IISL
India Index Services & Products Ltd.

NIFTY 50

NIFTY AAA Corporate Bond Indices

Seeking to exemplify the risk-return dynamics of

AAA rated corporate bonds

March 2017

Introduction:

The Indian fixed income market has traditionally been dominated by government securities, both in terms of primary market issuances and secondary market trades – claiming more than 75 percent of market share. Within the residual 25 percent market share, better rated corporate issuers (*read AAA rated*) claim more than half the pie in terms of issuance – while the share in the secondary market trades stands at an eye-brow raising 80 percent (Source – RBI, SEBI). Despite the absolute issuance of corporate bonds growing at a healthy pace from Rs 4.33 trillion in 2014 to around Rs 6.7 trillion in 2016, the skew towards government securities continues to be prominent. Blame 'risk aversion', 'excessive dependence on bank funding – specifically for lower credits' or 'stringent regulatory investment norms' – the fact is that AAA rated corporate bonds claim a lion's share in the corporate bond segment of the capital market in India.

India Index Services & Products Ltd (IISL), an NSE group company, has today launched a series of corporate bond indices, aiming to capture the risk-return dynamics of this significant segment of the Indian corporate bond market. The indices will act as benchmarks for asset managers for their corporate bond funds. The indices will also be available for licensing for launch of financial products such as exchange traded fund, index funds and structured products.

About the NIFTY AAA Corporate Bond index series

The NIFTY AAA Corporate Bond Index series comprises five indices across different maturities and one composite index. Each of the 5 maturity-based indices represents performance of liquid corporate bonds falling in specific residual maturity bucket. The composite index, on the other hand, covers all 5 distinct maturity buckets and hence seeks to represents the dynamics of the entire yield curve. All NIFTY indices follow a well-defined, market relevant and rules-based framework that helps IISL provide transparent, replicable and market representative indices.

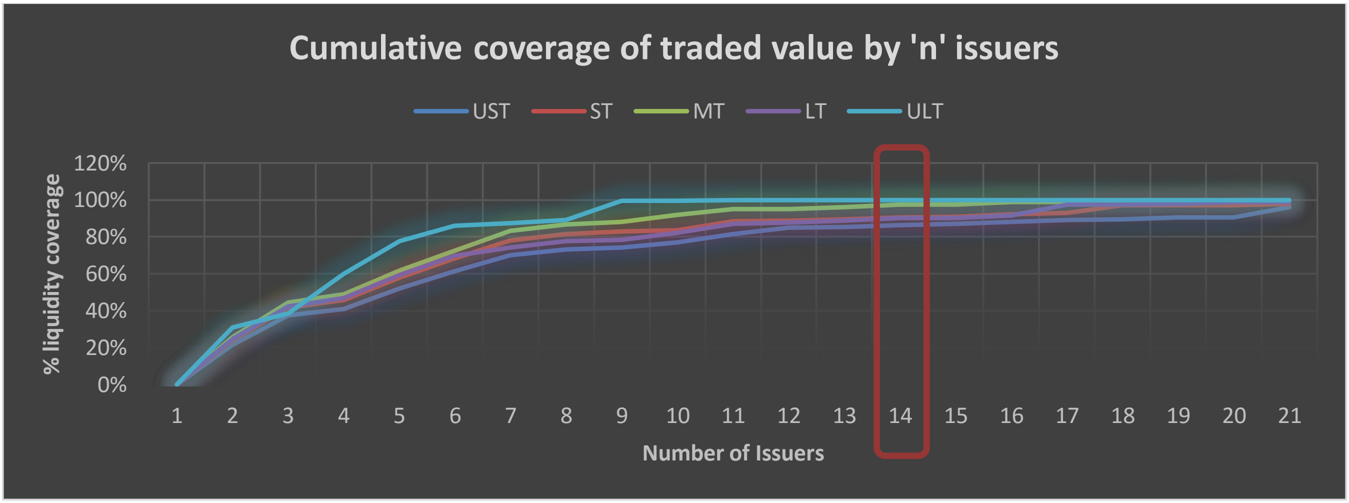
The NIFTY AAA corporate bond index series includes the following specific indices

Sr. no.	Index name	Residual maturity range
1	NIFTY AAA Ultra Short-Term Corporate Bond Index	0.5 to 2 Years
2	NIFTY AAA Short-Term Corporate Bond Index	2 to 3 Years
3	NIFTY AAA Medium-Term Corporate Bond Index	3 to 5 Years
4	NIFTY AAA Long-Term Corporate Bond Index	5 to 10 Years
5	NIFTY AAA Ultra Long-Term Corporate Bond Index	>10 Years
6	NIFTY AAA Corporate Bond Index	All maturities

The base date for all the indices is 31-Dec-2013 and base value is 1000. The index composition is reviewed on a quarterly basis. The Indices are calculated on an end-of-day basis.

