Discount Rate for Actuarial Valuations

as per

AS15 / IAS 19 / Ind AS 19

as at end of

March 2021

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Discount Rate for Actuarial Valuations of Employee Benefits

The discount rate used in actuarial valuations of employee benefit plans such as gratuity, pension, earned leave etc. is determined by reference to market yields at the balance sheet date on government bonds. **Para 83 of Ind AS19** reads as under:

"The rate used to discount post-employment benefit obligations (both funded and unfunded) shall be determined by reference to ***market yields at the end of the reporting period on government bonds****."*

This means that these valuations are essentially Mark-To-Market (MTM) valuations, which can result in fluctuations in the valuation of liability if the underlying yield on government bonds fluctuates. As can be seen from the below chart, the yield on the government bonds as at the end of March 2021 are lower for bonds with shorter outstanding terms, compared to the yields as at the end of March 2020, which could result in higher employee benefit liabilities (and consequently expenses).

Bond Yields as at March 2020 and March 2021

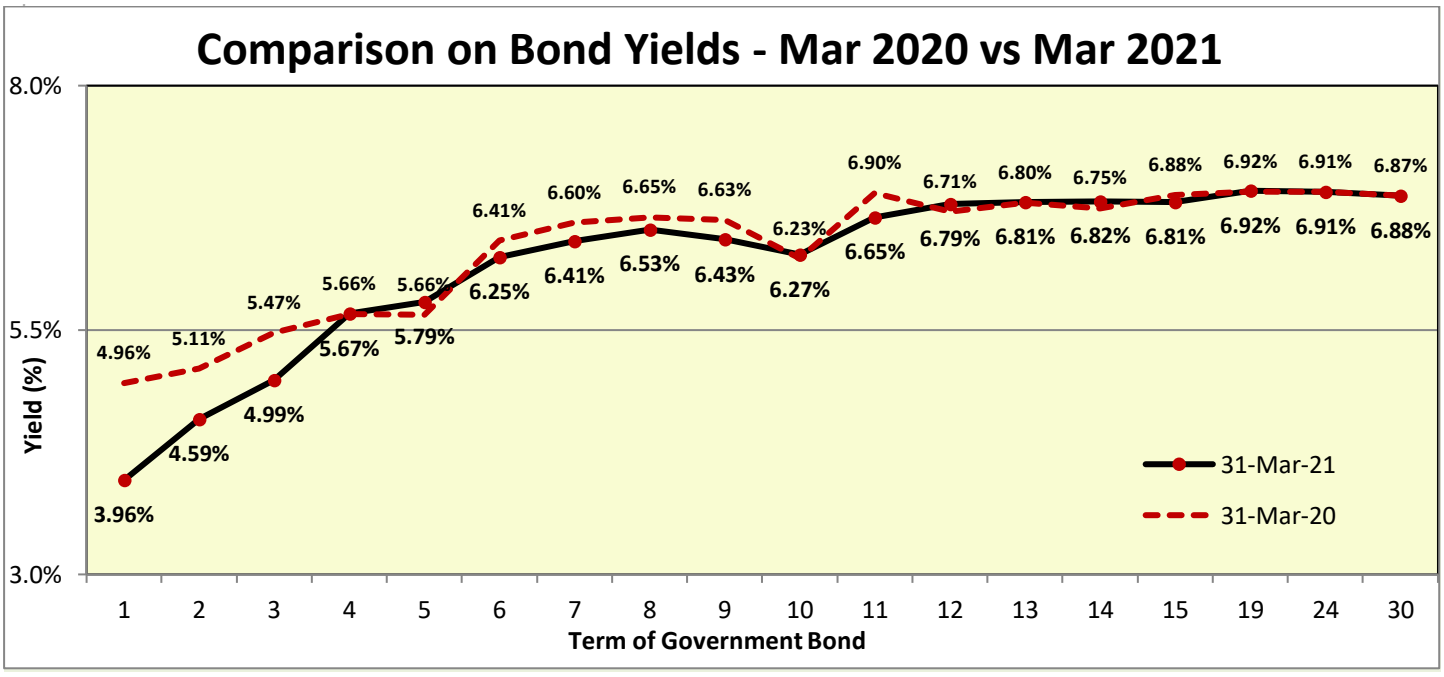
The chart below presents the comparison of government bond yields of various terms as on 31 March 2020 and 31 March 2021. This information can be used to determine the discount rate to be used for actuarial valuation as per AS15, IAS19, Ind AS 19 and US GAAP.

The exact yield curve as at the end of March 2021 is also given in the subsequent table.

Name	Yield on government bond as at end of March 2021
India 1-Year	3.96%
India 2-Year	4.59%
India 3-Year	4.99%
India 4-Year	5.67%
India 5-Year	5.79%
India 6-Year	6.25%
India 7-Year	6.41%
India 8-Year	6.53%
India 9-Year	6.43%
India 10-Year	6.27%
India 11-Year	6.65%
India 12-Year	6.79%
India 13-Year	6.81%
India 14-Year	6.82%
India 15-Year	6.81%
India 19-Year	6.92%
India 24-Year	6.91%
India 30-Year	6.88%

Source: www.investing.com. Note: Please note that the yields in the above table have been annualised.

