P 500 Index was up over 4% in March and reached a new all-time high.
- Despite heavy supply, investor appetite for long bonds buoyed spreads, which tightened by 6bps to 125bps, approaching the 15-year tights.
- Credit curves flattened further amid strong demand for duration, as long spreads tightened while intermediate spreads widened.

Rates Monitor	03/21	02/21	MoM Change	12/20	YTD Change
IR+M Average Plan Discount Rate (%)	2.93	2.69	0.24	2.22	0.71
Bloom Barc Long Corp Yield (%)	3.45	3.22	0.23	2.78	0.67
Bloom Barc Long Corp A+ Yield (%)	3.20	2.96	0.24	2.49	0.71
Bloom Barc Long Corp BBB Yield (%)	3.69	3.48	0.21	3.07	0.62
Long Corp Spreads (bps)	125	131	(6)	140	(15)
Curve (Long Corp - Int Corp) (bps)	55	66	(11)	72	(17)

IR+M Funded Status Monitor

- Our sample Average Plan funded status increased by 3.4% during March, closing at 99.7%; higher discount rates and positive growth asset returns pushed its funded status higher month-over-month.

Funded Status (%)	03/21	02/21	MoM Change	12/20	YTD Change
Average Plan	99.7	96.3	3.4	91.8	7.9
End Stage Plan	106.3	104.8	1.5	102.8	3.5
Young Plan	92.9	88.3	4.6	80.0	12.9



IR+M LDI Corner: To Fund or Not to Fund?

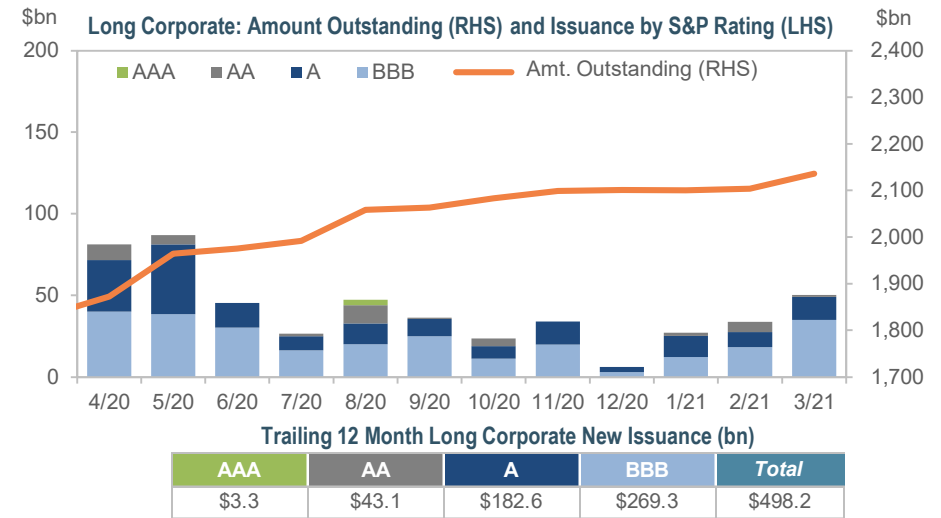
- The [American Rescue Plan Act](#) (ARPA) includes temporary funding relief for plan sponsors, allowing for the deferral of certain cash contributions. The decision to fund today versus the future has benefits and risks, and the chosen contribution policy should directly inform the broader investment strategy.
- + Funding relief provides flexibility to invest current free cash flows towards core business activities and postpone contributions to more profitable years.
- Conversely, lower contributions result in higher PBGC variable rate premiums. Also, the ability to execute a full pension risk transfer may be delayed beyond the desired time horizon if returns fall short of covering termination costs.
- The sponsor's risk tolerance influences the investment strategy and choice to close the funding deficit through investment returns or cash contributions.
 - Lower/higher risk tolerance suggests a higher/lower allocation to LDI, and lower/higher expected returns correspond to more/less predictable contributions.
- Your actuary, consultant, and LDI manager should be involved in funding decisions for a holistic investment approach targeting desired risk/return levels.

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First Quarter 2021 Corporate Issuance: Largest Long-Dated USD Investment Grade Deals

- Many corporations brought planned issuance forward in anticipation of higher future rates and pushed supply well over historical averages.
 - Borrowers priced the third-highest quarterly total of long bonds on record, issuing over \$111 billion, behind 1Q and 2Q of 2020.
- Supply was concentrated in a handful of issuers, with the top five issuers accounting for almost a third of supply.
 - Outside of the top five issuers, only two of the roughly 50 issuers brought multi-tranche deals to market.
- Long bonds were in strong demand, which enticed many lower-quality, less-sponsored issuers to bring deals to the market.
 - The majority of issuance was rated BBB, accounting for almost 59% of long supply.



Ticker	Issuer Name	Maturity	Issue Date	Average Rating	Amount Issued (\$bn)	Yield at Issue (%)	Spread at Issue (bps)	Concession to Outstanding (bps)	Order Book (\$bn)	Oversubscription Level (times)
VZ	Verizon Communications Inc	20	3/11/2021	BBB+	3.8	3.40	120	5	13.4	3.6
		30	3/11/2021	BBB+	4.5	3.60	130	5	16.7	3.7
		40	3/11/2021	BBB+	3.5	3.75	145	5	11.5	3.3
ORCL	Oracle Corp	20	3/22/2021	BBB+	2.3	3.70	140	10	5.4	2.4
		30	3/22/2021	BBB+	3.3	3.96	155	15	7.5	2.3
		40	3/22/2021	BBB+	1.5	4.11	170	15	4.2	2.8
AAPL	Apple Inc	20	2/1/2021	AA+	1.5	2.39	72	2	5.4	3.6
		30	2/1/2021	AA+	3.0	2.68	82	5	5.8	1.9
		40	2/1/2021	AA+	1.8	2.81	95	5	4.3	2.5
MO	Altria Group Inc	20	2/1/2021	BBB	1.5	3.44	178	8	3.4	2.3
		30	2/1/2021	BBB	1.3	3.74	188	8	2.9	2.3
		40	2/1/2021	BBB	1.0	4.04	218	8	2.6	2.6
BABA	Alibaba Group Holdings Ltd	20	2/4/2021	A+	1.0	2.75	100	-10	6.8	6.8
		30	2/4/2021	A+	1.5	3.15	120	0	6.8	4.5
		40	2/4/2021	A+	1.0	3.25	130	0	5.5	5.5

IR+M DISCLOSURE STATEMENT

Disclosures:

Sources: Milliman, FTSE Russell (formerly Citigroup), Bloomberg Barclays, Bloomberg, JPMorgan, and Pension & Investments. All data in the above commentary is as of 3/31/21. 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%

