



A Study on Price Volatility of Bonds with Special Reference to NSE

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ABSTRACT :

This paper studies the discovery of prices and volatility at the National Stock Exchange in June 2000. This study examines the futures market which responds to the deviations from equilibrium the price discovery can be found in both the futures as well as the spot market. The generalized Auto Regressive conditional heteroskedasticity (GARCH) Techniques are used to study the price volatility, (GARCH What is a statistical model which is used to analyze the time series of the data). The past performance of NSE does not guarantee future profits or return on investment.

Key Words: NSE, Return and Risk, Corporate Bonds, NVIX Futures, GARCH

Introduction:

The National Stock Exchange is one of the most prominent leading Stock Exchange in India, It is founded in the year 1992; 31 years ago, its currency is Indian Rupees. NSE is the world's largest derivatives exchange of contracts traded, and it is the fourth largest cash equities of trades for the year 2021. It is the first Stock Exchange to provide a modern electronic trading system which offered easy trading opportunities to investors across the country. The National Stock Exchange plays a vital role for the economic development of any country. It helps the investors channelize the resources of various sections for the economy in the country to be fulfilled. Stock exchanges provide opportunities for buyers and sellersto transact in various securities. The price volatility of bonds is the concept to which the bond's price fluctuates due to the reason of changes in interest rates, which is determined as volatility Bonds volatility mainly depends on 2 factors i.e.

1. On its coupon rate Its Maturity date or call date i.e. When it will be retired.
2. If the bonds are longer until the time of retirement, then there is great price volatility.

The NSE Stock Exchange should make sure that reasonable care has to be taken to ensure that the contents are not untrue or misleading, its subsidiaries do not accept any liability for direct losses. The past performance of NSE will not guarantee the future profits or return on investment, based on the previous year's performance in NSE.

The actual yield or opportunities provided while investing in corporate bonds cannot guarantee accuracy and the readers should not depend on any information. Before taking any action based on the information, it is very important for the reader to read the memorandum or term sheets carefully. National Stock

Exchange now offers NVIX features (it is the derivative contract agreement which is used to buy or sell a commodity security at future date for a particular price) its trading symbol of future contract is INDIAVIX. The international stock exchanges will offer a derivative product based on price volatility index; these products have become more popular to the participants which provides new opportunities for the expansion against the price volatility. The price volatility indices enables participants to trade expected changes in market price differences through single transactions. This study states that the index spot and future prices are interrelated to each other.

Objectives:

1. The most important objective of Price Volatility of NSE is to assess the futures trading, it also provides the justification for futures trading, which helps to provide protection to the hedger against the adverse price fluctuations.
2. It is used to control risk measures such as stopping losses and to gain importance when markets are more volatile.

Literature Review.

Price Discovery:

1. Kawaller (1987) examined that the intraday trading price has relationship S&P 500(standard and poor's 500) Index futures.
2. Stoll and Whalley(1990) who founded that there is casual relationship between futures and spot markets using intraday trading for both S&P 500 and Major Market Index(MMI).

Volatility:

