

Study To Analyze Factors Affecting Indian Bond Return

Yogendra Singh Rajavat*

Dr. Amitabh Joshi**

*Assistant Professor, Prestige Institute of Management, Dewas

**Director, Prestige Institute of Management, Dewas

Abstract

This paper attempt to analyze the behavior of Indian Bond Return and various factors which affect it. This paper examines the various research studied conducted with reference to Indian and International context. This paper tries to find out the important factors those are affecting the Indian Bond Return directly or indirectly. In this research one major bond market UK Bond and one Indian stock exchange, NSE has been considered as affecting factors. Data of three years was collected from the website of NSE India .com, yahoo finance.com and Investing.com and Johansen Co integration test is applied. This paper is divided into four sections. First section covers review of literature, second section covers objective of the study and methodology, third section is on result and findings and fourth section covers conclusion.

Keywords: Indian Bond, UK Bond, NSE, Co Integration.

Introduction: A bond is an instrument of indebtedness of the bond issuer to the holders. Government Securities are securities issued by the Government for raising a public loan or as notified in the official Gazette. They consist of Government Promissory Notes, Bearer Bonds, Stocks or Bonds held in Bond Ledger Account. They may be in the form of Treasury Bills or Dated Government Securities. Since the existence of financial markets, people have tried to forecast them, in the hope that good forecasts would bring them great fortunes. In financial practice it is not the question whether it is possible to forecast, but how the future path of a financial time series can be forecasted. In academia, however, it is merely the question whether series of speculative prices can be forecasted than the question how to forecast. Therefore practice and academics have proceeded along different paths in studying financial time series data. Perfect volatility forecasts are important to traders, investors, and risk managers, as well as researchers seeking to understand market dynamics. Such volatility forecasts may be obtained from either time-series models or implied volatilities calculated from observed option prices. Although theoretically implied volatilities should reflect all available information, including time-series information, evidence is mixed on which of the two forecasts better. Moreover implied volatilities cannot simultaneously be used to price the derivative assets from whose prices they are calculated and are only available for specific time horizons for a limited set of assets. Consequently time-series models are the major source of volatility forecasts. In practice, co integration is often used for two I(1) series, but it is more generally applicable and can be used for variables integrated of higher order (to detect correlated accelerations or other second-difference effects). Multi co integration extends the co integration technique beyond two

variables, and occasionally to variables integrated at different orders. However, these tests for co integration assume that the co integrating vector is constant during the period of study. In reality, it is possible that the long-run relationship between the underlying variables change (shifts in the co integrating vector can occur). The reason for this might be technological progress, economic crises, changes in the people's preferences and behavior accordingly, policy or regime alteration, and organizational or institutional developments. This is especially likely to be the case if the sample period is long. First section covers review of literature, second section covers objective of the study and methodology, third section is on result and findings and fourth section covers conclusion.

Literature Review: Chittedi (2008) analyzed the performance of the Sensex vs. FIIs in Indian stock market and some of the most talked about movements of Sensex starting with the secondary market summary of each year. FIIs investments in BSE Sensex reveal that the liquidity as well as volatility was highly influenced by FII flows. FIIs are significant factor determining the liquidity and volatility in the stock market prices. After going through all the analysis regarding the stock market in last 2 years, the author says that stock market touched its peak at 21000 but then crashed badly. Though the Sensex is a barometer and after seeing such fluctuations one could be afraid of investing. So even after such downturns, he is hopeful for a positive market.

Andersen et al. (2007) Boyd et al. (2005) and also investigate the effects of macroeconomic news announcements on stock and bond markets in expansions and recessions. They argue that the cash flow effect may dominate during contractions, while the discount rate effect may be more important during expansions, thus resulting in positively correlated stock and bond returns in expansions and lower, perhaps even negative, correlations during recessions.

Griffioen (2003) in his study observed that the efficient markets hypothesis states that in highly competitive and developed markets it is impossible to derive a trading strategy that can generate persistent excess profits after correction for risk and transaction costs. The goal of his thesis was to test the weak form of the efficient markets hypothesis by applying a broad range of technical trading strategies to a large number of different data sets. In particular, he focused on the question whether, after correcting for transaction costs, risk and data snooping, technical trading rules have statistically significant forecasting power and can generate economically significant profits.

Ilmanen (2003) and many other studies, we consider several dimensions of macroeconomic conditions: the business cycle, inflation environment, and monetary policy stance (short rate). Based on business cycle dating, we document for the first time evidence for different patterns in stock-bond correlations over recessions versus expansions between the US and the UK. In the

US, the stock-bond correlations during recessions are lower than those during expansions, which is consistent with many previous studies.

