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Research Article

A Study On The Interest Rates And Stock Prices: Evidence From Indian Stock Exchanges

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ABSTRACT

Stock markets are one of the sources of finance for corporate sector to access permanent or long term capital from corporate view and one of the investment plat form which offers high returns and risk to the investors. In the present study, interest rates are independent variable and Nifty 50 and Bank Nifty as returns as dependent variables. The study period consists of ten years i.e. 2013-2014 to 2022-2023 and 120 months. RBI monitored monetary policy and interest rates 60 times during this ten years, it changed interest rates nearly 36 times and 24 times kept unchanged. The study adopted descriptive statistics (mean, minimum, maximum and standard deviation), correlation and regression statistics. The statistical result supported alternative hypothesis and result null hypothesis, which implied that change in bank rates have singnificant negative correlation between change in bank rate (CBR) and Nifty returns (NFR) and nifty bank returns (NBR) during the study period.

Keywords: Bank rate, Nifty returns and bank nifty returns, correlation between interest rates and stock market indices

Introduction

The monetary policy is one of the economic policies framed by the central bank to regulate the credit in the economy through interest rates such as bank rate, repo rate, reverse repo rate, cash reserve ratio and statutory liquidity ratio and other importance elements. The aim of the monetary policy is price stabilization through directing the interest rates either upwards or down wards. In general, the inflation is (rise in general price levels) is common phenomenon in growing economy, but, it is good sign in short term but negative sign in the long run. Therefore, central bank interferes in the economy to give temporary break to inflation and maintain consistency in price levels.
In India, monetary policy is framed by the Reserve Bank of India and subject to revision of maximum six times in a year with regular periodical intervals. The interest rates are strong drivers of economy growth particularly in developing countries where bank credit is one of the major sources of credit to the corporate sector. If interest rates are lower, it leads to easy credit to corporate sector, high production activities, high employment, rise in income levels, new demand for product and services and ultimately causes the inflation. If , this inflation exists in the economy over a period of time it erodes the purchasing power of money and shows adverse impact on the individual income and entire nation even leads to country's liquidation. To address this situation, central banks interfere and frame increase interest rates and leads to tight credit temporarily and reduce productively activities, fall in income levels and reduce demand for the products and services.

Stock markets are one of the sources of finance for corporate sector to access permanent or long term capital from corporate view and one of the investment plat form which offers high returns and risk to the investors. The stock markets are influenced by the various economic, industrial and company factors both in short term and long run, among them interest rates movements are strong determinants of stock market volatility. In general, down trend in interest rates boost the stock market and higher interest rates contrast the growth in stock markets. Therefore, present study emphasizes on the study on the interrelationship between interest rates and stock market movements in the context of Indian stock exchange i.e. National stock exchange (NSE) NIFTY 50.

REVIEW OF LITERATURE:

Silva (2016), analyzed the relationship between inflation rate and the stock prices for the ten years of period (2004-2014) where inflation rate is used as independent variable and share price index as the dependent variable. The study adopted correlation and linear regression model. The outcome the study witnessed a negative relationship between inflation rate and stock prices.

Flannery and james (2012) Study influence of change in interest rates on the value of companies has given rise to a prolific research activity during the past few decades. The bulk of this literature has concentrated on the banking industry due to the peculiar nature of the financial intermediation business. In particular the maturity mismatch identified as the main factor responsible for the high interest rate.

Alam and Uddin (2009) examined the interrelationship between interest rates and share prices and changes in interest rates and change in stock prices for the period of 1988-2003 (monthly data) in the case of 15 developed and developing countries. The study found significant negative relationship between interest rates and stock prices. Thus, interest rate is considerably controlled for these countries, it will be the great benefit of these countries' stock exchange through demand pull way of more investors in share market, and supply push way of more extensional investment of companies.

Aydemir and Demirhan (2009) found that there is a bi-directional relationship between interest rate and all the stock market indices in Turkey. There are mixed, positive and negative, causality results from some of the stock market indices to the interest rate. However, there is only negative causal relationship from interest rate to all stock market indices.

Mahmudul & Gazi, **(2009)** investigated that no direct association between annual percentage rate and cost of shares at Chile, Canada, Australia, Bangladesh, Colombia, Italy, Germany, Japan, Mexico, Malaysia, Jamaica, Venezuela, Spain and South Africa. They further contended that indirect significant link among rate of interest changes and share price changes.

Bernanke and Kuttner (2005) studies that price of a stock is a function of its monetary value and the perceived risk in holding the stock. A stock is attractive if the monetary value it bears is high., On the contrary, a stock is unattractive if the perceived risk is high. The study found that the money supply affects the stock market through its effect on both the monetary value and the perceived risk.

Hsing (2004) adopts a structural VAR model that allows for the simultaneous determination of several endogenous variables such as, output, real interest rate, exchange rate, the stock market index and found that there is an inverse relationship between stock prices and interest rate.

Okeahalam (2000) study in South Africa, Botswana and Zimbabwe stock market revealed that higher interest rates are hypothesized to depress stock prices through the substitution effect (interest-bearing assets become more attractive relative to shares), an increase in the discount rate (and hence a reduced present value of future expected returns).

Material and methods

The main objective of the study is to examine the impact of interest rates changes on the returns of selected indices in Indian stock markets. Present study used the secondary data as research data published in most reliable sources such as central bank of India (RBI) and stock exchanges of India (NSE. The interest rates are independent variable and Nifty 50 and Bank Nifty as returns as dependent variables. The study period consists of ten years i.e. 2013-2014 to 2022-2023 and 120 months. RBI monitored monetary policy and interest rates 60 times during this ten years, it changed interest rates nearly 36 times and 24 times kept unchanged. The study adopted descriptive statistics (mean, minimum, maximum and standard deviation), correlation and regression statistics. The data analysis is done through SPSS.