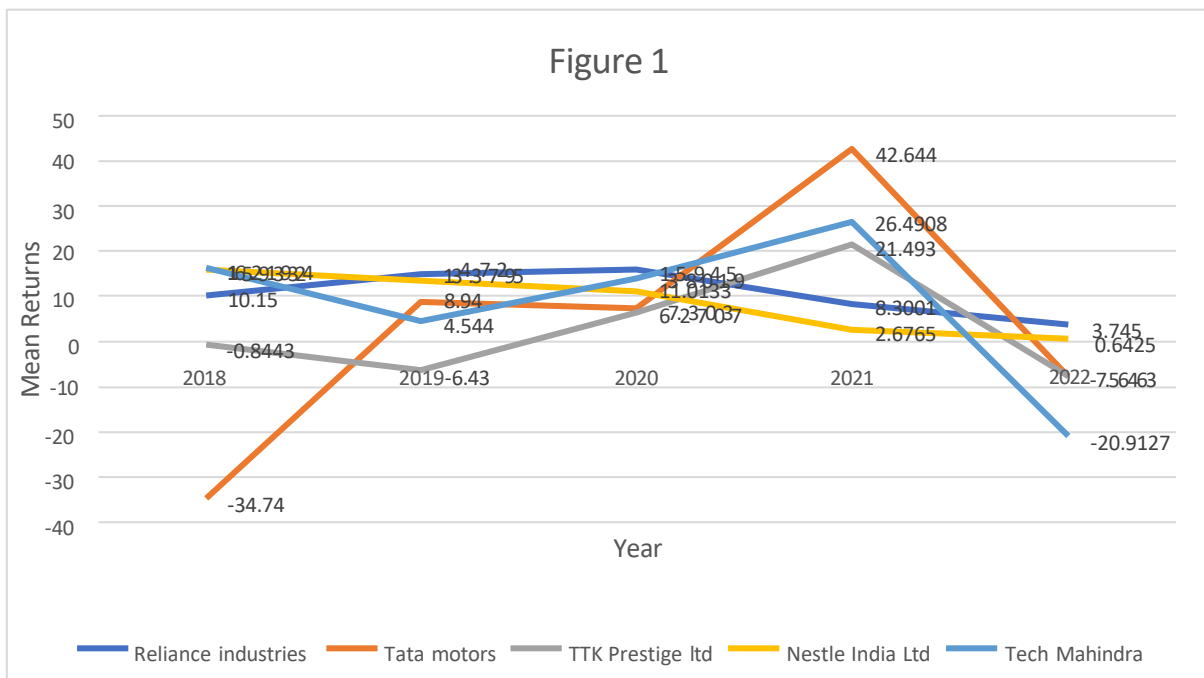
1. Edwards(1998) examined whether the stock index futures has long run in the market. In the year 1973 to 1987 the author concluded that the futures trading did not have any change in the volatility in long run
2. M.T. Raju and Kiran Karande examined that the volatility of the prices in spot market has come down after introduction of stock Index Futures.

Research Methodology.**Hypothesis of the study**

1. Null Hypothesis (H0): There is no significant difference between the price volatility of bonds with reference to NSE.
2. Alternative Hypothesis (H1): There is a significant difference between the price volatility of bonds with reference to NSE.

Data Analysis :**Table 1: The Average return (Mean returns) of the selected companies for the period of 2018 to 2022.**

	Company	2018	Rank	2019	Rank	2020	Rank	2021	Rank	2022	Rank
1	Reliance industries	10.15	3	14.72	1	15.945	1	8.3001	4	3.745	1
2	Tata motors	-34.74	5	8.94	3	7.303	4	42.644	1	-7.56	3
3	TTK Prestige ltd	-0.8443	4	-6.43	5	6.2707	5	21.493	3	-7.643	4
4	Nestle India Ltd	15.9332	2	13.3795	2	11.0133	3	2.6765	5	0.6425	2
5	Tech Mahindra	16.2194	1	4.544	4	13.8019	2	26.4908	2	20.9127	5