Fabella and Madhur (2003) studied the requirements necessary for development of bond markets in East Asia. They identified eight conditions required for robust domestic bond market development: (i) sustaining a stable macroeconomic environment with low inflation and stable interest rates, (ii) developing a healthy government bond market that would serve as a benchmark for the corporate bond market, (iii) completing the post crisis agenda of banking sector restructuring, (iv) improving corporate governance, (v) strengthening the regulatory framework for the bond market, (vi) rationalizing tax treatment of bonds, (vii) broadening the investor base, and (viii) promoting the growth of regional bond market centers.

Goetzmann and Massa (2002) document that fund price formation in equity markets. These findings indicate that fund flows and monetary factors can affect returns and volatility in addition to liquidity.

Krishnamurti & Lim (2001) in their paper suggest that the significant structural differences between stock exchanges contribute to variations in observed measures of quality of markets. They used a paired comparison approach and document significant differences in liquidity and price volatility between the two markets.

Edelen and Warner (2001) show a positive association between aggregate and concurrent market returns Fleming and Remolona (1997) document that monetary shocks are associated with large changes in bond and stock prices.

Objective: The primary objective of this study aims to analyze volatility in the returns of the Indian Bond and factors affecting the volatility.

The Study: Bond market volatility plays a vital role in the economic development as well as growth. Daily volatility is calculated as a standard deviation of the natural log of daily returns on the indices for the respective months. The market may have turned riskier, messy politics could resurface, and oil prices are at a new high (but at present low); but nothing seems to worry local investors, who feel the index can go up further. Understanding volatility is therefore central to risk management in an economy. This paper examines the volatility of daily returns of the Indian Bond Return.

Sample: The study uses daily closing levels for two bond market India and UK. NSE 50(Nifty) Data also collected for same period. The time duration was 1 July 2010 to 1 July 2013.

Hypotheses:

Long Term Co integration of IBR with UKB and NSE

H01: There is no co integration between the variables

H02: There is at least one co integration variable.

H03: There are at least two co integration variables

Results & Findings:

Series: IBR UKB NSE

Unrestricted Cointegration Rank Test (Trace)

Hypothesized		Trace	0.05	
No. of CE(s)	Eigenvalue	Statistic	Critical Value	Prob.**
None *	0.097238	55.62498	47.85613	0.0079
At most 1 *	0.077778	34.65421	29.79707	0.0128
At most 2 *	0.062001	18.05552	15.49471	0.0201

Trace test indicates 4 cointegrating eqn(s) at the 0.05 level

* denotes rejection of the hypothesis at the 0.05 level

**MacKinnon-Haug-Michelis (1999) p-values

Testing of Hypothesis using trace Test

H01: There is no cointegration between the variables

Hypothesis is not accepted because the probability value is.0079, which is less than .05. Thus the hypothesis that there is no cointegrating variable is not accepted.

H02: There is at most one co integration Variable

Hypothesis is not accepted because the probability value is.0128, which is less than .05. Thus the hypothesis that there is at most 1 co integrating variable is not accepted.

H03: There are at most two co integrating Variables

Hypothesis is not accepted because the probability value is.0201, which is less than .05. Thus the hypothesis that there is at most two co integrating variable is not accepted.

Unrestricted Co integration Rank Test (Maximum Eigen value)

Hypothesized		Max-Eigen	0.05	
No. of CE(s)	Eigenvalue	Statistic	Critical Value	Prob.**
None	0.097238	20.97077	27.58434	0.2780

At most 1	0.077778	16.59869	21.13162	0.1918
At most 2	0.062001	13.12141	14.26460	0.0752

Max-eigen value test indicates no co integration at the 0.05 level

* denotes rejection of the hypothesis at the 0.05 level

**MacKinnon-Haug-Michelis (1999) p-values

H01: There is no co integration between the variables

Hypothesis is accepted because the probability value is 0.2780, which is greater than .05. Thus the hypothesis that there is no co integrating variable is accepted.

H02: There is at most one co integration variable.

Hypothesis is accepted because the probability value is 0.1918, which is greater than .05. Thus the hypothesis that there is at most 1 co integrating variable is accepted.

H03: There are at most two co integrating variables

Hypothesis is accepted because the probability value is 0.0752, which is more than .05. Thus the hypothesis that there is at most two co integrating variable is accepted.

Normalized co integrating coefficients (standard error in parentheses)

IBR	UKB	NSE
1.000000	10.49727	0.000762
	(3.55656)	(0.00019)

The long term Co integrating Equation for generating the value of Exchange rate is:

$$IBR = 10.49727UKB + 0.000762NSE$$

This equation shows that by changing the level by 10.49 times UKB and 0.0007 times NSE, one can generate the Value for IBR.

Conclusion: The present study covers the analysis in respect to volatility of IBR. The data used in this study were collected from the period of 01 July 2010 to 01 July 2013. Long term co integration is calculated for identifying the factors which affect the IBR. The Trace test as well as Max Eigen value test shows that there are at most three factors which affect the IBR. The long term co integrating Equation is also suggested taking into the test results. The results draw some concluding observations that the UKB and NSE have positive impact on IBR.

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