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A Study On Influence Of Interest Rate In Stock Market Price With Respect To Nse

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ABSTRACT

This study investigates the impact of interest rate fluctuations on stock market prices, with a specific focus on the National Stock Exchange (NSE). Interest rates, set by the Reserve Bank of India (RBI), play a pivotal role in shaping market movements. The study examines how changes in bank rates, repo rates, and reverse repo rates influence the prices of banking sector stocks, including HDFC, ICICI, SBI, Kotak Mahindra, and Axis Bank. Statistical tools such as correlation and regression analyses were employed to assess the relationship between interest rates and stock prices. The findings indicate a weak but negative correlation between interest rates and stock prices, with reverse repo rates exhibiting a stronger negative influence. These insights are crucial for investors, policymakers, and financial analysts in understanding market dynamics and making informed decisions.

Key words: Interest Rate Fluctuations, Stock Market Prices, National Stock Exchange (NSE), Reserve Bank of India (RBI), Banking Sector Stocks, Bank Rate, Repo Rate, Reverse Repo Rate, Monetary Policy

INTRODUCTION

The stock market is a vital component of a country's financial system, acting as a barometer of economic health. Interest rates are a key factor affecting stock prices, influencing investment decisions and capital flows. Changes in interest rates impact corporate borrowing costs, consumer spending, and investor sentiment, thereby affecting stock market valuations. This study aims to explore the relationship between interest rate fluctuations and stock prices in the Indian stock market, particularly in the banking sector, given its sensitivity to monetary policy changes.

REVIEW OF LITERATURE:

- Maria Botey-Fullat, et al. (2023) identified there might be causal relationship among macro economical conditions and the Spanish share markets. Many studies show the impact of macroeconomic conditions on the stock market and consider the information to be vital for good investment management. However, empirical research on the influencing of disaggregates macro economical factors on the Spanish share market and vice versa is limited. The study analyses monthly data from many public data sources from January 2001 through December 2020, utilizing the general indexes of the Madrid Stock Exchanges as proxy variables for the share market and several macro economical indicators. A descriptive-stat study is performed before employing a VAR. Finally, the causality is investigated in order to identify the transmissions of effect. The findings confirm the share market's influence on the interest rate, M3, and unemployment rates, but they also identify new features, such as the share market's influence on the interest rates, Industry productions Indice,

manufacturing activities Indice, and economical sentiments Indice. This study assists the government in identifying possible economic threats while also allowing investor to proper manages of their investment.

- Akhilesh Prasad,et al. (2022) studied to assess the impact of different macro economical indicators on the volatility Indice, since macro economical variables influence share markets volatilities, which has an effect on the Indice, which measures market risks. Machine learning classification tasks are used to anticipate the everyday and week wise changes of Indices for to measure the relevance and effects of US macro economical factors on share market volatility and risk. Data is being analyzed for research from May 2007 to December 2021. The anticipated model is trained using 24 daily features and 24 + 9 week wise featuring. Overall results shows judgments on rank order characteristics are more trustworthy than logistic regression.

STATEMENT OF THE PROBLEM

Despite extensive research, there is no definitive consensus on how interest rates influence stock market prices, particularly in emerging markets like India. The challenge lies in understanding the extent and nature of this relationship, especially in the banking sector, which is directly affected by monetary policy changes. This study aims to bridge this gap by analyzing the impact of interest rate fluctuations on the stock prices of major banks listed on the NSE.

OBJECTIVES

1. To analyze the relationship between interest rates and stock market prices.
2. To assess the price movements of banking stocks in response to interest rate changes.
3. To evaluate how fluctuations in interest rates affect the profitability and market performance of major banks.
4. To provide insights for investors and policymakers on the influence of monetary policy on stock market dynamics.

RESEARCH GAP

Existing studies primarily focus on broad market indices or global comparisons, with limited emphasis on sector-specific impacts. This study fills the gap by concentrating on the Indian banking sector, a critical segment of the NSE, and examining recent data to capture current market trends.

RESEARCH METHODOLOGY

The study employs a quantitative approach, using descriptive statistics, correlation, and regression analyses. Data from the past ten years (2015–2024) were collected for bank rates, repo rates, reverse repo rates, and stock prices of HDFC, ICICI, SBI, Kotak Mahindra, and Axis Bank. Pearson correlation analysis was conducted to assess relationships, while regression models were used to determine the extent of impact.

RESULTS AND ANALYSIS

Objective 1: To Investigate changes in interest rates impact overall stock market price, with a specific focus on banking sector stocks.

