



TECHNICAL ANALYSIS OF BANKING SECTOR STOCKS: A STUDY OF MARKET TRENDS AND INVESTMENT STRATEGIES

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Abstract: This study explores the application of technical analysis in understanding and managing the fluctuations in market trends within the banking sector. Focusing on five key securities—ICICI Bank, HDFC Bank, AXIS Bank, Union Bank of India, and State Bank of India—this research examines the relationship between risk and return, factors contributing to stock price volatility, and optimal timing for investment decisions. Using tools such as the Rate of Change (ROC) and Relative Strength Index (RSI), the study identifies patterns and trends that inform strategic buying, holding, or selling of shares. Findings reveal a common trend of decreased ROC in October across all analyzed stocks, with specific recommendations for each security based on their RSI values. This research provides valuable insights for investors, speculators, and students, enhancing their understanding of market dynamics and supporting informed investment strategies.

Keywords: Technical Analysis, Banking Sector, Rate of Change, Relative Strength Index, Stock Market Trends, Investment Strategies.

I. INTRODUCTION

The banking sector plays a pivotal role in the financial ecosystem, serving as a backbone for economic development and stability. With the growing complexity of financial markets, the need for informed investment strategies has become more crucial than ever. One such approach that has gained prominence is technical analysis, which involves evaluating securities by analyzing statistical trends gathered from trading activity, such as price movement and volume. This method contrasts with fundamental analysis, which focuses on a company's financial health and external economic factors.

Technical analysis is rooted in the belief that all relevant information is already reflected in the stock's price.

Therefore, by studying past market data, investors can predict future price movements. This technique is especially useful in markets characterized by high volatility, such as the stock market, where investors and traders continually seek opportunities to capitalize on market fluctuations.

The Relevance of Technical Analysis in the Banking Sector

The banking sector, being a crucial part of the economy, is often influenced by various macroeconomic factors, including interest rates, inflation, and regulatory policies. These factors, in turn, affect the stock prices of banking institutions. Given the dynamic nature of these influences, technical analysis becomes a valuable tool for investors looking to navigate the complexities of the banking sector.

In this study, we focus on five major banks: ICICI Bank, HDFC Bank, AXIS Bank, Union Bank of India, and State Bank of India. These banks represent a significant portion of the Indian banking sector and have a substantial impact on the overall market trends. By applying technical analysis tools such as the Rate of Change (ROC) and Relative Strength Index (RSI), we aim to uncover patterns and trends that can guide investors in making informed decisions.

Understanding Technical Analysis Tools

Rate of Change (ROC): The Rate of Change (ROC) is a momentum oscillator that measures the percentage change between the current price and the price a specified number of periods ago. It is a simple yet effective tool for identifying the speed at which a stock's price is changing. A positive ROC indicates an upward trend, while a negative ROC suggests a downward trend. For banking stocks, where market conditions can shift rapidly, ROC helps investors gauge the momentum and decide whether to buy, hold, or sell a security.

Relative Strength Index (RSI): The Relative Strength Index (RSI) is another popular momentum indicator used in technical analysis. It measures the magnitude of recent price



changes to evaluate overbought or oversold conditions in a stock. RSI values range from 0 to 100, with values above 70 indicating that a stock may be overbought (and potentially overvalued), and values below 30 suggesting that it may be oversold (and potentially undervalued). For investors in the banking sector, RSI provides a clear signal on the optimal timing for entering or exiting a position in a particular stock.

