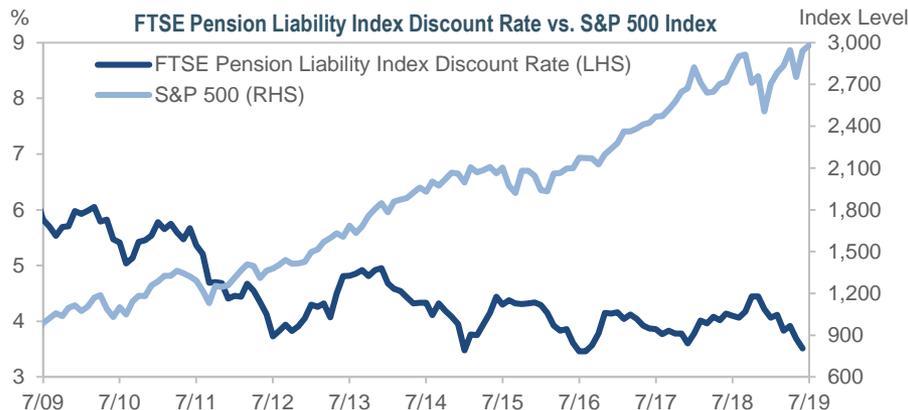


LDI Highlights

- Corporate pension funded status fell by 0.5% during July, closing the month at 87.9%.
 - A solid market tone supported equity markets, and the S&P 500 Index rose by over 1.3%.
 - Discount rates fell by 7bps to close the month at 3.44%, which offset solid equity market performance.
- Issuers priced over \$25 billion in long-duration supply, bringing the year-to-date total to \$183 billion – slightly higher than last year’s pace of \$181 billion.
- Long corporate spreads tightened 7bps to 153bps – a year-to-date tight – before closing the month at 154bps.
- Spread curves reached the flattest level since 2018, as the difference narrowed from 70bps to 69bps.

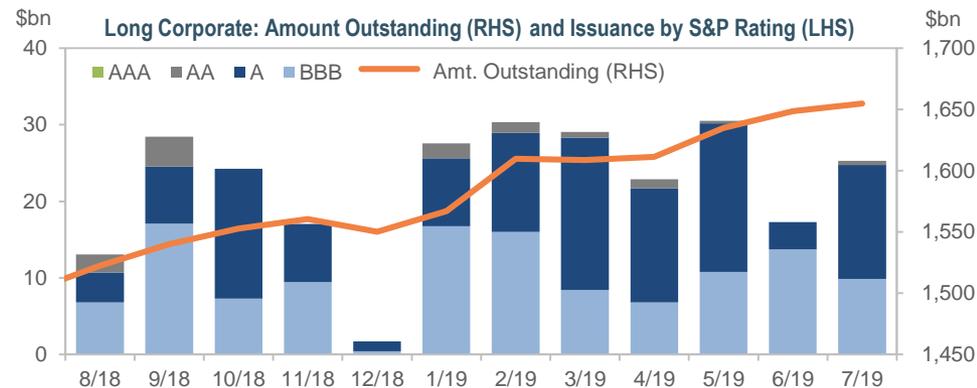
Rates Monitor	7/31/19	6/30/19	12/31/18
FTSE Pension Liability Discount Rate (%)	3.44	3.51	4.22
Bloom Barc Long Corporate Yield (%)	3.90	3.96	4.91
Bloom Barc Long Corporate A+ Yield (%)	3.50	3.56	4.40
Bloom Barc Long Corporate BBB Yield (%)	4.27	4.33	5.36
30 Year Swap Spread (bps)	-38	-31	-17



IR+M LDI Corner: Delay or Borrow to Pay?

- Discount rates have fallen by over 75bps year-to-date, causing some underfunded plans to potentially delay de-risking in anticipation of higher future rates.
- However, low yields could enable most sponsors to use the new issue market to fund pension contributions at rates lower than the PBGC variable-rate premium of 4.3%.
 - With the 10-year Treasury yield below 2%, and the average corporate spread at 125bps, issuing debt at 3.25% is an attractive source of borrowed funding.
 - For example, a large industrial company recently issued \$1 billion at an all-in yield of 3.1%
- For plan sponsors looking for ways to de-risk, we believe borrow-to-fund could be an attractive tool, especially if yields remain low. With rating agencies having a neutral to positive view on the activity, we anticipate this strategy to be increasingly used going forward.

Glidepath Monitor	7/31/19	6/30/19	12/31/18	12/31/15
Funded Status (%)	87.9	88.4	89.4	81.7
Long Corporate Spreads (bps)	154	160	200	227
Curve (Long Corp - Int. Corp) (bps)	69	70	69	88



Trailing 12 Month Long Corporate New Issuance (bn)				
AAA	AA	A	BBB	Total
\$0.0	\$12.5	\$131.8	\$123.2	\$267.5

Sources: Milliman (Historical numbers revised as of 3/31/19), FTSE Russell (formerly Citigroup), Bloomberg Barclays, Bloomberg, and JPMorgan

All data in the above commentary is as of 7/31/19. 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.