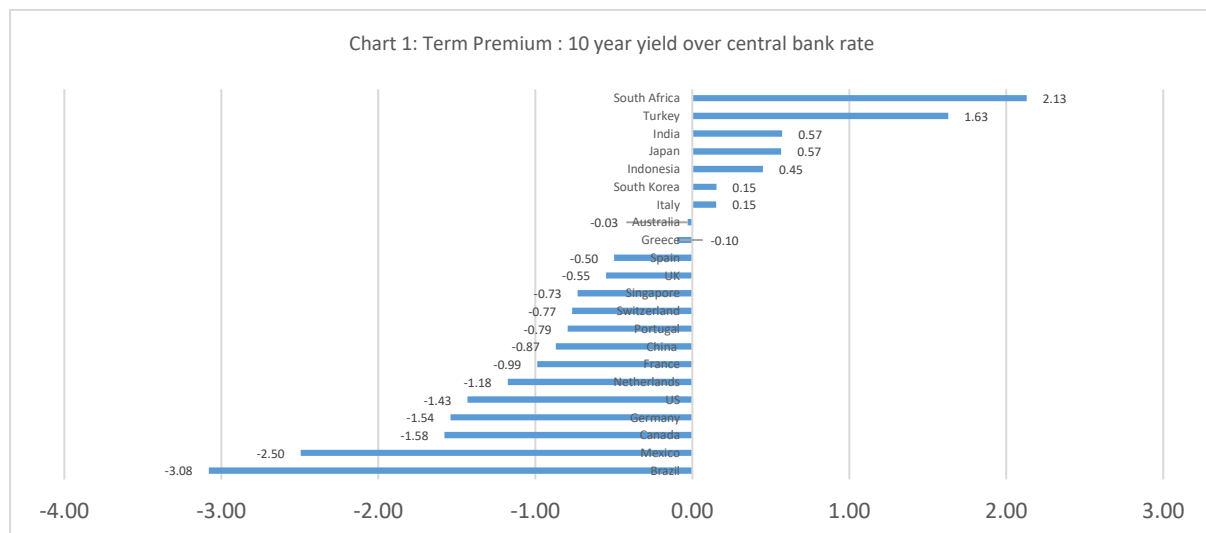


## Does a term premium exist?

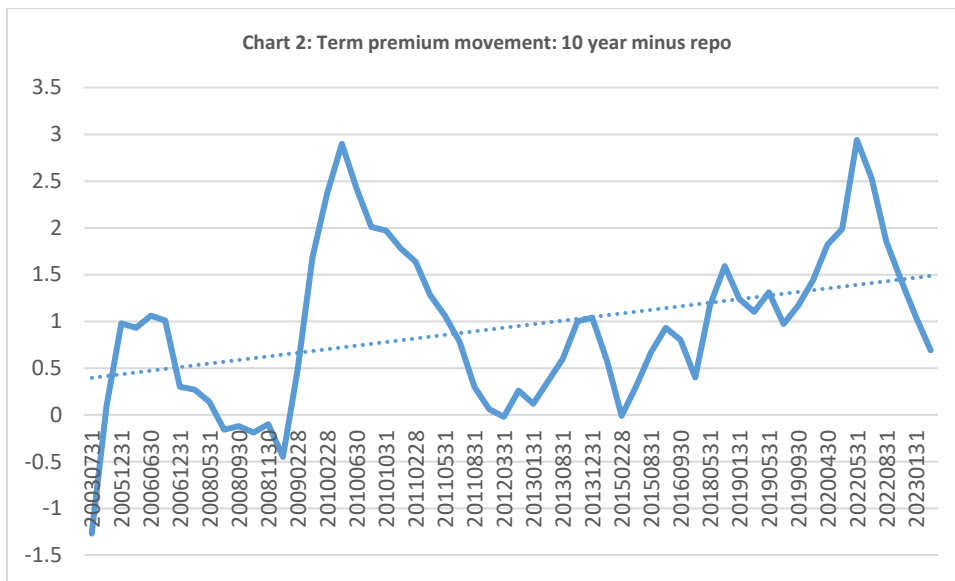
The 10-year bond yield is taken to be the market benchmark for movement in interest rates and hence all policy decisions taken by the central bank have an immediate impact here. While banks may fine tune their deposit and lending rates based on different considerations, the bond yields are considered to be the first touch point of the impact. Within the array of bonds, the ten year bond has been seen to be the most sensitive instrument and this holds in almost all countries. Hence any global comparison is made with this bond. The last few years have been complex for the bond market because central banks took interest rates right down during covid and then started increasing the same when inflation rose. Central banks have different inflation targets when it is overtly stated and in the western countries a number of 2% is widely pursued. For India it is 4%.

