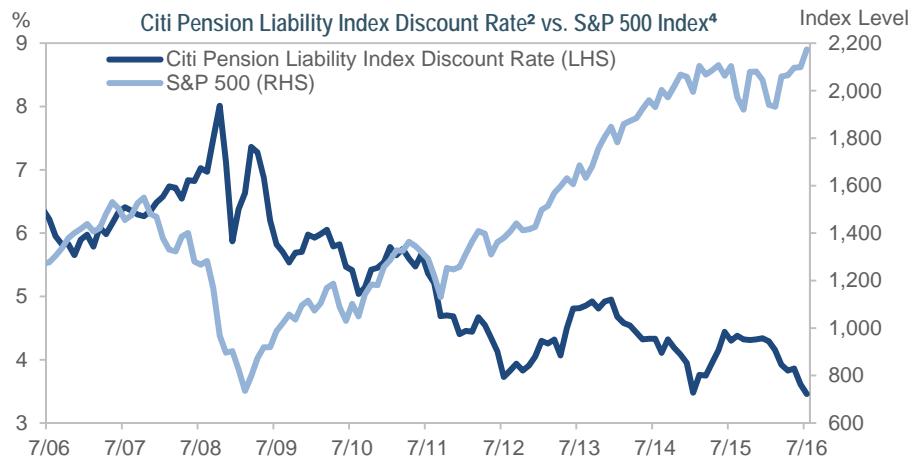


LDI Highlights

- Corporate pension funded status remained flat during July at 75.7%, as strong asset returns offset the decline in discount rates.<sup>1</sup>
  - The S&P 500 Index returned 3.56% during July, as many companies reported earnings that outpaced estimates.<sup>4</sup>
  - Long AA-rated corporate bond yields declined by 16bps during July, following the decline in long Treasury yields.<sup>3</sup>
- The Citigroup Pension Discount Rate dropped to a historic low of 3.46%, as long corporate yields were driven lower by a global reach for yield.<sup>2</sup>
- Year-to-date long corporate issuance is down roughly 19% compared to the same period last year, despite a recent uptick over the last few months.<sup>6</sup>

Rates Monitor	7/31/16	6/30/16	12/31/15
Citigroup Pension Discount Rate <sup>2</sup> (%)	3.46	3.61	4.34
Barclays Long Credit Yield <sup>3</sup> (%)	3.98	4.16	5.02
Barclays Long Corporate Yield <sup>3</sup> (%)	4.00	4.20	5.06
Barclays Long BBB Corporate Yield <sup>3</sup> (%)	4.47	4.69	5.60
30 Year Swap Rate <sup>4</sup> (%)	1.74	1.86	2.64
Long BBB Corp. Yield <sup>3</sup> – Citi Pension Discount Rate <sup>2</sup> (bps)	101	108	126



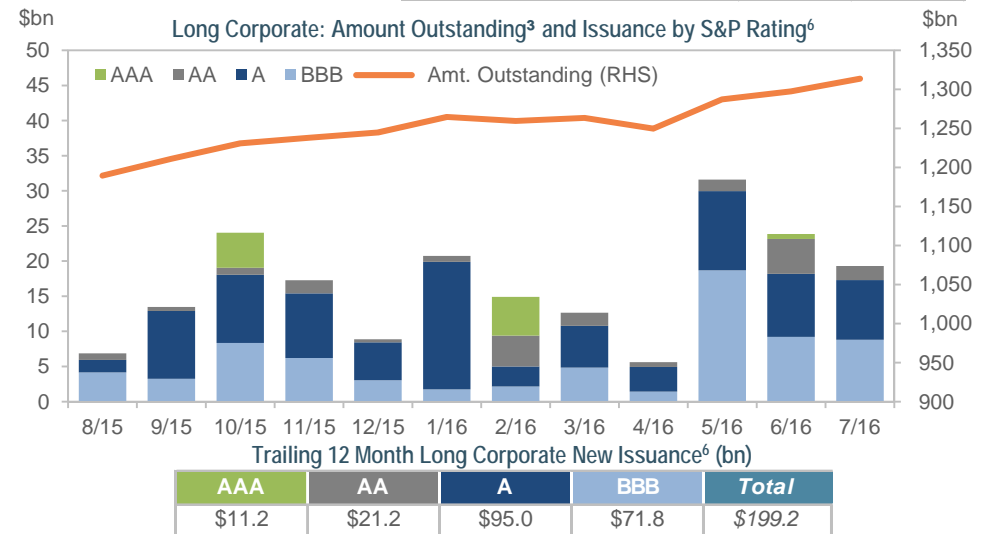
LDI MONITOR

July 31, 2016

IR+M LDI Corner: Do your liabilities have you on the run?

- Many plan sponsors will add to their fixed income portfolios as future de-risking steps are taken. As a growing piece of their allocation, sponsors will likely place an emphasis on long-term hedging performance as opposed to short-term liquidity needs.
- Plan sponsors may be able to capitalize on their longer investment horizon by seeking out areas of the market where investors are compensated for being providers of liquidity.
- For example, short-term tactical investors will pay for the liquidity of on-the-run bonds which trade more frequently. However, off-the-run bonds can often be sourced at compelling valuations, providing excess carry over the long-term.
- The liquidity needs of plan sponsors will change as they move along their LDI journey. We believe recognizing the unique and longer term profile of defined benefit plan investments is key to taking advantage of opportunities as the market presents them.

Glidepath Monitor	7/31/16	6/30/16	12/31/15	7/31/15	7/31/13
Funded Status <sup>1</sup> (%)	75.7	75.7	81.7	84.3	86.0
Long Credit Rates <sup>5</sup> (%)	3.98	4.16	5.02	4.82	5.13
Long Credit Spreads <sup>5</sup> (bps)	206	215	225	213	181
Curve <sup>3</sup> (Long Cred - Int. Cred) (bps)	190	200	210	224	273
Curve <sup>3</sup> (Long G/C - Agg) (bps)	135	145	161	172	216



<sup>1</sup>Milliman; <sup>2</sup>Citigroup; <sup>3</sup>Barclays; <sup>4</sup>Bloomberg; <sup>5</sup>Long rates and long spreads represented by Barclays Long Credit Index yield and spread; <sup>6</sup>J.P. Morgan

All data in the above commentary is as of 7/31/16. 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.