

# **Seminar Name: Seminar on Current Issues in Retirement Benefits**

**Venue: Hotel Sea Princess, Juhu,  
Mumbai**

**Date: 29th November, 2018**

## **Presentation Title**

**Where are we heading for bond yields and  
corporate bonds**

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**Designation: Deputy CEO, Fixed Income Money Market And  
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**Institute of Actuaries of India**

# Par-Yield 26<sup>th</sup> Nov, 2018

Tenor (Year)	Par- Yield %		Tenor (Year)	Par- Yield %
1	7.43		16	8.11
2	7.48		17	8.11
3	7.54		18	8.11
4	7.64		19	8.11
5	7.72		20	8.11
6	7.76		21	8.12
7	7.84		22	8.13
8	7.87		23	8.14
9	7.87		24	8.14
10	7.94		25	8.15
11	8.00		26	8.15
12	7.92		27	8.16
13	7.90		28	8.16
14	8.05		29	8.16
15	8.06		30	8.16

# ZCYC-Yield 26<sup>th</sup> Nov,2018

Tenor (Year)	Zero Coupon %		Tenor (Year)	Zero Coupon %
1	7.44		16	8.28
2	7.48		17	8.28
3	7.55		18	8.26
4	7.66		19	8.26
5	7.75		20	8.26
6	7.79		21	8.27
7	7.89		22	8.28
8	7.93		23	8.30
9	7.92		24	8.31
10	8.01		25	8.33
11	8.09		26	8.34
12	7.96		27	8.35
13	7.93		28	8.35
14	8.19		29	8.35
15	8.20		30	8.35

# Discounting Factor

Tenor (Year)	Zero Coupon	Discounting Factor		Tenor (Year)	Zero Coupon
1	7.43	0.93		16	8.11
2	7.48	0.87		17	8.11
3	7.54	0.80		18	8.11
4	7.64	0.74		19	8.11
5	7.72	0.69		20	8.11
6	7.76	0.64		21	8.12
7	7.84	0.59		22	8.13
8	7.87	0.54		23	8.14
9	7.87	0.50		24	8.14
10	7.94	0.46	6.77	25	8.15
11	8.00	0.42		26	8.15
12	7.92	0.40		27	8.16
13	7.90	0.37		28	8.16
14	8.05	0.33		29	8.16
15	8.06	0.31	8.60	30	8.16

# ZCYC-Yield to Par-Yield

<b>Par-yield</b>	<u>1-Discount factor of ZCYC of required tenor</u>		
	Sum of Discount factors of ZCYC of all the tenors		
<b>10 yr par-yield</b>			
	1-df of 10 yr zcyc .....( A)		
	$\sum$ df of ZCYC 1 to 10 Years .....( B)		
<b>10 yr par-yield</b>	A/B		
<b>A</b>	1-0.4628 = 0.537165022		
<b>B</b>	6.767971659		
<b>10 yr par-yield (A/B)</b>	<b>7.94 %</b>		
<b>15 yr par-yield</b>			
	1-df of 15 yr zcyc = .....(A)		
	$\sum$ df of ZCYC 1 to 15 Years .....( B)		
<b>15 yr par-yield</b>	A/B		
<b>A</b>	1-0.3068 = 0.693242178		
<b>B</b>	8.60103569		
<b>15 yr par-yield (A/B)</b>	<b>8.06 %</b>		

# 2013 to 2018 Inflation



Institute of Actuaries of India

Month	Current Month	Inflation Y-o-Y	Annualised growth	Real interest	Total int Exp(zero coupon)	Actual zero coupon 01.01.2013
JAN-2013	104.6					
FEB-2013	105.3					
MAR-2013	105.5					
APR-2013	106.1					
MAY-2013	106.9					
JUN-2013	109.3					
JUL-2013	111.0					
AUG-2013	112.4					
SEP-2013	113.7					
OCT-2013	114.8					
NOV-2013	116.3					
DEC-2013	114.5					
JAN-2014	113.6	8.60	8.60	2.00	10.78	8.20
FEB-2014	113.6	7.88				
MAR-2014	114.2	8.25				
APR-2014	115.1	8.48				
MAY-2014	115.8	8.33				
JUN-2014	116.7	6.77				
JUL-2014	119.2	7.39				
AUG-2014	120.3	7.03				
SEP-2014	120.1	5.63				
OCT-2014	120.1	4.62				
NOV-2014	120.1	3.27				
DEC-2014	119.4	4.28				