A question often posed which is analyzed is the 10-year bond yield when juxtaposed to the central bank rate which in our case is the repo rate. What should be the ideal term premium of a 10-year bond over the repo rate? Repo rate is the overnight rate and a 10-year bond should ideally quote above this rate. This is the theoretical view point which does not hold when one looks at the difference between the two (premium/discount) today. The chart below gives the status in various countries. In the selected list of 22 countries, 7 have a term premium while it is a discount for the other 15 nations. In India the difference is around 57 bps and is the highest in South Africa followed by Turkey where it is above 150 bps. Japan has a premium of 57 bps followed by Indonesia with 45 bps. The largest discount is in case of Brazil where it is above 300 bps. Therefore, drawing global parallels is difficult to ascertain the range of this term premium for any country.



Brazil and Mexico have rates above 200 bps as the central bank rates are in double digits. For Canada the central bank rate is 5% and the 10-year is at a discount of 158 bps. It is the same with USA. There are clearly no patterns here in terms of linkage with the central banks rate. The answer is to hence look at the Indian market independently.

Chart 2 traces the movement of the term premium of the 10-year bond in the Indian context for the last 20 years or so. The difference between the average 10-year yields during a particular regime of repo rate has been plotted here. Hence if the repo rate remained unchanged during the pandemic period the average yields for all the months would be juxtaposed with the repo rate of 4% to calculate the difference. The pattern is interesting because it does not show a definite direction. There are some thoughts that come up through the jagged pattern as the inverted V shaped phases are distinct with the amplitudes being smaller with time. A convergence of the two did take place in Feb 2015 which was an aberration. After peaking in May 2022 when the RBI started increasing the repo rate, the premium has come down due to both the repo rate being increased and the bond yield diminishing. A term premium of around 50 bps looks likely in this scenario. But is this what the trend shows?



The average term premium for the two decades period was high at 94 bps, with a standard deviation of 0.86, which indicates high volatility. At this premium the 10-year yield should be around 7.45-50%. The table below gives how this term premium has moved in the last 4 quinquennium. Again there is no clear picture here with the average varying from 18 bps in the period up to 2008 to as high as 153 bps in the last 5 years. Therefore, here too there is indication of high volatility. Several other factors are at work here which include state of liquidity, RBI operations in the market, market expectations of what the Fed could be doing (more important in recent times although it started post QE being adopted as a policy in the west), inflation and its expectations, government borrowing programme among others.

Term premium during 58 repo rate regimes

Period	Difference %
2003-2008	0.18
2008-2013	1.15
2013-2018	0.71
2018-2023	1.53

It has also been observed that when the repo rate crosses 7%, the term premium comes down sharply and even goes into the negative zone when the former was above 8%. Conversely, as the repo rate

comes down the term premium also tends to increase quite sharply and also crossed 200 bps when it was less than 5%.

At a parallel level, an attempt is made below to regress the term premium/discount with the repo rate for the period covering these 58 time periods. The results show that the coefficient of determination is quite high at 0.59 though the standard error of the equation is fairly high at 0.56. The coefficient as well as the intercept terms are significant. Interestingly the forecast for the repo rate at 6.5% comes to a difference of 100 bps which would mean a 10-year yield at 7.50%. A lower repo at 6.25% would indicate a 10-year yield of 7.39%.

Regression results		
R Square	0.59	t-ratio
Standard Error of Y	0.56	
Intercept	4.71	11.00
X Variable (repo)	-0.57	-8.93
Projection with repo at 6.5		1.00
Projection with repo at 6.25		1.14

A factor that can affect the 10-year yield is inflation and this has also been considered in an alternative regression model which however starts from 2012 onwards when the new CPI was introduced. Here the adjusted R-square was higher at 74%, though the coefficient for inflation was not significant at the 5% level. But interestingly the forecast for the 10-year bond indicates a similar picture assuming inflation at 5%. With repo rate at 6.5%, the 10-year yield is 7.47%, 7.35% when repo is 6.25% and 7.24% with repo at 6%.

### Concluding remarks

There has been no definite trend or pattern in the term premium on a 10-year bond. On an average basis the premium is close to 100 bps which is also enforced by a regression analysis. However, the noise factor or standard deviation is quite high given the wide variations in the premium. With these limitations on the statistical sides, the premium does work out to approximately 100 bps at a repo rate of 6.5%.

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