




**Discount Rate for Actuarial Valuations**  
as per  
**AS15 / IAS 19 / Ind AS 19**  
as at  
**December 2017**



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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 78 of AS15** reads as under:

*“The rate used to discount post-employment benefit obligations (both funded and unfunded) should be determined by reference to market yields at the balance sheet date on government bonds. The **currency and term** of the government bonds should be **consistent with the currency and estimated term of the post-employment benefit obligations.**”*

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 analysis, the yield on the government bonds as at the end of December 2017 have **risen compared to yields as on 31 March 2017**.

### Bond Yields as at December 2017 and Mar 2017

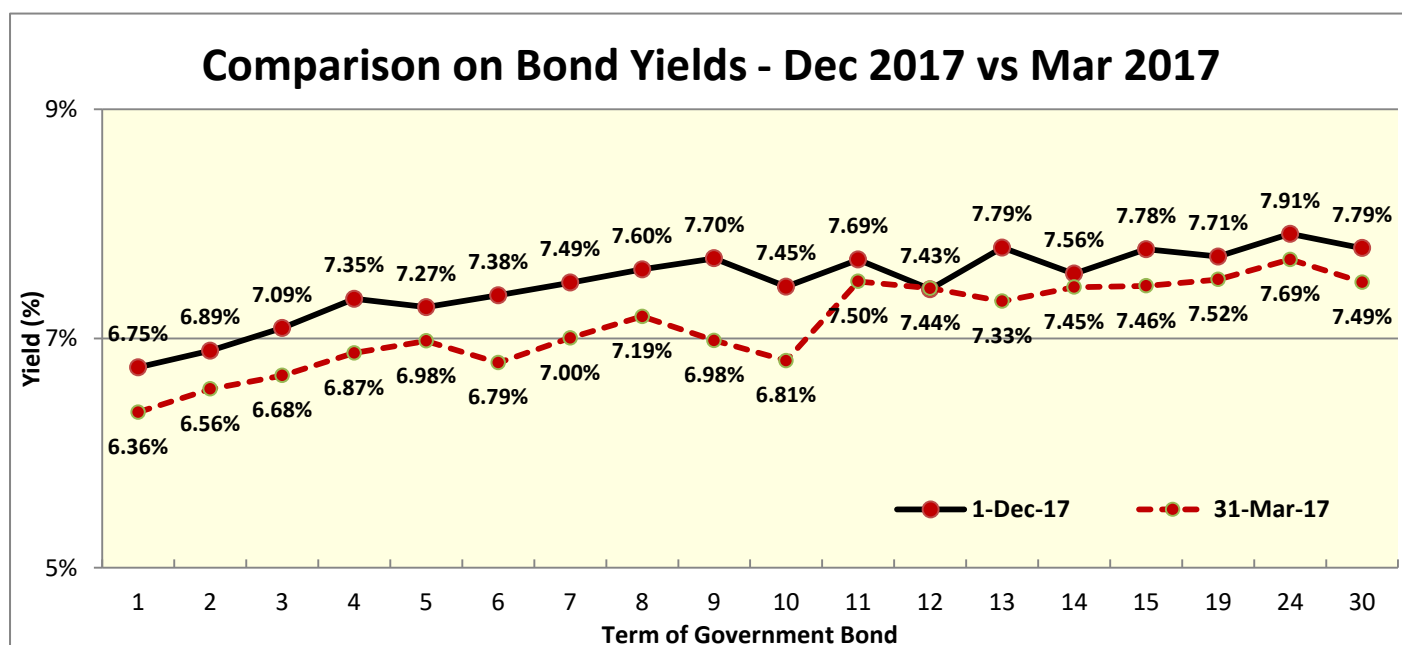
The chart below presents the comparison of government bond yields of various terms as on 31 March 2017 and 29 December 2017. This information can be used to determine the discount rate to be used for actuarial valuation as per AS15, IAS19, Ind AS 19 and US GAAP.