II. REVIEW OF LITERATURE

Several studies have focused on the application of technical analysis within the banking sector, particularly in understanding stock price movements and predicting future trends. Technical analysis tools like the Relative Strength Index (RSI) and Moving Averages have been widely used to identify buy and sell signals in banking stocks. Tlustý (2022) found that technical analysis could effectively identify price patterns and trends in banking stocks, leading to better investment decisions. Garg and Mittal (2020) compared different technical indicators such as Moving Averages, Bollinger Bands, and the MACD across several banking stocks. Their research highlighted that while some indicators provided strong predictive power during certain periods, they often gave mixed signals, indicating the need for combining multiple indicators for more reliable results. Kumar and Roy (2019) explored the relationship between macroeconomic factors and the performance of banking stocks. Their research suggested that technical analysis should be complemented with an understanding of macroeconomic variables like interest rates and inflation, which have significant effects on banking stock prices. Despite its popularity, technical analysis has its limitations, particularly in highly volatile markets. Singh and Kapoor (2021) argued that technical analysis should not be used in isolation but rather in conjunction with fundamental analysis. Their study pointed out that purely technical strategies often fail to account for sudden market shocks or changes in economic policy. The use of artificial intelligence and machine learning in enhancing technical analysis was explored by Ramesh and Saini (2023). They demonstrated how AI algorithms could improve the accuracy of technical indicators by learning from vast amounts of historical data and adapting to changing market conditions. The Rate of Change (ROC) is a momentum oscillator that measures the percentage change in price over a specified period. According to Singh and Kumar (2018), ROC is effective in identifying trend reversals and momentum shifts in stock prices. The study "The Impact of Momentum Indicators on Stock Market Predictions" highlights ROC's ability to signal overbought or oversold conditions, which is crucial for decision-making in volatile markets. The Relative Strength Index (RSI) measures the speed and change of price movements. Lee and Kim (2020) discuss RSI's role in identifying potential buy or sell signals by comparing the magnitude of recent gains to recent losses.

Their paper, "An Empirical Analysis of RSI for Investment Decision Making," suggests that RSI is effective in predicting short-term price movements and can guide investors on when to enter or exit the market. The banking sector's stock behavior is influenced by various macroeconomic factors, including interest rates and economic cycles. Patel and Desai (2019) explore how technical indicators, including ROC and RSI, perform within the banking sector in their study "Technical Analysis in Banking Stocks: An Empirical Study." Their findings indicate that while technical indicators are useful, they must be complemented with fundamental analysis to account for sector-specific factors. The Indian banking sector has shown diverse trends influenced by economic reforms and market conditions. Sharma and Raj (2021) analyze the effectiveness of technical indicators in the Indian context in "Evaluating Technical Analysis Tools for Indian Banking Stocks." Their research finds that indicators like ROC and RSI provide valuable insights, but their efficacy varies across different banking stocks and market conditions. Recent studies have compared various technical indicators' effectiveness in different market conditions. Patel and Mehta (2022) in "Comparative Analysis of Technical Indicators for Stock Market Predictions" argue that while individual indicators like ROC and RSI are useful, combining multiple indicators enhances prediction accuracy. This approach is especially relevant in volatile sectors like banking. Despite its popularity, technical analysis faces criticisms regarding its reliability and predictive power. Chen and Zhao (2023) address these concerns in "Challenges in Technical Analysis: Reliability and Predictive Power." The study suggests that while technical indicators provide valuable insights, they should be used with caution and in conjunction with other analytical methods to mitigate risks.

Need for the Study

The study of technical analysis is important for understanding and managing the fluctuations in market trends to achieve targeted financial gains. In a dynamic stock market environment, where investors and traders are constantly seeking opportunities to benefit from market volatility, this research provides valuable insights. It aims to assist investors, speculators, and students by offering information on various technical aspects of investing, including the identification of optimal times and prices for investment. The study also explores different chart patterns and trends that can help in making informed investment decisions under varying market conditions.

Scope of the Study

The primary focus of this research is on performing both fundamental and technical analysis. The scope of the study is limited to four securities within the banking sector, providing an overview of the financial industry and its



connection to the broader economy. The selected securities for analysis are:

- ICICI Bank
- HDFC Bank
- AXIS Bank
- United Bank of India
- Provincial Bank of India

The study involves an analysis of the banking sector, the Indian economy, the global economy, and a financial analysis of the selected securities.

Objectives of the Study

- To determine the relationship between risk and return.
- To understand the factors contributing to stock price volatility.
- To identify the reasons behind market movements.
- To determine the optimal timing for buying and selling stocks.
- To identify the appropriate moments for making investment decisions.

Research Methodology

The research will utilize a descriptive research design to thoroughly examine and present the topic, along with the key findings and conclusions.

Primary Sources

Data will be collected from original sources, including direct observations and first-hand information. This primary data will be gathered through questionnaires, in-person interviews with investors at various brokerage firms, and careful observation of investor behavior.

Secondary Sources

Secondary data, previously collected for other purposes, will also be utilized. This data will be sourced from relevant television programs, academic journals, reference books, and online platforms.

