



ANALYSIS OF RISK AND RETURN ON CORPORATE BONDS OF TOP 10 AAA CREDIT RATING COMPANIES IN INDIA

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ABSTRACT: This study looks into the risk and return characteristics of corporate bonds issued by India's top 10 AAA-rated companies. The goal is to examine how these bonds' risk and possible rewards for investors relate to one another. For the purpose of conducting this analysis, historical information on corporate bond prices, yields, and credit ratings for the chosen corporations over a predetermined time period is gathered from reliable financial sources. The research focuses on evaluating both the systematic market risk as well as the particular risk variables that apply to particular enterprises.

Key words: Corporate bonds, Yield-to-maturity, Systematic risk, Return, AAA credit grade, Macroeconomic factors.

1. INTRODUCTION: Indian bond market is an Indian financial market in India that has seen liberalized since 1990s. The bond market has been relatively over looked in recent years, yet bonds of various types have helped raise more than half the capital raised by financial institutions and enterprises, as well as non-financial institutions. The government also heavily relied on the bond market to finance its fiscal imbalance. Bonds are a tool for businesses and governments to raise funds. The yield curve is the price of bonds in a secondary market that reflects market participants' interest rate expectations. The corporate bond market is primarily limited to private corporations, and secondary market liquidity is minimal because most bonds issued are held to maturity.

Indian Bond market

India's bond markets have been expanding, primarily in the government bond market, as domestic financial institutions have been required to hold a certain percentage of government securities in order to facilitate the smooth absorption of government bonds issued to fund the country's infrastructure projects. There is a defect in budget; the government bond market has been identified as a critical area for reform. When compared to privately placed bonds, the significant requirements on public issuance in terms of time and cost appear to be unchanged. Furthermore, a system for providing risk-hedging instruments and safe guarding investors interest, such as the credit default swap (CDS) market and bankruptcy proceedings, is seen as a key impediment to the creation of a corporate bond market

TYPES OF BOND MARKETS

- Corporate
- Government
- Municipal
- Mortgage – backed bonds
- Emerging market bonds

NEED FOR THE STUDY

Bonds are a popular investment option for many people and also the investors. Bonds are dynamic financial tools that help a country's economy by allowing it to mobilize funds in the capital market. Yield to maturity is an rate of return of a bonds that investor invests.

OBJECTIVE OF THE STUDY

- To find the yield to maturity and risk of corporate bonds of top 10 A credit rating companies
- To investigate the price and yield-to-maturity (YTM) changes of bonds
- To offer the investor a better yield from the above stated companies and period

Scope of the study

This study is only for a period of 4 years (2019-2022). This study is to know the returns and risk of the Top 10 AAA credit Rated companies. This project provides information the investor to invest in bonds. For the calculation of risk, the standard deviation is used

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| ➤ Power grid corporation of India ltd | services Ltd |
| ➤ India infra debt limited | ➤ Aditya Birla Finance Limited |
| ➤ L&T Finance LTD | ➤ IDFC infrastructure Finance limited |
| ➤ Sundharam finance limited | |
| ➤ Fullerton India credit company limited | ➤ LIC housing finance limited |
| ➤ Mahindra & Mahindra financial | ➤ Housing development finance corporation limited |

RESEARCH METHODOLOGY

Primary data/ secondary data

This study is dependent on secondary data and was collected through various articles and websites.

TOOLS & TECHNIQUES OF THE STUDY

Calculation of YTM of bonds and various pricing models for bonds is a tool for the study

Tools of the study:

Yield to maturity

$$YTM = IT (RV - Bo) / n / (RV + Bo) / 2$$

Statistical tools:

- MEAN = Sum of observations/no of observations
- STANDARD DEVIATION $\sigma = \sqrt{\sum(x-x)^2/n}$
- Coefficient of variation = (SD/MEAN) *100

2. LITERATURE REVIEW

1.Amerendra Acharya in the article “**Corporate bond Market in India: Issues and challenges**” of the journal “**Reserve bank of India**” (2018) stated that A cross-country comparison was used to thoroughly analyze the various stages of the corporate bond market's development in India. According to the study's preliminary empirical analysis, the yield on corporate bonds is positively connected with the weighted average call rate and the yield on government securities.

2.Hemant manuj in the article “**Development and Policy Issues of Bond Market in India**” of the journal “**Institute of management and research**” (2018) stated that a developed bond market should include bonds from diverse risk spectrum groups. The continued issuance of yield bonds is one of the key elements, according to IGATE, Take, and Yoshikawa, underlying the success of the U.S. bond market (bond related BB or below). High-yield bonds' alluring risk-return qualities on the American market make it possible for speculative grade yet potential and rapidly expanding businesses to borrow capital.