The exact yield curve as at 29 December 2017 is also given in the table below.

Name	Yield on government bond as at end of December 2017
India 1-Year	6.75%
India 2-Year	6.89%
India 3-Year	7.09%
India 4-Year	7.35%
India 5-Year	7.27%
India 6-Year	7.38%
India 7-Year	7.49%
India 8-Year	7.60%
India 9-Year	7.70%
India 10-Year	7.45%
India 11-Year	7.69%
India 12-Year	7.43%
India 13-Year	7.79%
India 14-Year	7.56%
India 15-Year	7.78%
India 19-Year	7.71%
India 24-Year	7.91%
India 30-Year	7.79%

Source: [www.investing.com](http://www.investing.com). Note: Please note that the yields have been annualised.

As per para 80 of AS15, 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 then decide, based on above table, a single weighted average discount rate that reflects the average expected timing of benefit payment.



## Consistent movement in Salary Growth Rate

In each of our discount rate updates, we have been recommending a consistent movement in the discount rate and salary growth rate to reflect the positive correlation between the inflation component of salary growth rate assumption and the discount rate.

Such a movement is also in line with the requirements of Para 76 of AS15, which reads as under:

*"Actuarial assumptions are mutually compatible if they reflect the economic relationships between factors such as inflation, rates of salary increase, the return on plan assets and discount rates. For example, all assumptions which 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."*

The Companies may, thus, consider changing the salary growth rate by a similar magnitude as is the movement in discount rate (subject to the existing salary growth rate assumption being reasonable). This will help in offsetting the one off impact on account of fluctuation in the discount

rate. Further, this will also help the Companies in maintaining a constant level of real salary growth rate assumed in projections from one valuation to another.

I trust you will find the observations and assertions in 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 December 2017 from [www.investing.com](http://www.investing.com)

[.investing.com/rates-bonds/india-government-bonds?maturity\\_from=10&maturity\\_to=290](http://investing.com/rates-bonds/india-government-bonds?maturity_from=10&maturity_to=290)

Name	Yield	Prev.	High	Low	Chg.	Chg. %	Time
India 3M	6.220	6.150	6.220	6.190	+0.070	+1.14%	29/12
India 6M	6.340	6.340	6.340	6.340	+0.020	+0.32%	29/12
India 1Y	6.638	6.648	6.645	6.638	-0.010	-0.15%	29/12
India 2Y	6.778	6.826	6.806	6.778	-0.048	-0.70%	29/12
India 3Y	6.970	7.032	7.014	6.970	-0.063	-0.88%	29/12
India 4Y	7.216	7.265	7.253	7.216	-0.048	-0.67%	29/12
India 5Y	7.145	7.231	7.226	7.145	-0.086	-1.19%	29/12
India 6Y	7.245	7.328	7.309	7.245	-0.083	-1.13%	29/12
India 7Y	7.352	7.416	7.387	7.352	-0.063	-0.86%	29/12
India 8Y	7.463	7.551	7.531	7.463	-0.088	-1.17%	29/12
India 9Y	7.557	7.609	7.592	7.557	-0.052	-0.68%	29/12
India 10Y	7.318	7.398	7.377	7.318	-0.080	-1.08%	29/12
India 11Y	7.546	7.688	7.674	7.546	-0.142	-1.85%	29/12
India 12Y	7.296	7.394	7.374	7.296	-0.098	-1.33%	29/12
India 13Y	7.646	7.733	7.672	7.646	-0.087	-1.12%	29/12
India 14Y	7.427	7.514	7.511	7.427	-0.086	-1.16%	29/12
India 15Y	7.633	7.693	7.661	7.633	-0.060	-0.78%	29/12
India 19Y	7.571	7.611	7.597	7.571	-0.040	-0.53%	29/12
India 24Y	7.762	7.792	7.783	7.762	-0.030	-0.39%	29/12
India 30Y	7.642	7.695	7.743	7.642	-0.053	-0.69%	29/12

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