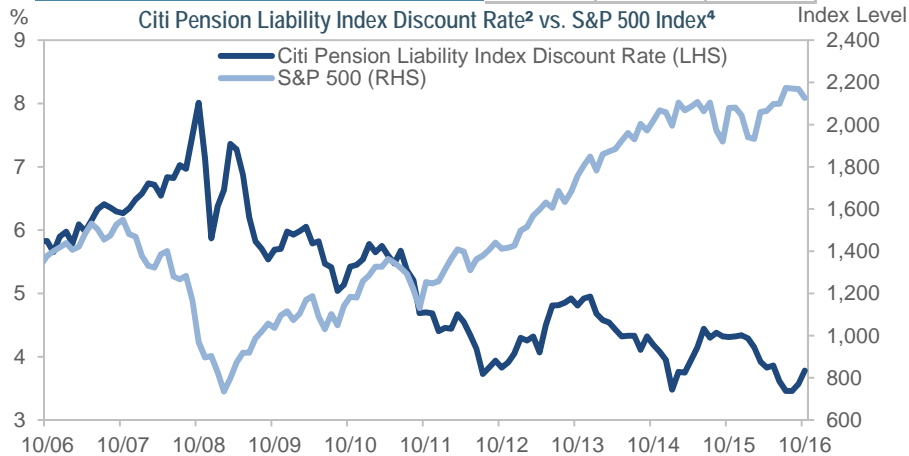


LDI Highlights

- Corporate pension funded status increased in consecutive months for the first time this year rising 1.0% to 77.3%.¹ Higher discount rates outweighed the impact of negative performance in equity markets.
 - Following an 11bps increase during September, discount rates rose again in October by a further 21bps,² despite long credit spreads tightening 7bps during the month.⁵
- In October, long BBB-rated corporate yields rose less than higher-rated corporates, likely helping many LDI hedging portfolios outperform pension liabilities during the month.
- Total long corporate issuance for October was down over 50% compared to the same month last year and the lowest it has been since April of this year.⁶ Reduced M&A activity and a slight rate sell-off in the long end of the curve were contributors.

Rates Monitor	10/31/16	9/30/16	12/31/15
Citigroup Pension Discount Rate ² (%)	3.78	3.57	4.34
Bloom Barc Long Credit Yield ³ (%)	4.22	4.04	5.02
Bloom Barc Long Corporate Yield ³ (%)	4.24	4.07	5.06
Bloom Barc Long BBB Corp Yield ³ (%)	4.65	4.50	5.60
30 Year Swap Rate ⁴ (%)	2.06	1.73	2.64
Long BBB Corp. Yield ³ – Citi Pension Discount Rate ² (bps)	87	93	126



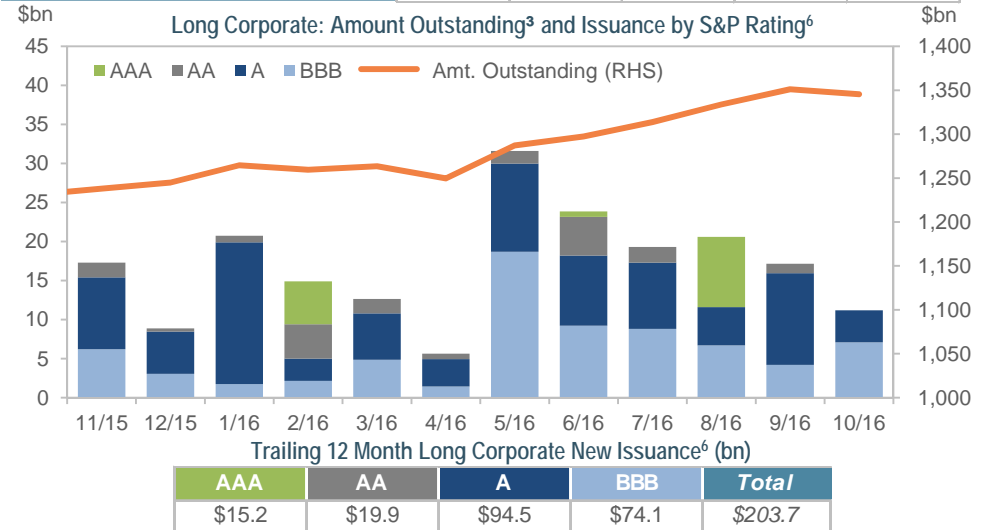
LDI MONITOR

October 31, 2016

IR+M LDI Corner: STRIPs - Zero in on Your Duration Target

- In the early stages of LDI implementation, it is common for plan sponsors to look for ways to make their liability hedging portfolio work harder relative to their liabilities while the growth asset portfolio attempts to close any funding gap.
- One method of achieving these results is to extend the duration of the hedging portfolio beyond that of the liabilities. This allows for an improved overall hedge ratio while not requiring a reduction in growth assets.
- US Treasury STRIPs can provide a straightforward, cost effective method to extend duration. A STRIPs benchmark containing only securities with maturities of greater than 25 years, has a duration of approximately 28 years.
- Including STRIPs in an LDI strategy toolkit may allow for increased flexibility in managing the liability hedging portfolio as sponsors progress along their LDI journey. We believe the ease and low cost of implementation make STRIPs a valuable resource for LDI investors.

Glidepath Monitor	10/31/16	9/30/16	12/31/15	10/31/15	10/31/13
Funded Status ¹ (%)	77.3	76.3	81.7	82.7	86.3
Long Credit Rates ⁵ (%)	4.22	4.04	5.02	4.86	5.09
Long Credit Spreads ⁵ (bps)	188	195	225	218	180
Curve ³ (Long Cred - Int. Cred) (bps)	195	188	210	222	284
Curve ³ (Long G/C - Agg) (bps)	141	136	161	170	226



¹Milliman; ²Citigroup; ³Bloomberg Barclays; ⁴Bloomberg; ⁵Long rates and long spreads represented by Bloomberg Barclays Long Credit Index yield and spread; ⁶JP Morgan
 All data in the above commentary is as of 10/31/16. 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.