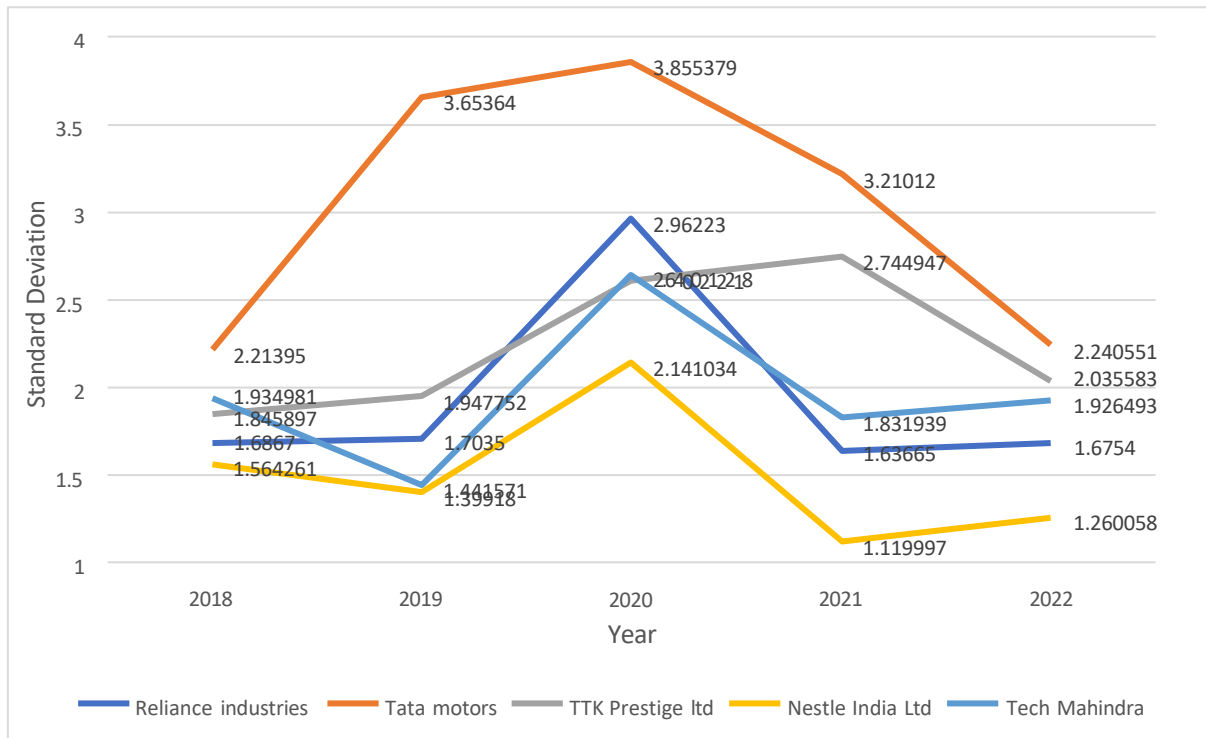


Interpretation: It is clear from the figure1 that the Mean returns of Tata Motors fluctuates between -34.74 and -7.56, the value of TTK Prestige ltd fluctuates between -0.844 and -7.643, the value of Reliance industries fluctuates between 10.15 and 3.745, the value of Nestle India Ltd fluctuates between 15.933 and 0.642, the value of Tech Mahindra fluctuates between 16.22 and 20.913. It is concluded that the value of Tata Motors is found to be very high (42.64) in the year 2021 and was observed to be very low (-34.74) in the year 2018.

Table 2: Average Return (Standard deviation) of selected companies for the period of 2018 - 2022.

	Company	2018	Rank	2019	Rank	2020	Rank	2021	Rank	2022	Rank
1	Reliance industries	1.6867	2	1.7035	3	2.96223	4	1.63665	2	1.6754	2
2	Tata motors	2.21395	5	3.65364	5	3.855379	5	3.21012	5	2.240551	5
3	TTK Prestige ltd	1.845897	3	1.947752	4	2.602218	2	2.744947	4	2.035583	4
4	Nestle India Ltd	1.564261	1	1.39918	1	2.141034	1	1.119997	1	1.260058	1
5	Tech Mahindra	1.934981	4	1.441571	2	2.640128	3	1.831939	3	1.926493	3