The NIFTY AAA Corporate Bond index series has 'better market coverage' and a good mix of 'highly liquid' bonds

The efficacy of any index portfolio is demonstrated by two key attributes – 'high liquidity' and 'better market coverage' – there being a natural trade-off between the two, as 'higher liquidity' would mean including only those bonds which are very liquid (which are typically very few in number) whereas 'higher coverage' would warrant including as many bonds as practical (including the illiquid ones as well).



The graph above shows the cumulative percent coverage of market liquidity within each maturity bucket (based on bond trades during calendar year 2016) as we increase the number of issuers in the index portfolio. As can be observed, the secondary market trading in AAA rated corporate bonds was majorly restricted to few large & more frequent issuers followed by a long tail of a high number of small & infrequent issuers. The NIFTY AAA Corporate Bond Index series seeks to strike a balance between the two key attributes by including up to 14 most liquid issuers and bonds within each maturity bucket. 14 most liquid issuers on an average typically cover a healthy 93 percent of secondary market trades value. Further increasing the number of issuers in the index portfolio, would definitely increase the market coverage, however at the cost of including more illiquid bonds and issuers into the index. The coverage of these top 14 issuers, however, varies for different maturity buckets ranging from 87 percent for ultra-short term bucket to 99 percent for ultra-long term bucket. Notably, the ultra-short-term bucket, is typically crowded with a high number of smaller and less frequent issuers and hence a very well-distributed pattern of secondary liquidity whereas the ultra-long term bucket accommodates a few big and more frequent issuers with concentrated weights in the index. The NIFTY AAA Corporate Bond Index series applies a cap of 10 percent on the maximum weight for any single issuer within an index and thereby creates a well-diversified bond portfolio for each maturity bucket.

Thanks to its unique threshold mechanism, the indices have high portfolio stability and lower churn thereby easing replication and lowering cost:

Fully replicating an index has been a universal and perennial challenge, as it has its own operational limitations due to more generic issue of illiquid secondary markets which makes rebalancing of portfolios difficult. The NIFTY AAA corporate bond index series tries to address this issue by restricting the overall churn in the portfolio. This has been achieved by applying stringent buffers which allow only very liquid issuers and bonds to replace existing issuer and bonds in the index. The result – High stability in the pool of issuers that the indices represent and lower portfolio churning. The below table shows the list of 20 most popular issuers that have been part of the NIFTY AAA Corporate Bond Index since its inception, along with their average weights in the index and percent of times they have been included in the index. As can be observed, top 9 issuers, claiming ~68% of the total weight in the index, have always been present in the index. Hence, from an index replication point of view, about 68% of the factor exposures of the index, can easily be built into a portfolio by just sticking to these 9 issuers across time.

List of 20 most popular issuers in NIFTY AAA Corporate Bond Index

Sr No	Issuer Name	Average Weight (%)	Cumulative Weight (%)	% Presence in Index (%)
1	POWER FINANCE CORPORATION LIMITED	13.0%	13.0%	100%
2	RURAL ELECTRIFICATION CORPORATION LIMITED	12.0%	25.1%	100%
3	LIC HOUSING FINANCE LIMITED	9.5%	34.6%	100%
4	HOUSING DEVELOPMENT FINANCE CORPORATION LIMITED	9.3%	43.9%	100%
5	POWER GRID CORPORATION OF INDIA LIMITED	7.9%	51.7%	100%
6	EXPORT IMPORT BANK OF INDIA	6.7%	58.5%	100%
7	NATIONAL BANK FOR AGRICULTURAL AND RURAL DEVELOPMENT	5.1%	63.6%	100%
8	FOOD CORPORATION OF INDIA	2.4%	66.0%	100%
9	INDIAN RAILWAY FINANCE CORPORATION LIMITED	2.1%	68.1%	**100%**
10	NUCLEAR POWER CORPORATION OF INDIA LIMITED	1.1%	69.2%	92%
11	RELIANCE JIO INFOCOMM LIMITED	2.8%	72.0%	85%
12	TATA SONS LIMITED	1.7%	73.7%	85%
13	MAHANAGAR TELEPHONE NIGAM LIMITED	1.5%	75.2%	85%
14	HDB FINANCIAL SERVICES LIMITED	0.7%	75.9%	85%
15	DEWAN HOUSING FINANCE CORPORATION LIMITED	2.0%	77.9%	77%
16	RELIANCE UTILITIES AND POWER LIMITED	0.9%	78.8%	77%
17	DAMODAR VALLEY CORPORATION	0.5%	79.3%	77%
18	RELIANCE PORTS & TERMINALS LIMITED	1.2%	80.5%	69%
19	NHPC LIMITED	0.7%	81.2%	69%
20	RELIANCE CAPITAL LIMITED	0.4%	81.6%	69%

The Index series, through its performance, very well reflects the recent easing interest rate regime – emphasizing the strong *duration-play in fixed income portfolios*