Tools & Techniques

For the technical analysis of banking stocks, the study will employ the following tools:

1. **Rate of Change (ROC):** A momentum oscillator that measures the percentage change in price between the current price and the price a specified number of periods ago.
2. **Relative Strength Index (RSI):** A momentum indicator that measures the speed and change of price movements, often used to identify overbought or oversold conditions in the market.

III. DATA ANALYSIS & INTERPRETATION

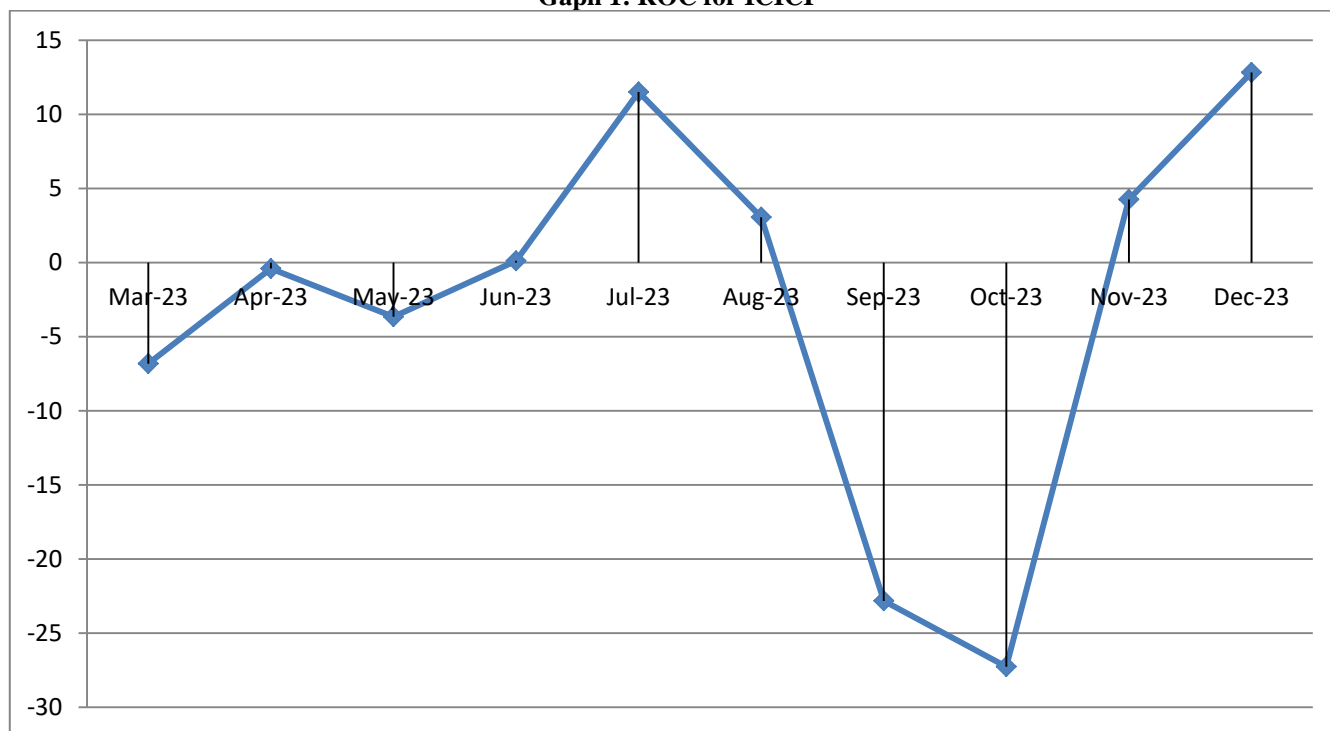
RATE OF CHANGE

Table1: ROC calculations for ICICI (NSE) between January and December of 2023.