# 2013 to 2018 Inflation



Institute of Actuaries of India

Month	Current Month	Inflation Y-o-Y	Annualised growth	Real interest	Total int Exp(zero coupon)	Actual zero coupon 01.01.2013
JAN-2015	119.5	5.19	6.89	2.00	9.02	8.08
FEB-2015	119.7	5.37				
MAR-2015	120.2	5.25				
APR-2015	120.7	4.87				
MAY-2015	121.6	5.01				
JUN-2015	123.0	5.40				
JUL-2015	123.6	3.69				
AUG-2015	124.8	3.74				
SEP-2015	125.4	4.41				
OCT-2015	126.1	5.00				
NOV-2015	126.6	5.41				
DEC-2015	126.1	5.61				
JAN-2016	126.3	5.69	6.49	2.00	8.62	8.06
FEB-2016	126.0	5.26				
MAR-2016	126.0	4.83				
APR-2016	127.3	5.47				
MAY-2016	128.6	5.76				
JUN-2016	130.1	5.77				
JUL-2016	131.1	6.07				
AUG-2016	131.1	5.05				
SEP-2016	130.9	4.39				
OCT-2016	131.4	4.20				
NOV-2016	131.2	3.63				
DEC-2016	130.4	3.41				

# 2013 to 2018 Inflation



Month	Current Month	Inflation Y-o-Y	Annualised growth	Real interest	Total int Exp (zero coupon)	Actual zero coupon 01.01.2013
JAN-2017	130.3	3.17	5.65	2.00	7.76	8.12
FEB-2017	130.6	3.65				
MAR-2017	130.9	3.89				
APR-2017	131.1	2.99				
MAY-2017	131.4	2.18				
JUN-2017	132.0	1.46				
JUL-2017	134.2	2.36				
AUG-2017	135.4	3.28				
SEP-2017	135.2	3.28				
OCT-2017	136.1	3.58				
NOV-2017	137.6	4.88				
DEC-2017	137.2	5.21				
JAN-2018	136.9	5.07	5.53	2.00	7.64	8.21
FEB-2018	136.4	4.44				
MAR-2018	136.5	4.28				
APR-2018	137.1	4.58				
MAY-2018	137.8	4.87				
JUN-2018	138.5	4.92				
JUL-2018	139.8	4.17				
AUG-2018	140.4	3.69				
SEP-2018	140.2	3.70				



# Expected Inflation



<b>Month</b>	<b>Current Month</b>	<b>Exp. Inflation Y-o-Y</b>	<b>Annualised growth</b>	<b>Real interest</b>	<b>Total int Exp(zero coupon)</b>	<b>Actual zero coupon 28.09.2018</b>
SEP-2019	148.2	5.71	5.71	2.00	7.71	7.82
SEP-2020	157.5	6.25	5.98	2.00	7.98	8.10
SEP-2021	167.1	6.12	6.02	2.00	8.02	8.14
SEP-2022	177.3	6.13	6.05	2.00	8.05	8.17
SEP-2023	189.2	6.67	6.17	2.00	8.17	8.30

# Deficit

<b>Fiscal Deficit</b>	
<b>Year</b>	<b>% of GDP</b>
2014-15	4.1
2015-16	3.9
2016-17	3.5
2017-18	3.5