Quantitative data analysis has been used in this research. This research uses descriptive analysis inaddition to correlation and regression analysis which is applied to develop the association among dependent and independent variables. The inferences have been drawn on the basis of regression analysis and the decision on hypothesis was determined through ANOVA. The following regression equation has been used:

$Y=a+ bX+e$

Wherever,

Y=dependent-variable

X = independent-variable a = Y-intercept b = beta/ slope of the line = error

Followingequationwilldeterminetheeffectofshort-termrateofinterestonstockprices:

Stock index returns=$a+b$ (Bank rate)+e

Table1: Variables Abbreviations

Sr. No.	Variables	Abbreviation
1	**Indices**	**NFR,BNR**
2.	CBR	CBR

Hypothesis

Null Hypothesis

H_0: Change in interest rates has insignificant impact on the returns of Nifty 50
$H_{0:}$ Change in interest rates has insignificant impact on the returns of Bank Nifty

Alternate Hypothesis

H_1: Change in interest rates has significant impact on the returns of Nifty 50
$H_{2:}$ Change in interest rates has significant impact on the returns of Bank Nifty

I. Result

At first, the outcomes of descriptive analysis are explained in the following table2.

Table2: Descriptive Summary Statistics

Descriptive Statistics					
	N	Minimum	Maximum	Mean	Std. Deviation
Change in Bank Rate	60	-.75	.50	-.0125	.32866
Nifty Returns	60	-4.38	1.63	-.3265	1.39945
Bank Nifty Returns	60	-5.94	1.47	-.5535	1.82286
Valid N (list wise)	60				

Table3: Correlation Matrix

Correlations				
		CBR	NFR	BNR
CBR	Pearson Correlation	1	-.393**	-.421**
	Sig. (2-tailed)		.002	.001
	N	60	60	60
NFR	Pearson Correlation	-.393**	1	-.945**
	Sig. (2-tailed)	.002		.000
	N	60	60	60
BNR	Pearson Correlation	-.421**	-.945**	1
	Sig. (2-tailed)	.001	.000	
	N	60	60	60
**. Correlation is significant at the 0.01 level (2-tailed)				

Table4: Model Summary[b]

Model	**R**	**RSquare**	**Adjusted RSquare**	**Std. Error of theEstimate**	**ChangeStatistics**			
					R SquareChange	F Change	df1	Sig. FChange
1	.769[a]	.725	.706	789.1666	.703	10.573	1	.002
2	.698[a]	.663	.652	693.2563	.636	2.520	1	.001

a. Predictors:(Remain Fixed), CBR
b. Dependent Variable: NFR, BNR

Table5:ANOVA[a]

Model		**Additionof Squares**	**Df**	**MeanSquare**	**F**	**Sig.**
1	Regression	17.816	1	17.816	10.573	.002[b]
	Residual	97.734	58	1.685		
	Total	115.550	59			
2	Regression	37.807	1	34.807	12.520	.001[b]
	Residual	161.240	58	2.780		
	Total	196.047	59			

a. DependentVariable: NFR, BNR
Predictors:(Constant),CBR

Table6: Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std.Error	Beta		
1	(Constant)	-.306	-1.68		-1.822	.074
	BR	1.672	.514	.393	3.253	.002
	(Constant)	-.524	.215		-2.434	.018
	BR	2.337	.660	.421	3.538	.001

a. Dependent Variable: NFR and BNR
b. Predictor(constant),CBR

DISCUSSION ON RESULT

In the study, total 60 observations are made from each variable of change in bank rate, nifty fifty returns and nifty bank returns i.e. total 180 observations are done. In descriptive statistics the study found that, mean, minimum and maximum values of changes in bank rates such as -.0125, -.75 and .50 respectively and standard deviation of .32866. Similarly, mean, minimum and maximum values of changes in nifty returns are (NFR)-.3265,-4.38 and 1.63 and standard deviation of 1.39945. Similarly, mean, minimum and maximum values of changes in nifty bank returns (NBR) are -.3265,-4.38 and 1.63 and standard deviation of 1.39945. The correlation matrix revealed that, there is significant negative correlation value between CBR and NFR is i.e. -.393 at one percent significant level. Similarly, there is significant negative correlation between CBR and BNF is -.421. In regression analysis, model square, ANOVA and coefficient tables are revealed. In model summary, The R adjusted square value is .725 and .663 which indicates that CBR explains the 72.5 percent of variation in nifty returns and 66.30 percent variation in bank nifty returns. The Sign values of the between CBR and NFR is .002 which is less than the standard value of 0.05 which indicates significant correlation between CBR and NFR. Similarly. The sign value between CBR and NBR is .002 which is less than the standard value of 0.05 which indicates significant correlation between CBR and NBR. In coverall, the study accepted alternative hypothesis in two cases and rejected null hypothesis.

CONCLUSION

Stock markets are one of the sources of finance for corporate sector to access permanent or long term capital from corporate view and one of the investment plat form which offers high returns and risk to the investors. In the present study, interest rates are independent variable and Nifty 50 and Bank Nifty as returns as dependent variables. The study period consists of ten years i.e. 2013-2014 to 2022-2023 and 120 months. RBI monitored monetary policy and interest rates 60 times during this ten years, it changed interest rates nearly 36 times and 24 times kept unchanged. The study adopted descriptive statistics (mean, minimum, maximum and standard deviation), correlation and regression statistics. The statistical result supported alternative hypothesis and result null hypothesis, which implied that change in bank rates have significant negative correlation between change in bank rate (CBR) and Nifty returns (NFR) and nifty bank returns (NBR) during the study period.

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