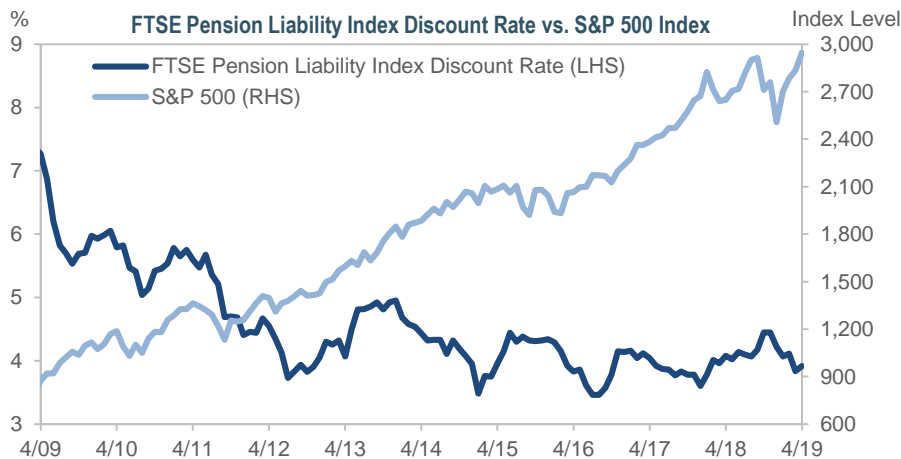


LDI Highlights

- Corporate pension funded status improved by 1.7% to end the month at 91.4%.
 - Discount rates rose by 8bps, as Treasury yields increased across the curve.
 - Also contributing to funded-status improvement was continued equity-market strength, as the S&P 500 Index returned 4%.
- Investment-grade issuers priced approximately \$23 billion in long-duration supply, which was a slight decline from March.
- Strong demand for corporate credit acted as a tailwind for spreads, which tightened by 14bps during the month.
- Spread curves flattened modestly, and the difference between long corporate and intermediate corporate spreads narrowed by 6bps.

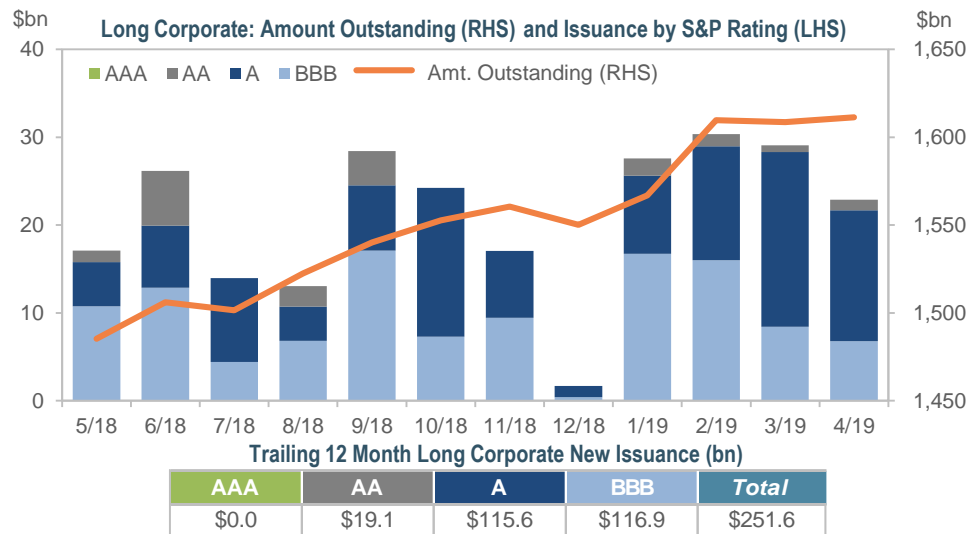
Rates Monitor	4/30/19	3/31/19	12/31/18
FTSE Pension Liability Discount Rate (%)	3.91	3.83	4.22
Bloom Barc Long Corporate Yield (%)	4.38	4.41	4.91
Bloom Barc Long Corporate A+ Yield (%)	3.98	3.96	4.40
Bloom Barc Long Corporate BBB Yield (%)	4.74	4.81	5.36
30 Year Swap Spread (bps)	-24	-24	-17