Performance analysis of AAA rated corporate bonds across maturities

Maturity Buckets	All Maturities	Ultra Short-term (0.5 to 2 Years)	Short-term (2 to 3 Years)	Medium-term (3 to 5 Years)	Long-term (5 to 10 Years)	Ultra long-term (>10 Years)
Representative Index	NIFTY AAA Corporate Bond Index	NIFTY AAA Ultra Short-Term Corporate Bond Index	NIFTY AAA Short-Term Corporate Bond Index	NIFTY AAA Medium-Term Corporate Bond Index	NIFTY AAA Long-Term Corporate Bond Index	NIFTY AAA Ultra Long-Term Corporate Bond Index
Modified Duration Range	2.98-4.36	0.76-1.39	1.74-2.39	2.71-3.73	5.21-6.20	6.78-7.98
Returns						
Since Inception	10.8%	9.3%	10.1%	11.1%	12.2%	12.6%
3 years	11.0%	9.4%	10.2%	11.3%	12.6%	12.9%
2 years	9.2%	8.8%	9.2%	9.7%	9.6%	8.8%
1 year	11.2%	9.1%	10.8%	11.3%	13.5%	13.0%
6 Month	3.6%	4.1%	4.3%	3.7%	3.3%	1.6%
Year 2014	13.29%	10.38%	11.62%	13.41%	16.30%	18.99%
Year 2015	9.30%	8.85%	9.10%	9.68%	9.56%	8.34%
Year 2016	11.02%	8.88%	10.27%	11.61%	12.68%	14.51%

As on Feb 28, 2017

Since the inception of the index, yields for AAA rated corporate bonds have eased by ~200 bps. Easing in yields boosts corporate bond portfolio returns due to the generic inverse relation between bond prices and market yields. The Nifty AAA Corporate Bond Index reflects this easing of yields by returning a strong CAGR of 10.8 percent since inception. The rise in bond prices (due to fall in market yields) gets further accentuated based on *Modified Duration* of the index portfolio. (*Modified Duration* measures the percent change in the bond price for a one percent change in market yield). Higher the maturity of the bond portfolio, higher the *modified duration* and higher will be the percent change in the bond prices for a given fall in market yields. As can be seen in the table above, higher *modified duration* index portfolios (represented by long-term and ultra-long-term index variants) have returned a staggering CAGR of 12.2 and 12.6 percent respectively (since inception) as compared to lower modified duration portfolios (represented by ultra-short term and short-term index variants) which have returned a CAGR of 9.3 percent and 10.1 percent respectively.

Calendar Years 2014 and 2016 specifically witnessed significant easing in yields of around 109 bps and 79 bps respectively in AAA rated corporate bonds. The NIFTY AAA Corporate Bond Index correspondingly spiked up by ~13.29 percent and 11.02 percent respectively during these years. For each of these 2 years, the higher *modified duration* indices significantly outperformed the lower *modified duration* indices by an astounding 570 bps (for year 2014) and 349 bps (for year 2016) - thereby reflecting the strong duration play in fixed income portfolios.

Calendar year 2015, on the other hand, witnessed a trend of almost stable market yields (a negligible easing of 17 bps). The NIFTY AAA Corporate Bond Index, during this year, delivered a middling 9.30 percent, with all maturity-based indices delivering comparable returns in a tight range of 8.34 to 9.68 percent – suggesting an insignificant role played by varying *modified duration* in an almost stable interest regime.

Signing off.....

The NIFTY AAA Corporate Bond Index series, being total return index variants (capturing price return and interest accruals), seek to capture all risk & return sources that are typically observed in a high-rated credit portfolio. The indices are expected to act as benchmarks for asset managers looking for an effective metric that measures the risk-return dynamics of the corporate bonds market. Through its robust construction methodology including the unique threshold mechanism, better market coverage, high portfolio stability (low churn) and high liquidity, the indices seek to address major portfolio replication challenges and hence are expected to be reference indices to be tracked by passive funds in the form of Exchange Traded Funds (ETFs), Index funds and structured products.

For information on Index methodology and factsheet, please visit us at www.nseindia.com

About India Index Services & Products Ltd. (IISL):

India Index Services & Products Ltd. (IISL), a NSE group company, was setup in May 1998 to provide a variety of indices and index related services for the capital markets. IISL is India's first specialised company focused upon the index as a core product. IISL maintains more than 100 equity indices comprising broad-based benchmark indices, sectoral indices and customised indices. IISL also maintains fixed income indices based on Government of India bonds. Many investment and risk management products based on IISL indices have been developed in the recent past, within India and abroad. These include index based derivatives traded on NSE, Singapore Exchange Ltd. (SGX), Chicago Mercantile Exchange Inc. (CME) and Osaka Exchange Inc. (OSE) and a number of index funds and exchange traded funds. The flagship 'Nifty 50' index is widely tracked and traded as the benchmark for Indian Capital Markets.

Contact Details

Analytical contact

Aman Singhania, CFA, FRM

Head – Products (IISL)

+91-22-26598214

asinghania@nse.co.in

Business Development contact

Rohit Kumar, FRM

Chief Manager – Business Development

+91-22- 26598386

rohitk@nse.co.in

Contact:
Email: iisl@nse.co.in
Tel: +91 22 26598386
Address: Exchange Plaza, Bandra Kurla Complex,
Bandra (East), Mumbai– 400 051(India)