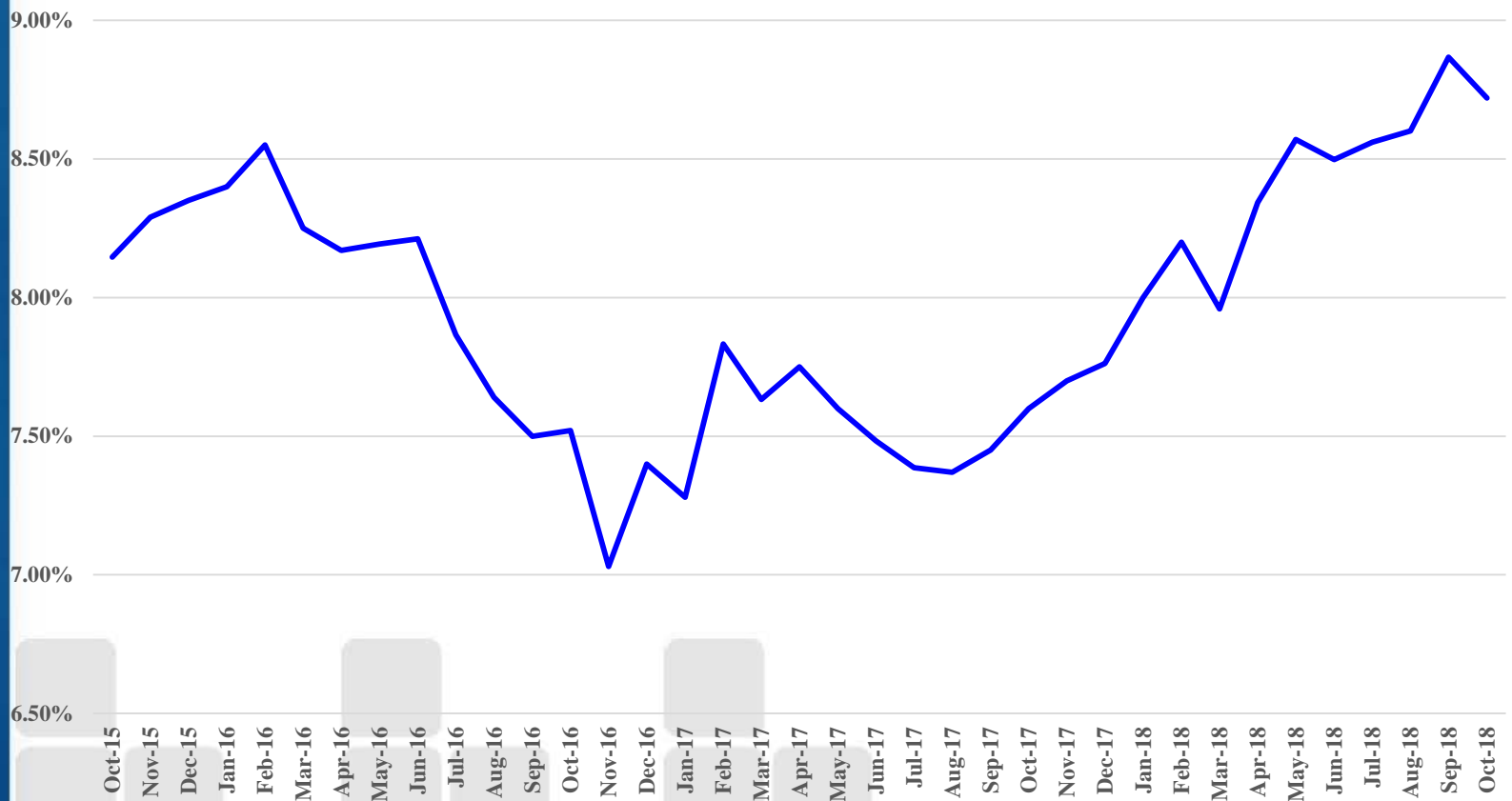
<b>Budget Deficit</b>	
<b>Year</b>	<b>% of GDP</b>
2014-15	-4.1
2015-16	-3.89
2016-17	-3.52
2017-18	-3.53

