

LDI Highlights

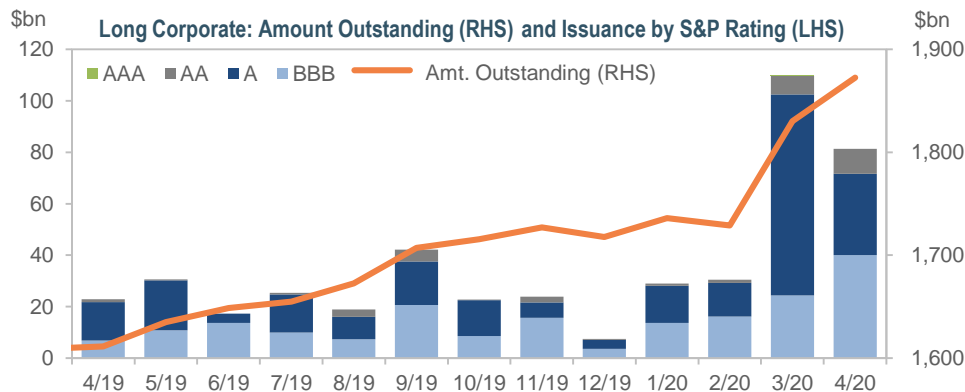
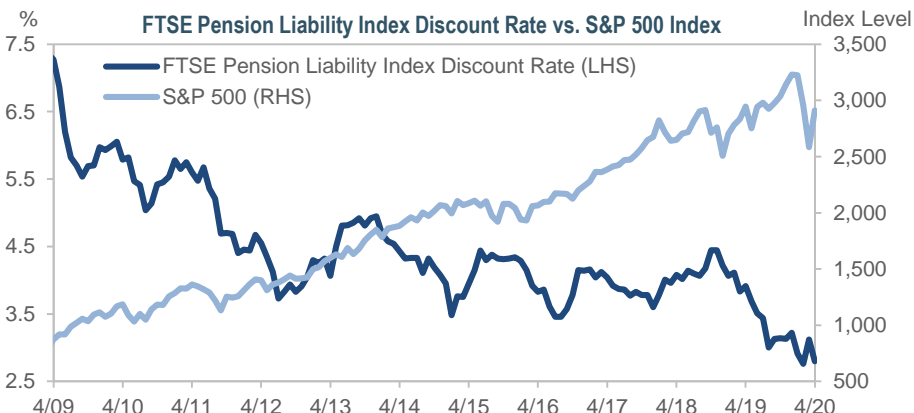
- Corporate pension funded status declined by 2.3% during April, closing the month at 84.0%.
 - Discount rates approached all-time lows, and fell by 32bps to 2.8%.
 - Growth assets rebounded, with equity prices rising by over 12% and corporates outperforming similar-duration Treasuries.
- Long-duration borrowers continued to issue debt in order to shore up liquidity, pricing over \$80 billion; lower-quality issuers were the primary borrowers, accounting for over 50% of supply – a reversal from March.
- Long corporate spreads tightened 42bps to 232bps – and over 125bps from the recent wides of 359bps – amid a risk-on tone.
- Credit curves steepened and term premiums increased, but remained relatively flat compared to longer-term averages, as sentiment improved.

Rates Monitor	4/30/20	3/31/20	12/31/19
FTSE Pension Liability Discount Rate (%)	2.80	3.12	3.22
Bloom Barc Long Corporate Yield (%)	3.39	3.87	3.60
Bloom Barc Long Corporate A+ Yield (%)	2.88	3.27	3.25
Bloom Barc Long Corporate BBB Yield (%)	3.96	4.60	3.94
30 Year Swap Spread (bps)	-44	-45	-30

IR+M LDI Corner: Tackling Downgrade Headwinds

- The investment-grade corporate market has experienced a flood of downgrades due to the combination of the coronavirus pandemic and oil price shock; new fallen angels have totaled over \$100 billion year-to-date.
- Downgrades (or even fear of downgrades) can result in LDI portfolio returns lagging the liability side, creating basis risk.
 - Corporate spreads can begin widening over twelve months prior to undergoing a downgrade, resulting in lower asset valuations; however, fallen angels have historically outperformed in the months following a downgrade.
 - Conversely, liability discount curves are downgrade and default immune – affected bonds drop out of indices used to calculate curves.
- In this unprecedented COVID-19-related downturn, IR+M's focus is on sectors and issuers that have clearer roads ahead, given their exposure to stronger end markets, lower leverage, and essentiality; examples include telecom, technology, and utilities.

Glidepath Monitor	4/30/20	3/31/20	12/31/19	12/31/15
Funded Status (%)	84.0	86.3	89.8	81.7
Long Corporate Spreads (bps)	232	274	136	227
Curve (Long Corp - Int. Corp) (bps)	47	3	66	88



Trailing 12 Month Long Corporate New Issuance (bn)				
AAA	AA	A	BBB	Total
\$0.2	\$30.2	\$224.1	\$184.2	\$438.7

Sources: Milliman (Historical numbers revised as of 4/30/19), FTSE Russell (formerly Citigroup), Bloomberg Barclays, Bloomberg, and JPMorgan. All data in the above commentary is as of 4/30/20. 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.