IR+M LDI Corner: Corporate Pension Plans Added to Bond Allocations in 2018

- Pensions & Investments released updated asset allocation data for US corporate pension plans indicating that plans increased allocations to fixed income by nearly 5% during 2018, to 40.6%.
- Plans saw funded-status improvements through the first three quarters of 2018 that were driven by both market movements and increased contributions on the back of tax reform and rising PBGC variable-rate premiums.
- These improvements prompted many plan sponsors to take de-risking action in advance of the fourth quarter of 2018, helping to reduce the negative impact of risk-market weakness at year end.
- While we saw a decline in LDI demand during the market slowdown in Q4 2018, we are again seeing renewed interest in LDI, as the market recovers and plan sponsors who experienced the volatility of the last 6 months look to better immunize their plans going forward.

Glidepath Monitor	4/30/19	3/31/19	12/31/18	12/31/15
Funded Status (%)	91.4	89.7	89.4	81.7
Long Corporate Spreads (bps)	159	173	200	227
Curve (Long Corp - Int. Corp) (bps)	73	79	69	88



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 4/30/19. 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.

Year-to-Date 2019 Corporate Issuance: Largest Long-Dated USD Investment Grade Deals

- As market volatility at the end of 2018 subsided, we saw a renewed appetite for long-duration credit, which persisted throughout the first quarter.
 - Long-end issuance comprised approximately 27% of total supply year-to-date, which was the highest proportion since 1Q18, when total supply was nearly 30% long duration. Issuers focused on refinancing, using proceeds of long-term deals to pay down near-term maturities.
- As we progressed into 2019, market dynamics became more issuer-friendly. New issue concessions, which were generally in the double-digit range for deals priced in January, fell into the negative to single-digit range for deals that priced later in February or March.

Ticker	Issuer Name	Maturity (yrs)	Issue Date	Average Rating	Amount Issued (\$bn)	Yield at Issue (%)	Spread at Issue (bps)	Concession to Outstanding (bps)	Order Book (\$bn)	Oversubscription Level (times)
ABIBB	Anheuser-Busch InBev Worldwide Inc	30	1/10/2019	BBB+	4.0	5.57	250	30	8.3	2.1x
		40	1/10/2019	BBB+	2.0	5.82	275	30	5.0	2.5x
		20	1/10/2019	BBB+	2.0	5.47	240	30	5.2	2.6x
MO	Altria Group	30	2/12/2019	BBB	2.5	5.97	295	25	8.6	3.4x
		20	2/12/2019	BBB	2.0	5.82	280	15	6.0	3.0x
		40	2/12/2019	BBB	0.5	6.22	320	15	4.4	8.8x
LLY	Eli Lilly & Co	30	2/20/2019	A	1.5	3.98	100	0	3.6	2.4x
		40	2/20/2019	A	1.0	4.18	120	5	2.8	2.8x
		20	2/20/2019	A	0.9	3.88	90	0	2.7	3.2x
FOXA	Fox Corp	30	1/15/2019	BBB	1.6	5.58	250	20	8.0	5.2x
		20	1/15/2019	BBB	1.3	5.48	240	20	5.6	4.5x
BAC	Bank of America Corp	31NC30	3/12/2019	A	2.8	4.33	135	5	5.7	2.1x
MRK	Merck & Co Inc	30	3/5/2019	AA-	1.5	4.08	100	5	3.3	2.2x
		20	3/5/2019	AA-	1.0	3.98	90	5	2.4	2.4x
PFE	Pfizer Inc	30	3/4/2019	AA-	1.3	4.10	100	5	2.8	2.2x
		20	3/4/2019	AA-	0.8	4.00	90	5	2.3	3.1x
ETP	Energy Transfer Operating LP	30	1/8/2019	BBB-	1.8	6.26	325	12	8.3	4.7x
MMC	Marsh & McLennan Cos Inc	30	1/8/2019	BBB+	1.3	4.91	190	15	3.5	2.8x
		20	1/8/2019	BBB+	0.5	4.76	175	15	2.0	4.0x
BSX	Boston Scientific Corp	30	2/21/2019	BBB-	1.0	4.74	170	0	4.2	4.2x
		20	2/21/2019	BBB-	0.8	4.59	155	-5	3.6	4.8x

Source: Bloomberg and JPMorgan

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