6.67 Trillion of GDP of 191 Trillion

# Movement of AAA Corporate Bonds

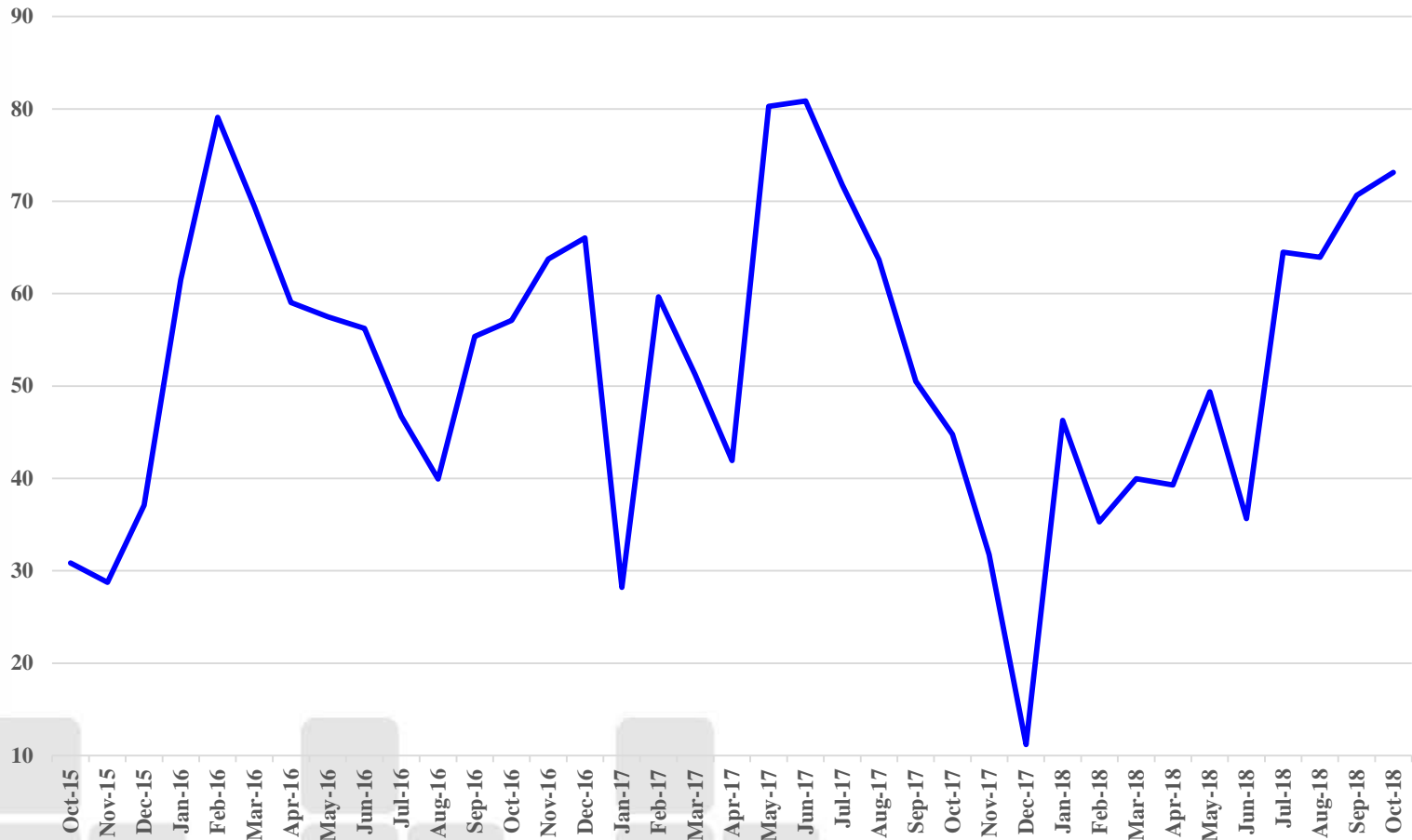


10 Year AAA Yields



# PSU, FIs & Banks – AAA 10 year

10 Year AAA Spreads over 10 year G Sec



# Turnover in government securities market

(FACE VALUE) (Rupees Billion)				
Month	Amount		Month	Amount
Jan-17	20834		Jan-18	13706
Feb-17	15370		Feb-18	11556
Mar-17	15101		Mar-18	12710
Apr-17	12994		Apr-18	4357
May-17	15245		May-18	8365
Jun-17	25024		Jun-18	13415
Jul-17	22310		Jul-18	10352
Aug-17	13777		Aug-18	13032
Sep-17	20932		Sep-18	13325
Oct-17	10628		Oct-18	11656
Nov-17	17597			
Dec-17	18411			
<b>Total</b>	<b>208225</b>			<b>112475</b>
<b>Monthly avg</b>	<b>17352</b>			<b>11248</b>
<b>Daily Avg</b>	<b>868</b>			<b>562</b>

# Corporate Bond Turnover

Data for 2016-17				
	BSE	NSE	MCX-SX	Grand Total
Date	No. of Trades*	No. of Trades*	No. of Trades*	No. of Trades*
<a href="#">Apr-16</a>	1019	3864	0	4883
<a href="#">May-16</a>	1285	3924	0	5209
<a href="#">Jun-16</a>	1438	4270	0	5708
<a href="#">Jul-16</a>	1254	4363	0	5617
<a href="#">Aug-16</a>	1364	4623	0	5987
<a href="#">Sep-16</a>	1650	5295	0	6945
<a href="#">Oct-16</a>	1105	4187	0	5292
<a href="#">Nov-16</a>	1291	4191	0	5482
<a href="#">Dec-16</a>	1330	4627	0	5957
<a href="#">Jan-17</a>	1490	4686	0	6176