Figure 2



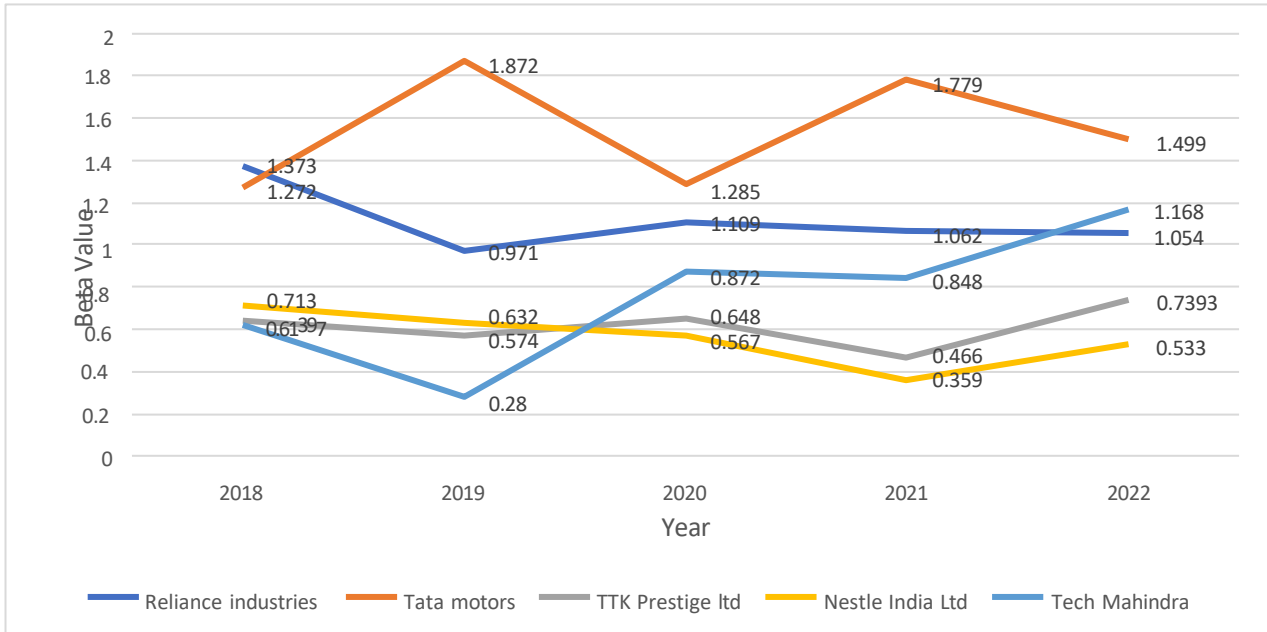
Interpretation: It is clear from the figure2 that the standard deviation(σ) of Tata Motors fluctuates between 2.214 and 2.2405, the value of TTK Prestige ltd fluctuates between 1.845 and 2.035, the value of Reliance industries fluctuates between 1.686 and 1.675, the value of Nestle India Ltd fluctuates between 1.564 and 1.260, the value of Tech Mahindra fluctuates between 1.934 and 1.926. It is concluded that the value of Tata Motors is found to be very high ($\sigma=3.855$) in the year 2020 and the value of Nestle India Ltd was observed to be very low (1.119) in the year 2021.

Table 3: Average Risk (Beta Value) of the selected companies for the period of 2018 – 2022.

Company	2018	Rank	2019	Rank	2020	Rank	2021	Rank	2022	Rank
Reliance industries	1.373	5	0.971	4	1.109	4	1.062	4	1.054	3
Tata motors	1.272	4	1.872	5	1.285	5	1.779	5	1.499	5
TTK Prestige ltd	0.639	2	0.574	2	0.648	2	0.466	2	0.7393	2

Nestle India Ltd	0.713	3	0.632	3	0.567	1	0.359	1	0.533	1
Tech Mahindra	0.617	1	0.28	1	0.872	3	0.848	3	1.168	4

Figure 3



Interpretation:

It is clear from the Figure 3 that the beta value of Tata Motors fluctuated between 1.373 and 1.499, the beta value of Reliance Industries fluctuates between 1.272 and 1.054, the beta value of Tech Mahindra fluctuates between 0.679 and 1.168, the beta value of Nestle India Ltd fluctuates between 0.713 and 0.533, the beta value of TTK Prestige Ltd fluctuates between 0.619 and 0.7393. It is concluded that the beta value of Tata Motors was found to be very high ($\beta=1.872$) during 2019 and the beta value of Tech Mahindra was observed to be very low (0.28) during 2019.

Conclusion:

It is observed that the Mean Returns, Standard deviation, and the beta value of Tata Motors found to be very high when compared to other companies, therefore investing in Tata Motors the investors can gain high returns and also found to be high risk when compared to other companies. Hence it is suggested that investing in Tech Mahindra is better because the returns and risk are neutral in all the three cases.

REFERENCE:

1. Working paper of M.T. Raju and Kiran Karande, NSE Website, Yahoo.finance.