What drives bond yields?

The government bond market has been witnessing the phenomenon of rising yields ever since the credit policy was announced. There is a sense that there could be more rate hikes; and forecasts vary from 50-75 bps for the year. In fact, the decibel levels for a 50-bps hike in December are reaching a crescendo. At one level, comparisons are made with US treasury yields, with the argument here being that our rates have to be aligned to get in foreign investment. The rupee movement is also linked often with bond yields. Of late, the bond yield movements have been linked with crude oil price movements. Rising Brent has meant that bond yields have to rise. What is one to make of this?

The factors involved

There is a strong economic rationale for all these explanations. Let us see how these arguments go.

1. The difference between the yields on GSec and US Treasuries have to be maintained at a certain level which varies from 200-250 bps. This has also been the historical trend. Given that the rupee tends to depreciate by 2-4% historically, the absence of such a minimal difference will be a disincentive for foreign investors.
2. The currency is a driving factor for the bond yields. If the rupee is declining for example, then bond yields have to rise to restore equilibrium to ensure that investors are rewarded.
3. Higher crude oil prices mean that the current account deficit should increase. To restore equilibrium, interest rates need to rise. Besides higher crude means higher inflation which signals monetary tightening.
4. The liquidity position in the banking system as indicated by the surpluses and deficits should have a direct impact on the bond yields. Surpluses should ideally lower the yields while a deficit should increase them.

Therefore, all these explanations have a strong theoretical basis and cannot be discounted. To see whether they hold in the Indian context, a regression exercise can throw some light on the same. To examine these relationships, monthly data is looked at for the following variables: 10-year GSec yield, average liquidity position of the banking system, US treasury yield, Brent price and exchange rate. Monthly data is more pertinent as day-to-day changes can be driven by several other factors which even out for the month. Monthly averages are hence considered.

As data is in different units, the change over the previous month is reckoned in absolute terms. Hence the regressions look at the change in the yield on 10-year GSec in terms of bps over the previous month, which is the dependent variable. For the independent variables, the average liquidity in the system is reckoned in absolute terms of Rs lakh crore units. For the currency it is change in absolute terms and hence will be in rupees or paise. For the US Treasury it is bps change over previous month just as is the case for GSec. Last for Brent it would be the change in dollar price expressed as dollars.

Regression of change in 10-year yield on Change in Brent, Change in exchange rate, absolute level of liquidity and change in Us Treasury yield

Multiple R	0.720
R Square	0.519
Adjusted R Square	0.483
Standard Error	0.080
Observations	59

	Coefficients	*Standard Error*	*t Stat*	*P-value*
Intercept	-0.035	0.014	-2.526	0.014
Brent	0.003	0.001	2.419	0.019
Rs/$	0.023	0.016	1.454	0.152
Liquidity	-0.016	0.005	-3.271	0.002
US 10 Treasury	0.192	0.050	3.836	0.000

Data sourced from Fed Reserve Bank of St Louis, RBI and CMIE

The results are interesting

1. The regression shows that around a little more than 50% of the changes in the 10-year yield can be explained by these 4 variables.
2. The multiple correlation of these variables with the GSec yield is high at around 72%.
3. Of the 4 variables, only exchange rate is not significant though the sign of the coefficient is positive, meaning thereby that a depreciation goes along with higher yields.
4. In case of liquidity, which is expressed as a surplus with negative sign, the coefficient has a negative sign meaning thereby that surpluses will go with lower rates.
5. Brent has a positive relation even though the value of coefficient is low. Intuitively a large shift in Brent price of say 10 dollars can move yields by 3 bps.
6. US treasuries have a strong relation as was recently witnessed when a sharp spike in these yields pushed up our bond yields. Hence 50 bps hike can push up the GSec yield by around 9 bps as was seen when they crossed 7.4% recently.

Therefore, the exercise shows that there are several factors which affect these yields of which only 4 have been examined. They all work at different levels and would not be in unison when it comes to direction. For example, today surpluses are low while Brent is high and US Treasuries have moderated from their highs. The rupee has moved within a narrow corridor ostensibly due to some regulatory intervention. But all this means that there would be considerable volatility in these yields which are being witnessed today in both the directions.

The view is that if there are at least two rate hikes of a sum of 50 bps in the coming months till March, there will be an upward movement in the GSec yield to 7.75% for sure. This would go along with higher Fed rate hikes post the mid-term elections as inflation is sticky in the USA. Crude oil price will be volatile and driven more by political indecisiveness, which naturally is hard to predict. Liquidity will remain largely tight in the coming months and while a 1% NDTL limit would be maintained, may not be exceeded. The rupee will be largely disciplined with intervention to steady the currency when required by the RBI.

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