<a href="#">Feb-17</a>	1202	3876	0	5078
<a href="#">Mar-17</a>	2202	6908	0	9110
Total	16330	54814	0	71444

# Corporate Bond Turnover



Data for 2017-18				
	BSE	NSE	MCX-SX	Grand Total
Date	Amount (Rs. cr)*	Amount (Rs. cr)*	Amount (Rs. cr)*	Amount (Rs. cr)*
<u>Apr-17</u>	14430	92352	0	106782
<u>May-17</u>	13273	79309	0	92582
<u>Jun-17</u>	14700	118961	0	133661
<u>Jul-17</u>	14175	106170	0	120345
<u>Aug-17</u>	14057	96396	0	110454
<u>Sep-17</u>	15165	104346	0	119512
<u>Oct-17</u>	10557	87220	0	97777
<u>Nov-17</u>	15767	101528	0.22	117295
<u>Dec-17</u>	22187	93688	0	115874
<u>Jan-18</u>	22712	83275	0	105987
<u>Feb-18</u>	21294	74745	0	96039
<u>Mar-18</u>	32290	123338	0	155628
<b>Total</b>	<b>210607</b>	<b>1161329</b>	<b>0.22</b>	<b>1371936</b>

# Details of central Government market borrowings



Amount in Rupees Billion				
Date of Auction	Accepted Amount	Accepted Amount	Accepted Amount	Accepted Amount
	2014-15	2015-16	2016-17	2017-18
March	593	21	70	548
February	431	172	220	110
January	690	686	1068	520
December	420	253	560	317
November	580	450	588	953
October	450	750	300	440
September	360	420	430	480
August	566	560	590	600
July	580	730	600	600
June	450	498	600	600
May	840	613	450	600
April	671	640	600	598
Total	6631	5793	6076	6366



