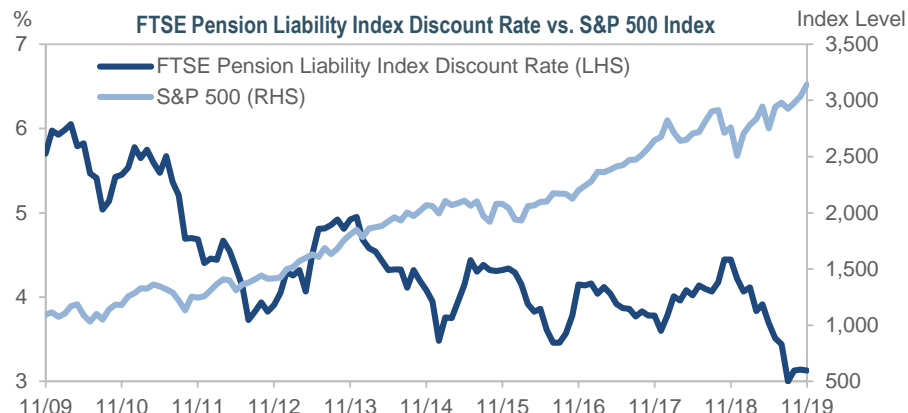


LDI Highlights

- Corporate pension funded status increased by 0.7% during November, closing the month at 86.8%.
 - Investors favored risk assets, and the S&P 500 Index rose by 3.4% to reach a new all-time high.
 - The discount rate increased by 5bps to close at 3.19%, which also benefited funded status.
- Issuance increased slightly during the month, as long-duration supply totaled almost \$24 billion.
- Long corporate investment grade spreads tightened 8bps to 151bps and reached the tightest level since mid-2018.
- The difference between long and intermediate corporate spreads narrowed by 3bps to 72bps.

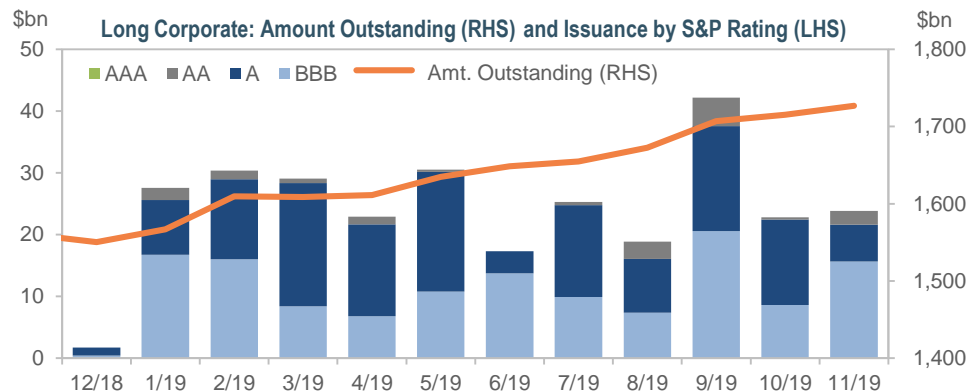
Rates Monitor	11/30/19	10/31/19	12/31/18
FTSE Pension Liability Discount Rate (%)	3.19	3.14	4.22
Bloom Barc Long Corporate Yield (%)	3.59	3.61	4.91
Bloom Barc Long Corporate A+ Yield (%)	3.20	3.21	4.40
Bloom Barc Long Corporate BBB Yield (%)	3.96	3.98	5.36
30 Year Swap Spread (bps)	-33	-40	-17



IR+M LDI Corner: Observations from our Corporate Trading Desk

- Issuance:** Long corporate issuance increased from 24% of total supply in 2018 to 27% in 2019, which extended the average maturity of the full Corporate Index by over 0.75 years.
- Low Coupons:** Seven AA-rated and A-rated issuers priced long corporate bonds with coupons below 3% in 2019, a good example of the low rate, tight spread environment.
- Maturities:** Year-to-date, companies issued over \$50 billion of 20-year maturity bonds, surpassing last year's record total of \$44 billion. Issuers also priced several other unique maturities such as 100-year, 60-year, 50-year and 40-year deals.
- Performance:** Despite entering the 11th year of the current credit cycle, the year-to-date long corporate excess and total return is on track to be the strongest since 2009 and 1995, respectively.
- If interested in learning about credit fundamentals, please read our recent mailer "[US Investment Grade Credit Market: 2020 Vision](#)" which is available on our website.

Glidepath Monitor	11/30/19	10/31/19	12/31/18	12/31/15
Funded Status (%)	86.8	86.1	89.4	81.7
Long Corporate Spreads (bps)	151	159	200	227
Curve (Long Corp - Int. Corp) (bps)	72	75	69	88



Trailing 12 Month Long Corporate New Issuance (bn)				
AAA	AA	A	BBB	Total
\$0.0	\$16.3	\$149.0	\$144.2	\$309.4

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 11/30/19. 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.