As per para 85 of Ind AS19, the discount rate is supposed to **reflect the estimated timing of benefit payments**. To ensure the same, the entity should **determine the average estimated timing of benefit payments, allowing for expected attrition and deaths** and accordingly determine the appropriate discount rate that reflects the average expected timing of benefit payment.



Relationship between discount rate and salary growth rate

In line with Para 78 of Ind AS19 (reproduced below for reference), the Company should also contemplate consistency between different actuarial assumptions, such as the salary growth rate and discount rate.

"Actuarial assumptions are mutually compatible if they reflect the economic relationships between factors such as inflation, rates of salary increase and discount rates. For example, all assumptions that depend on a particular inflation level (such as assumptions about interest rates and salary and benefit increases) in any given future period assume the same inflation level in that period."

Theoretically, both salary growth rate and discount rate are closely linked to the long-term expectation of inflation in the economy and hence a positive correlation between the two may be expected.

Where this correlation holds true, a consistent movement in the two assumptions, all else being equal, provides an offset against movements in the value of the liability and hence helps reduce fluctuations on account of change in discount rate alone.

Please note that whilst a general positive correlation between the assumptions is expected, it may not always hold true for all companies and / or at all times. This is because the salary growth rates tend to be influenced by a lot of company and industry specific factors and hence may not always move exactly in line with discount rate.

As such, the Company should consider all such relevant factors and assess appropriateness of linkage between the different actuarial assumptions in their specific context before applying a consistent movement in the salary growth rate assumption.

I trust you will find this note useful. I thank you for reading this note and welcome any comments or recommendations or observations you may have on the subject. You can direct those to the email address mentioned below.

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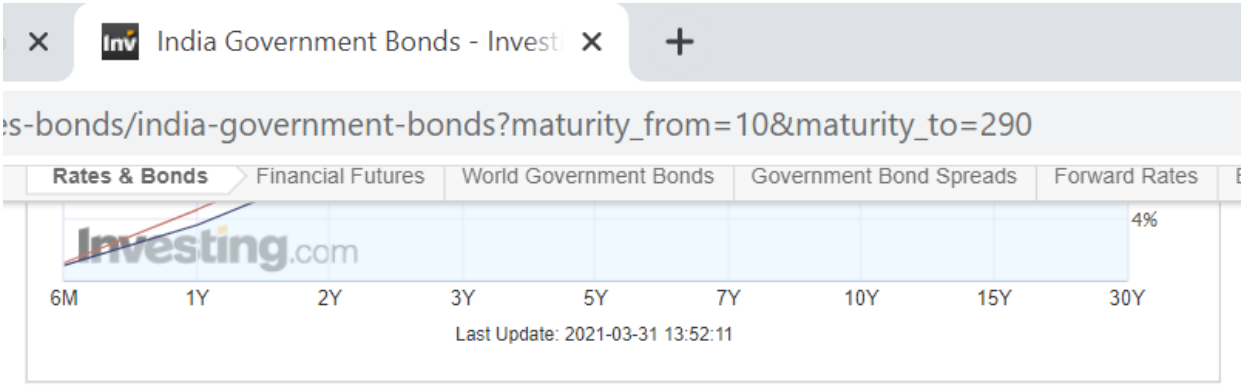
Snapshot of yield on government bonds as at the end of March 2021 from www.investing.com



Name	Yield	Prev.	High	Low	Chg.	Chg. %	Time
India 3M	3.270	3.270	3.320	3.270	-0.040	0.00%	06:06:59
India 6M	3.470	3.470	3.480	3.460	+0.010	+0.00%	06:06:59
India 1Y	3.926	3.926	4.186	3.921	-0.063	0.00%	09:52:10
India 2Y	4.537	4.537	4.585	4.537	-0.087	0.00%	09:52:10
India 3Y	4.929	4.929	4.948	4.915	-0.003	0.00%	09:52:11
India 4Y	5.591	5.591	5.736	5.591	-0.004	0.00%	09:52:11
India 5Y	5.705	5.705	5.718	5.679	+0.027	+0.00%	09:52:11
India 6Y	6.154	6.154	6.211	6.154	-0.009	0.00%	09:52:11
India 7Y	6.312	6.312	6.437	6.312	-0.017	0.00%	09:52:10
India 8Y	6.427	6.427	6.479	6.427	-0.001	0.00%	09:52:10
India 9Y	6.327	6.327	6.385	6.326	+0.010	+0.00%	09:52:10
India 10Y	6.177	6.177	6.185	6.140	+0.034	+0.00%	09:52:10
India 11Y	6.546	6.546	6.612	6.546	-0.024	0.00%	09:52:10
India 12Y	6.675	6.675	6.693	6.675	-0.001	0.00%	09:52:11
India 13Y	6.698	6.698	6.698	6.698	+0.023	+0.00%	09:52:10
India 14Y	6.705	6.705	6.720	6.691	+0.008	+0.00%	09:52:11
India 15Y	6.696	6.696	6.753	6.696	-0.026	0.00%	09:52:10
India 19Y	6.809	6.809	6.809	6.809	+0.009	+0.00%	09:52:10
India 24Y	6.797	6.797	6.797	6.797	+0.005	+0.00%	09:52:11
India 30Y	6.762	6.762	6.770	6.762	0.000	0.00%	09:52:11

Please note that the yields above are on semi-annual basis. In presenting the analysis on the previous page, we have annualised the yields.