3.Chandrani sarma in the article “**The Indian Bond Market**” of the journal “**Institute of south Asian studies**” (2019) stated that in contrast to the banking industry, corporations can obtain a competitive alternative source of capital. Since a sound balance sheet is a requirement for issuing bonds, they can also use it as an indicator of financial strength. Smaller businesses will be able to access cash from the banking industry and bond market, which are currently controlled by larger businesses and therefore out of reach for them.

4.Rohini Tendulkar and Gigi Hancock (2019) in the article “**Corporate bond markets: A global perspective**” of the journal “**International Organization of securities commissions**” stated that Governments in developed economies decided to save a number of failed financial institutions after the

crisis first started in an effort to lessen its systemic effects on the economy. Additionally, government’s implemented stimulus plans to encourage sustained economic growth.

5.Mukherjee, Dr. kedar nath in the article “Corporate bond market in India: Current Scope and Future Challenges” of the journal “National Institute of Bank Management” (2018) stated that the equity and debt securities fall into two categories that are more general in nature. Because equity represents a shareholder's legal claim on the assets of the corporation in which the equity share is held after all obligations have been satisfied, equity is a perpetual liability.

3. DATA ANALYSIS

Table No. 3.1: Calculated YTM's, Mean, Variance, And Standard Deviation of selected companies for the years 2018-2022.

	YEARS	2018-19	2019-20	2020-21	2021-22	Mean	Variance	Standard Deviation
POWER GRID CORPORATION OF INDIA LTD	PRICES	102.58	107.17	107.53	104.97			
	YTM's	8.44%	7.79%	9.33%	6.96%	8.13%	1.00687	1.00343
INDIA INFRA DEBT LIMITED	PRICES	97.95	101.2	102.1	98.08			
	YTM's	9.31%	8.40%	8.54%	7.60%	8.46%	0.49069	0.70049
SUNDHARAM FINANCE LIMITED	PRICES	99.811	106.08	100	102.76			
	YTMS	6.92%	9.21%	5.09%	7.61%	7.21%	2.91283	1.70670
FULLERTON INDIA CREDIT COMPANY LIMITED	PRICES	99.7641	98.3	100.31	103.74			
	YTMS	8.83%	9.83%	7.71%	8.53%	8.73%	0.76677	0.87565
MAHINDRA & MAHINDRA FINANCIAL SERVICES LTD	PRICES	100.22	100	100.15	99.88			
	YTMS	8.99%	7.43%	7.42%	5.87%	7.43%	1.62243	1.27374
ADITYA BIRLA FINANCE LIMITED	PRICES	101.94	101.92	105.83	98.78			
	YTMS	8.60%	8.83%	8.38%	7.48%	8.32%	0.34923	0.59095
IDFC INFRASTRUCTURE FINANCE LIMITED	PRICES	98.8	100.88	104.3	102.3			
	YTMS	8.07%	8.79%	7.77%	7.78%	8.10%	2.29E-05	0.47898
LIC HOUSING FINANCE LIMITED	PRICES	100.66	100.6	111.91	98.73			
	YTMS	8.31%	8.28%	7.85%	7.11%	7.89%	0.31283	0.55931
L&T FINANCE LTD	PRICES	99.73	108.03	105.6	102.11			
	YTM's	9.01%	8.18%	8.04%	8.58%	8.45%	1.90E-05	0.00436
HOUSING DEVELOPMENT FINANCE CORPORATION LIMITED	PRICES	99.947	99.8044	98.7597	98.01			
	YTM'S	7.03%	10.39%	6.01%	7.13%	7.64%	3.6172	1.90189

Table No. 3.2: Comparison of risk of all Top 10 AAA credit companies for the year 2018-2022

Companies	Arithmetic mean	Standard deviation	Coefficient of variation	Rank
Power grid corporation of India limited	8.13%	1.00342	0.12342	VII
India infra debt limited	8.46%	0.70049	0.08280	V

L&T Finance LTD	8.45%	0.00436	0.00051	I
Sundaram finance limited	7.21%	1.70670	0.23671	IX
Fullerton India credit company limited	8.73%	0.87565	0.10030	VI
Mahindra & Mahindra financial services ltd	7.43%	1.27374	0.17143	VIII
Aditya Birla finance limited	8.32%	0.59095	0.07102	IV
IDFC infrastructure finance limited	8.10%	0.47898	0.05913	II
LIC Housing Finance Limited	7.89%	0.55930	0.07088	III
HDFC Limited	7.64%	1.90189	0.24893	X