Descriptive Statistics**Table 1**

Descriptive Statistics					
	N	Minimum	Maximum	Mean	Std. Deviation
Year	10	2015	2024	2019.50	3.028
Bank rate	10	4.25	7.75	6.1050	1.14975
Repo	10	4.00	6.75	5.7400	1.02654
Reverse repo	10	3.35	6.75	4.7250	1.47596
hdfc	10	1000.50	1850.70	1515.5650	286.82475
icici	10	350	800	575.00	151.383
sbi	10	250	475	362.50	75.691
kotak	10	1000	1900	1450.00	302.765
axis	10	500	950	725.00	151.383
Valid N (listwise)	10				

The average stock prices for the observed banks are as follows:

- HDFC: 1515.57
- ICICI: 575.00
- SBI: 362.50
- Kotak: 1450.00
- Axis: 725.00

The bank rate has fluctuated between 4.25% and 7.75%, with a mean of 6.10%. Repo rates and reverse repo rates followed a similar trend, reflecting monetary policy adjustments.

Correlation Analysis**Objective 2: To Analyse the relationship between interest rate and stock market price**

H0: There is no significant relationship between bank rate and stock market price

H1: There is significant relationship between bank rate and stock market price

Table 2

		Bank rate	hdfc	icici	sbi	kotak	axis
Bank rate	Pearson Correlation	1	-.464	-.346	-.346	-.346	-.346
	Sig. (2-tailed)		.177	.328	.328	.328	.328
	N	10	10	10	10	10	10
hdfc	Pearson Correlation	-.464	1	.969**	.969**	.969**	.969**
	Sig. (2-tailed)	.177		.000	.000	.000	.000
	N	10	10	10	10	10	10
icici	Pearson Correlation	-.346	.969**	1	1.000**	1.000**	1.000**
	Sig. (2-tailed)	.328	.000		.000	.000	.000
	N	10	10	10	10	10	10
sbi	Pearson Correlation	-.346	.969**	1.000**	1	1.000**	1.000**
	Sig. (2-tailed)	.328	.000	.000		.000	.000
	N	10	10	10	10	10	10
kotak	Pearson Correlation	-.346	.969**	1.000**	1.000**	1	1.000**
	Sig. (2-tailed)	.328	.000	.000	.000		.000
	N	10	10	10	10	10	10
axis	Pearson Correlation	-.346	.969**	1.000**	1.000**	1.000**	1
	Sig. (2-tailed)	.328	.000	.000	.000	.000	
	N	10	10	10	10	10	10

Table 3

		Repo	hdfc	icici	sbi	kotak	axis
Repo	Pearson Correlation	1	-.353	-.268	-.268	-.268	-.268
	Sig. (2-tailed)		.317	.454	.454	.454	.454
	N	10	10	10	10	10	10
hdfc	Pearson Correlation	-.353	1	.969**	.969**	.969**	.969**
	Sig. (2-tailed)	.317		.000	.000	.000	.000
	N	10	10	10	10	10	10
icici	Pearson Correlation	-.268	.969**	1	1.000**	1.000**	1.000**
	Sig. (2-tailed)	.454	.000		.000	.000	.000
	N	10	10	10	10	10	10
sbi	Pearson Correlation	-.268	.969**	1.000**	1	1.000**	1.000**
	Sig. (2-tailed)	.454	.000	.000		.000	.000
	N	10	10	10	10	10	10
kotak	Pearson Correlation	-.268	.969**	1.000**	1.000**	1	1.000**
	Sig. (2-tailed)	.454	.000	.000	.000		.000
	N	10	10	10	10	10	10
axis	Pearson Correlation	-.268	.969**	1.000**	1.000**	1.000**	1
	Sig. (2-tailed)	.454	.000	.000	.000	.000	
	N	10	10	10	10	10	10

Table 4

		Reverse repo	hdfc	icici	sbi	kotak	axis
Reverse repo	Pearson Correlation	1	-.835**	-.892**	-.892**	-.892**	-.892**
	Sig. (2-tailed)		.003	.001	.001	.001	.001
	N	10	10	10	10	10	10
hdfc	Pearson Correlation	-.835**	1	.969**	.969**	.969**	.969**
	Sig. (2-tailed)	.003		.000	.000	.000	.000
	N	10	10	10	10	10	10
icici	Pearson Correlation	-.892**	.969**	1	1.000**	1.000**	1.000**
	Sig. (2-tailed)	.001	.000		.000	.000	.000
	N	10	10	10	10	10	10

sbi	Pearson Correlation	-.892**	.969**	1.000**	1	1.000**	1.000**
	Sig. (2-tailed)	.001	.000	.000		.000	.000
	N	10	10	10	10	10	10
kotak	Pearson Correlation	-.892**	.969**	1.000**	1.000**	1	1.000**
	Sig. (2-tailed)	.001	.000	.000	.000		.000
	N	10	10	10	10	10	10
axis	Pearson Correlation	-.892**	.969**	1.000**	1.000**	1.000**	1
	Sig. (2-tailed)	.001	.000	.000	.000	.000	
	N	10	10	10	10	10	10