Date	Price	ROC
Jan-2023	9,509.70	-----
Feb-2023	8,850.95	-----
Mar-2023	8,861.10	-6.82
Apr-2023	8,814.95	-0.40
May-2023	8,537.20	-3.65
Jun-2023	8,825.60	0.12
July-2023	9,520.55	11.51
Aug-2023	9,096.40	3.06
Sep-2023	7,347.95	-22.82
Oct-2023	6,616.40	-27.26
Nov-2023	7,661.60	4.26
Dec-2023	7,465.50	12.83



Gaph 1: ROC for ICICI



INTERPRETATION:

From March to May, when the ROC is negative, the stock price was falling. In June, July, and August, the relative strength index (ROC) was positive, indicating an upward trend in prices. September and October saw another shift in

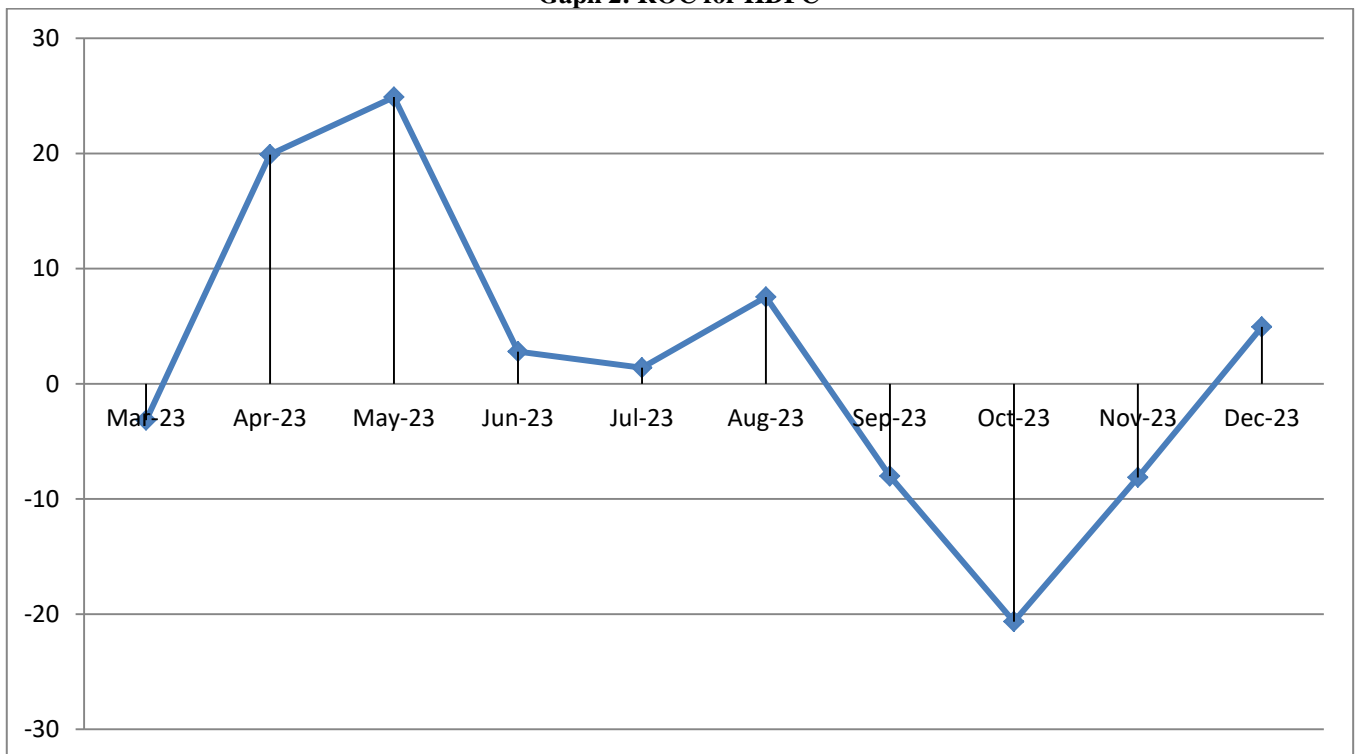
the pattern, this time toward negativity. The share price had positively increased in November and December. In December (12.83), the ROC was at its highest point, while in October (-27.26), it was at its lowest point.

Table 2: ROC computation for HDFC (NSE) from January 2023 to December 2023.

