

Susceptibility and Sensitivity of Bank Rate Movements on Corporate Bonds



ISBN: 978-1-943295-11-1

Baba Gnanakumar P
M. K. Baby
Kristu Jayanti College
(gnanakumar12000@yahoo.com)
(mk.baby@kristujayanti.com)

The Bank rates in India witnessed high volatility during the period 2013-18. Past researchers proved that banks rates are having an impact on interest rates. This paper aims to reveal sporadic trend between the bank rates and IFRC bonds. The bank rates such as repo rates, CRR, and marginal standing facilities are compared with the bond price. We use the variance test to portray the relationship. The result indicates that the bank rates are having an impact on the prices of IRFC bonds. The research enables the lead managers to fix the price band during the changes in Bank rate.

Keywords: Susceptibility, Sensitivity, Corporate Bonds, Bank Rate, Repo rate

1. Introduction

The bank rate in India has been revised ten times by the RBI during the period 2013-18. Hence, interest rates have also been revised by banks. There is an impact of the interest rate in the corporate bond market. The interest rate fluctuations have played a role in the decision-making process of the bond issuer side – i.e., either to issue bonds or to borrow loans from the bank. This potentially reduces marked-to-market risk and makes returns less volatile. The bank rate increase to 6.25% from 6% during the period 2017-18, whereas during the same period, the yield in Government bond increases from 7.5 % to 8%. The exhibit -1 shows the bank rate changes and the changes in the yield of the corporate bonds.

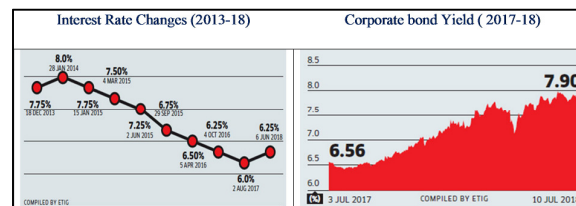


Exhibit 1 Bank Rate and Corporate Bond Yields
Source: Economic Time, July, 17, 2018

The price of the bonds in the secondary market shows the upward trend. On the other hand, the Financial Stability Report published by the Reserve Bank of India (RBI) in December 2017 mentioned that the bond market could have come of age and companies above A+ rating need not come to banks for loans. Instead of approaching bank loan, A+ rated companies infused capital through bonds market. This led to increase the supply of corporate bonds in the market. The price of the bonds was influenced because of the increase in the supply of bonds. In this context, this research has been initiated to find out the relationship between corporate bonds and Bank rates.

2. Knowledge Gap

Graham's (2008) research on corporate loans found that the revisions in bank rates are having an impact on the yield of the corporate bonds and in the firm's expected future cash flows. Elton's (2001) research on corporate bonds found that more volatility in bank rate will result in a delay in funding a counter-party for a transaction. Saunder's (1997) research on corporate bonds contended that changes in bank interest rates would have an impact in repayment schedule. Mayer's (1988) research proved that the changes in the bank rate would influence the price of the bonds for the firms involving in the public-private partnership projects. But this research explores the relationship between bank rates and price volatility of the Government corporate bonds.

3. Objectives of the study

The primary objective of the study is to study the impact of bank rate on the prices and volume of trade of government securities. The facilitating objective is to explore the relationship between various types of bank rates, with the price band of Government bonds.

The price band of Indian Railway Finance Corporation (IRFC) bond has been considered as the dependent variable. The bank rate and repo rate, as quoted by the RBI are considered independent variables.

The Susceptibility of bank rate is measured with the volume of trade of Government securities; whereas, sensitivity is measured regarding the price of the Government bonds.

4. Research Methodology

For the research, the IRFC bonds issued in April 2014 is considered. It is a tax-free Secured Redeemable Non-Convertible Bonds with the coupon rate of 8.65%.The issue price was being Rs 1000 and redeemable after 15yrs from the issue date. CRISIL, ICRA, and CARE rated it under “AAA” category. It is listed in both BSE and NSE. However, the price of IRFC bonds is collected from BSE from April 2014 to March 2018. The bank rates during the period 2014-18 are collected from the RBI database.

The price of the IRFC bonds is grouped based on the bank rate volatility. The closing price of IRFC bonds in BSE is used in the analysis. We use analysis of variance to find out the variation among the bank rates and the price band of IRFC bonds. The results are tested with the 95% confidence level.

5. Impact of Bank Rate on IRFC

The relationship between bank rate and IFRC bonds’ price are analyzed using ‘F’ test. Bank rate is considered as the independent variable, and the bond prices are considered as dependent variables. The null hypothesis that there is no significance between the price of IRFC bonds and volume of trade with bank rate is established. Table -1 shows the results.

Table I Variations between Indian Railway Finance Corporation and Bank Rates

ANOVA						
Variables	Variation	Sum of Squares	df	Mean Square	F	Sig.
Closing Price	Between Groups	282603.620	8	35325.453	18.892	.000
	Within Groups	308528.300	165	1869.868		
	Total	591131.920	173			
Total Trade	Between Groups	1375321.098	8	171915.137	1.907	.062
	Within Groups	14870826.264	165	90126.220		
	Total	16246147.362	173			

The result indicates that the closing price are depending on Bank rate; whereas total volume of trade of equities is not depending on bank rate.