4. FINDINGS, SUGGESTIONS AND CONCLUSION

FINDINGS

- Yield to maturities of Power Grid Corporation of India limited of 2020 is increased to 9.33% and in 2021 is decreased to 6.96% and Bond price in 2019 & 2020 is increased to 107/-.
- Calculated mean for YTM is 8.13% and also calculated variance of the YTM's is 1.00686 and standard deviation YTM's is 1.00342.
- Yield to maturities of India Infra Debt Limited of 2018 is increased to 9.31% but in 2021 is decreased to 7.60% and bond price in 2020 is increased to 102.1/- . But in 2021 is decreased to 98/-.
- Calculated Mean for YTM is 8.46% and also calculated variance for YTM's is 0.49069 and standard deviation for YTM's is 0.70049.
- Yield to maturities of L&T Finance LTD of 2018 is increased to 9.01% but in 2020 is decreased to 8.04% and bond price in 2019 is increased to 108.03/- . But in 2021 is decreased to 102.1/-
- Calculated mean for YTM is 8.45% and also calculated variance for YTM's is 1.90492 and standard deviation for YTM is 0.00436.
- Yield to maturities of sundharam finance limited of 2019 is increased to 9.21% but in 2020 is decreased to 5.09% and bond price in 2019 is increased to 106.08/- but in 2021 is decreased to 102.76/-
- Calculated mean for YTM is 7.21% and also calculated variance for YTM's is 2.91282 and standard deviation for YTM is 1.70670.
- Yield to maturities of Fullerton India credit Company Limited of 2019 is increased to 9.83% but in 2020 is decreased to 7.71% and bond price in 2019 is decreased to 98.3/- but in 2021 is increased to 103.74/-
- Calculated mean for YTM is 8.73% and also calculated variance for YTM's is 5.30 and standard deviation for YTM is 0.87565.
- Yield to maturities of Mahindra & Mahindra financial services ltd of 2018 is increased to 8.99% but in 2021 is decreased to 5.87% and bond price in 2018 is increased to 100.22/- but in 2021 is decreased to 99.88/-
- Calculated mean for YTM is 7.43% and also calculated variance for YTM's is 1.62242 and standard deviation for YTM is 1.27374.
- Yield to maturities of Aditya Birla finance limited of 2019 is increased to 8.83% but in 2021 is decreased to 7.48% and bond price in 2020 is increased to 105.83/- but in 2021 is decreased to 98.78/-
- Calculated mean for YTM is 8.32% and also calculated variance for YTM's is 0.34922 and standard deviation for YTM is 0.59095
- Yield to maturities of IDFC infrastructure Finance Limited of 2019 is increased to 8.79% but in 2020 & 2021 is decreased to 7.77% and bond price in 2019 is decreased to 100.88/- but in 2020 is increased to 104.3/-
- Calculated mean for YTM is 8.10% and also calculated variance for YTM's is 2.29425 and standard deviation for YTM is 0.47898.
- Yield to maturities of LIC housing finance limited of 2018 is increased to 8.31% but in 2021 is decreased to 7.11% and bond price in 2018 is decreased to 100.66/- but in 2021 is decreased to 98.73/-
- Calculated mean for YTM is 7.89% and also calculated variance for YTM's is 0.31282 and standard deviation for YTM is 0.55930

- Yield to maturities of Housing development finance corporation limited of 2019 is 10.39% but in 2020 is decreased to 6.01% and bond price in 2018 is increased to 99/- but in 2021 is decreased to 98.01/-
- Calculated mean for YTM is 7.64% and also calculated variance for YTM is 3.6172 and standard deviation for YTM is 1.90189
- The coefficient of variation is 0.00051 for the L&T finance LTD and the standard deviation is 0.00436 and it has ranked as 1
- Whereas the Housing development finance corporation limited standard deviation is 1.90189 which Means the risk is high and the coefficient of variation is 0.24893 and it has been ranked as 10

SUGGESTIONS

- Fullerton India credit company limited has a higher YTM of 10.39% as compared to other companies, so suggestion for investor is to invest in this bonds to get higher return of investment
- Sundharam finance limited has a lowest YTM of 7.21% as compared to other companies, so suggestion for investor is don't invest in this bonds
- L&T finance LTD has a low risk when compared to other companies so, investors may invest in this bonds
- HDFC LTD has a higher risk when compare to other companies, so suggestion for investor is don't invest in this bonds
- Investor may invest in different bonds like government, corporate etc
- Investor may invest in different bonds when there is a high return with low risk

CONCLUSION

Bonds have become an important part for the investor. Thus the impact of bond prices in the bond market will directly effect on YTM. The comparison between 10 companies which are AAA credit rating company those company if we invest we get higher returns and low risk when compare to other companies. In this study emphasis comprehensive investigation of risk and return in the major corporate bonds of AAA credit rating companies. Our study strongly suggest that to compute returns on corporate bond, however for risk management and computation of covariance is to get the higher returns and with the low risk.

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