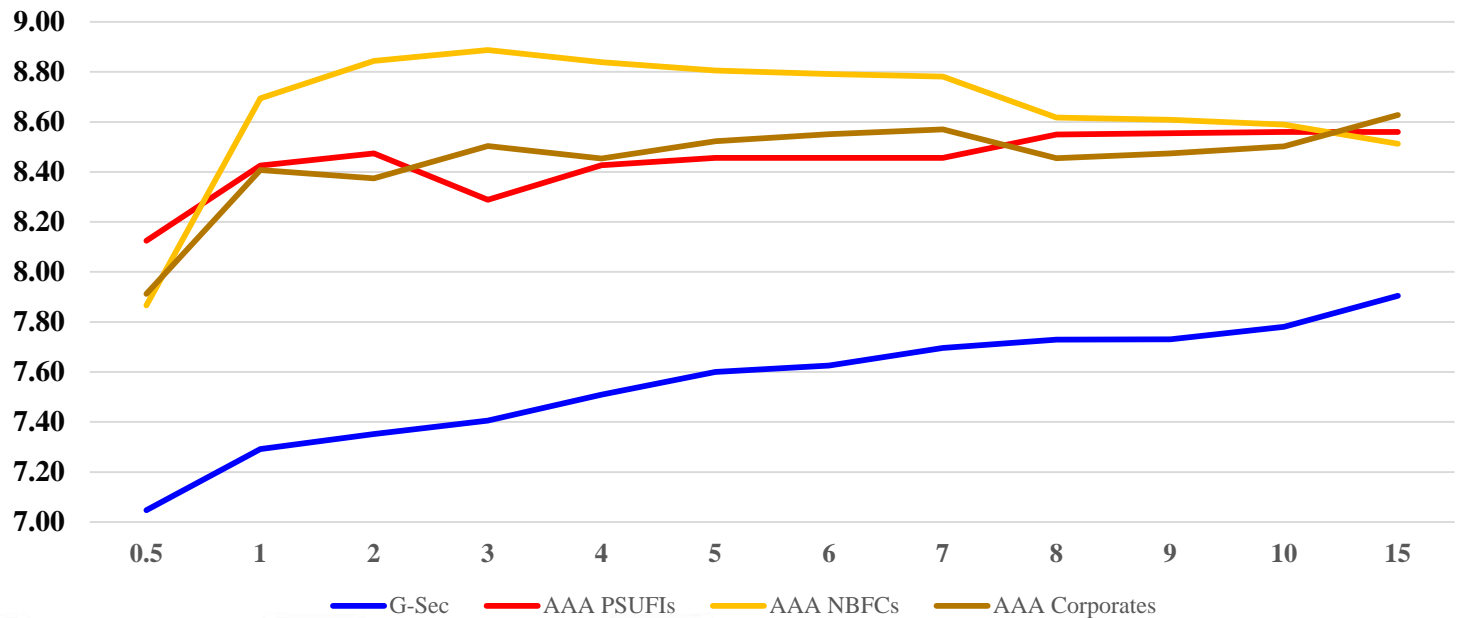
# Corporate Bond – Primary Issuance data

ISSUER TYPE	Issue Amt (in Crs.)	Issue Amt (in Crs.)	Issue Amt (in Crs.)	Issue Amt (in Crs.)
	2014-15	2015-16	2016-17	2017-18
<b>All-india financial institutions &amp; banks/subsidiaries</b>	234213	199550	284121	286722
<b>State financial institutions</b>	883	-	275	250
<b>Public sector undertakings</b>	31219	32267	67176	44772
<b>State level undertakings</b>	6057	23848	20489	10389
<b>Private sector</b>	160319	236382	331707	313665
<b>Total</b>	4,32,691	4,92,047	7,03,768	6,55,799

# Yield Curve



## Yield Curves - 27-Nov-2018



# Forward Rate

Tenor	Forward Rates % (Using par-yield)		Tenor	Forward Rates % (Using par-yield)
1	7.43		16	8.81
2	7.52		17	8.16
3	7.66		18	8.10
4	7.94		19	8.15
5	8.05		20	8.20
6	7.95		21	8.24
7	8.31		22	8.28
8	8.12		23	8.30
9	7.85		24	8.31
10	8.52		25	8.31
11	8.61		26	8.30
12	7.08		27	8.27
13	7.70		28	8.24
14	9.99		29	8.21
15	8.17		30	8.19

# United States Curve 1-Year



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# India Curve 1-Year



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# United States Curve 5-Year



# India Curve 5-Year



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# United States Curve 10-Year



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# India Curve 10-Year



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# Thank You