To check the robustness of equality of means of the two significant factor that are extracted from the above stage (ANOVA), we applied the Welch statistics. The null hypothesis that “the variations among the group as created based on prices of bond s is not having equal variations with remittance system and risk aversion” is tested with 95% confidence limits. Since the ‘p’ value of the Welch statistics (112.42; 98.31) is smaller than ‘ α ’ (146.34, 126.65), we reject the null hypothesis. It reflects that - there exists significant variation among the closing price and bank rate Since the variables are having equal robustness of equality of means, the mean plot can stand good for decision making. Hence, mean plot graph was drawn to portray the relationship between opening prices as compared with the bank rate.Exhibit-2 shows the mean plot of the variables.

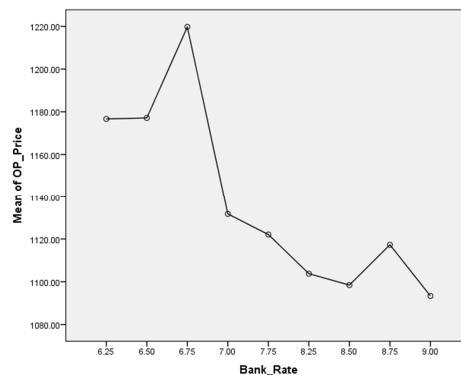


Exhibit 2 Mean Plot Graph of open Price and Bank Rate

The result indicates that price of the bond prices tends to decrease if the bank rate is increasing. The relationship is in inverse direction.

6. Impact of Repo Rate on IRFC

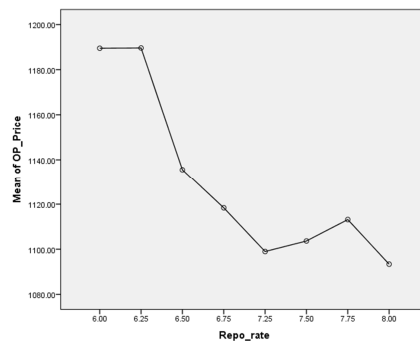
The relationship between repo rate and IFRC bonds’ price are analysed using ‘F’ test. Repo rate is considered as the independent variable and the bond prices are considered as dependent variables. The null hypothesis that there is no significance between price of IRFC bonds and volume of trade with repo rate, is established. Table -2 shows the results.

Table 2 Variation among Repo Rate and Price of Bonds

Variables	Variation	Sum of Squares	df	Mean Square	F	Sig.
Closing Price	Between Groups	267047.189	7	38149.598	19.541	.000
	Within Groups	324084.731	166	1952.318		
	Total	591131.920	173			
Total Trade	Between Groups	475575.320	7	67939.331	.715	.659
	Within Groups	15770572.042	166	95003.446		
	Total	16246147.362	173			

The result indicates that the closing price, depends on Repo rate; whereas total volumes of trade of equities are not depending on Repo rate.

The mean plot graph was drawn to portray the relationship between closing prices as compared with the repo rate. Exhibit-3 shows the mean plot of the variable.

**Exhibit 3** Mean Plot Graph of open Price and Repo Rate

The result indicates that price of the bond prices tends to decrease if the Repo rate is increasing. This also shows the inverse relationship.

7. Findings and Conclusion

The price of the Government bonds is influenced by the bank rates. However, the volume of trade in BSE of Government bonds are not affected by the bank rates. There exists an inverse relationship between bank rates and the price of bonds. As bank rate increases, the price of government bonds tends to decrease. The same trend prevails for the repo rate also. Hence, we conclude that the investors are very cautious about the bank rates before investing in the Government corporate bonds. However, the volume of trading in Government bonds is independent of the bank rate. This reflects the investment pattern on the investors. Investors in Government bonds are considering the price effect only but not the volume of investment. The susceptibility of bank rate which is measured with the volume of trade of Government securities has no impact; whereas, sensitivity is which is measured in terms of the price of the Government bonds is having the opposite effect. As susceptibility and sensitivity with respect to bank rate differs, we conclude that investment pattern in a quantitative manner is not having any change; but the value of the investment is given high priority by the investors by considering bank rate volatility.

8. References

1. Business Standard; Jan, 13, 2018; URL: https://www.business-standard.com/article/finance/rising-corporate-bond-yields-may-send-india-inc-to-banks-for-loans-118011300916_1.html
2. Economic Times; July 17, 2018; URL: <https://economictimes.indiatimes.com/wealth/invest/how-investors-can-take-advantage-of-the-rising-interest-rates/articleshow/64985160.cms>
3. Elton, E. J., Gruber, M. J., Agrawal, D., & Mann, C. (2001). Explaining the rate spread on corporate bonds. *the journal of finance*, 56(1),
4. Graham, J. R., Li, S., & Qiu, J. (2008). Corporate misreporting and bank loan contracting. *Journal of Financial Economics*, 89(1),
5. Leary, M. T. (2009). Bank loan supply, lender choice, and corporate capital structure. *The Journal of Finance*, 64(3),
6. Mayer, C. (1988). New issues in corporate finance. *European Economic Review*, 32(5), 1167-1183
7. Saunders, A., & Thomas, H. A. L. (1997). *Financial institutions management*. Boston: Irwin.