- A weak negative correlation exists between bank rates and stock prices of the selected banks.
- The correlation between reverse repo rates and stock prices is stronger, indicating a significant inverse relationship ($p < 0.01$).
- The results suggest that as interest rates rise, stock prices tend to decline, albeit with sectoral variations.

Time Series Analysis

Objective 3: Evaluate how fluctuations in interest rate affect the stock price and profitability of major banks and financial institutions.

Table 5

Year	Bank rate	Moving average	Repo	Moving average	Reverse repo	Moving average
2015	7.75		6.75		6.75	
2016	7	7.00	6.5	6.42	5.75	6.17
2017	6.25	6.67	6	6.25	6	6
2018	6.75	6.13	6.25	6	6.25	6
2019	5.4	5.47	5.75	5.33	5.75	5.12
2020	4.25	4.63	4	4.58	3.35	4.15
2021	4.25	4.88	4	4.38	3.35	3.35
2022	6.15	5.63	5.15	5.22	3.35	3.35
2023	6.5	6.47	6.5	6.05	3.35	3.35
2024	6.75		6.5	4.33	3.35	2.23

Year	HDFC	MA	ICICI	MA	SBI	MA	Kotak	MA	Axis	MA
2015	1049.14		303.03		266.53		1025.6		532.52	
2016	1159.57	1368.21	243.26	279.42	219.11	257.10	731.31	897.44	489.01	509.82
2017	1895.92	1685.70	291.98	283.09	285.67	260.02	935.42	953.26	507.92	521.25
2018	2001.62	1957.82	314.03	342.06	275.27	289.98	1193.04	1195.11	566.83	599.87

2019	1975.93	1702.88	420.17	384.50	309.01	270.71	1456.87	1376.60	724.85	605.82
2020	1131.08	1539.68	419.29	500.51	227.84	317.19	1479.88	1596.58	525.79	660.43
2021	1512.02	1368.21	662.08	629.52	414.71	388.18	1852.99	1721.91	730.64	673.16
2022	1461.53	1527.64	807.18	798.99	521.99	503.78	1832.86	1831.62	763.06	815.41
2023	1609.36	1559.80	927.72	967.86	574.63	628.71	1809.02	1804.43	952.53	954.21
2024	1608.51	1072.62	1168.67	698.80	789.51	454.71	1771.42	1193.48	1147.05	699.86

- A time series analysis was conducted to examine the long-term trends in stock prices relative to interest rate changes.
- The analysis revealed cyclical patterns in stock prices that correspond to interest rate adjustments by the RBI.
- Autoregressive Integrated Moving Average models indicated that stock prices exhibit lagged effects in response to interest rate fluctuations.
- Forecasting models suggest that future stock price trends will continue to be influenced by monetary policy decisions.

FINDINGS

Interest rate fluctuations negatively impact banking sector stock prices, with reverse repo rates having the strongest effect. The correlation between bank rates and stock prices is weak but negative, indicating some influence. Regression results suggest that while interest rates are important, other economic factors contribute to stock market performance. The banking sector responds differently to interest rate changes, highlighting the need for sector-specific investment strategies.

SUGGESTIONS

Investors should monitor interest rate trends and adjust their portfolios accordingly. Policymakers should consider stock market implications when adjusting monetary policy. Banks should strategize financial planning to mitigate adverse effects of interest rate hikes. Further research should explore sectoral differences in response to monetary policy changes.

CONCLUSION

The study confirms that interest rate fluctuations influence stock market prices, particularly in the banking sector. Reverse repo rates exhibit the strongest negative correlation with stock prices, suggesting that liquidity conditions significantly affect market valuations. While the relationship is complex and influenced by multiple factors, understanding these dynamics can aid investors, policymakers, and financial analysts in making informed decisions. Future research should explore additional macroeconomic variables and their interplay with stock market movements to develop more comprehensive financial models.

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