Date	price	ROC
Jan-2023	763.05	-----
Feb-2023	728.35	-----
Mar-2023	738.9	-3.16
Apr-2023	873.3	19.90
May-2023	922.95	24.90
Jun-2023	897.7	2.79
July-2023	935.95	1.40
Aug-2023	965.3	7.53
Sep-2023	860.95	-8.01
Oct-2023	765.95	-20.65
Nov-2023	790.9	-8.13
Dec-2023	803.85	4.94



Gaph 2: ROC for HDFC



INTERPRETATION:

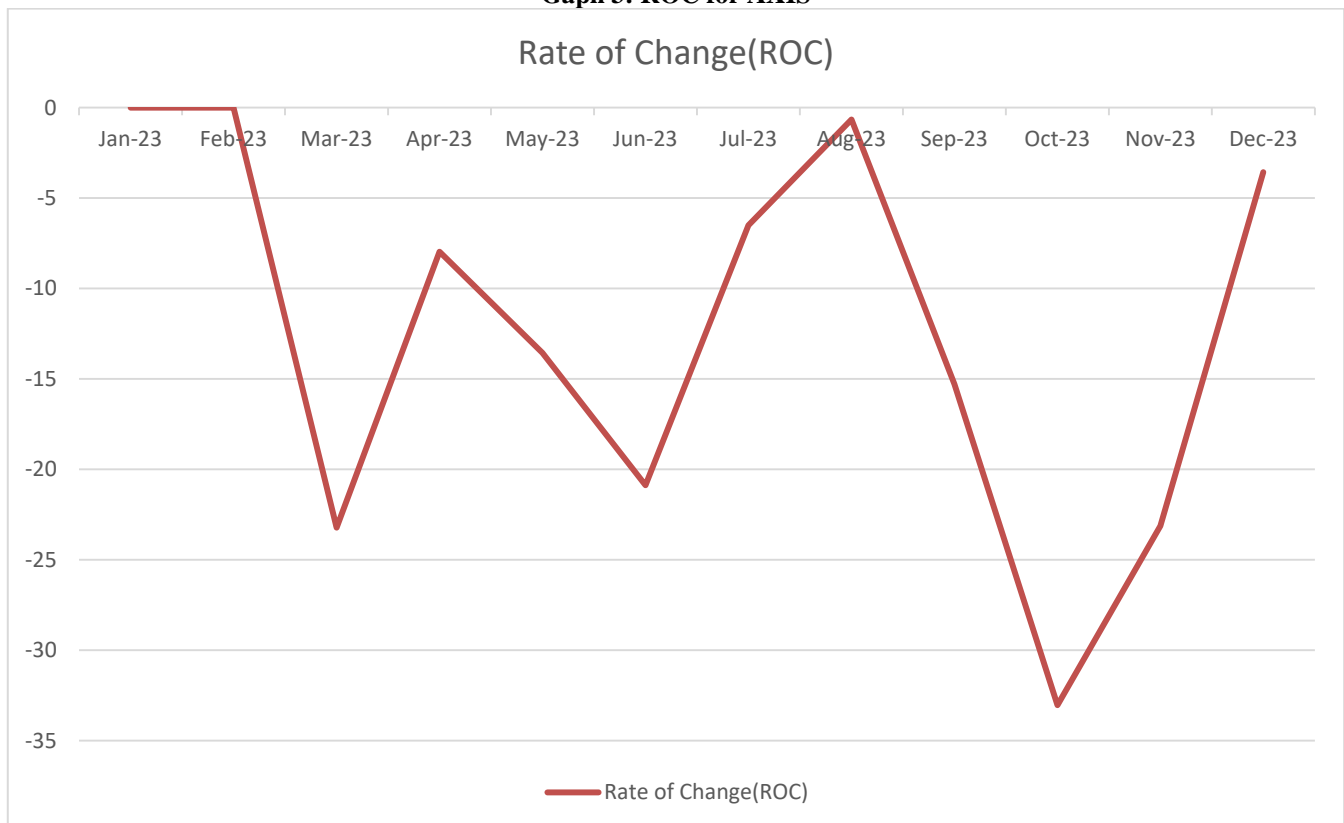
According to the negative Rate of Change (ROC), the stock price dropped in March. The ROC went positive from April to August, indicating an increase in the stock price. From September to November, though, the trend reversed and

went back to negative. There was an upward trend in the stock price in December. It is noteworthy that the ROC hit a major low of -20.65 in October after reaching an extraordinarily high of 24.90 in May.

Table 3: ROC Calculation for AXIS (NSE) between January and December of 2023.

Date	Price	Rate of Change(ROC)
Jan-2023	399.5	-----
Feb-2023	369.9	-----
Mar-2023	326.85	-23.23
Apr-2023	340.4	-7.97
May-2023	282.5	-13.56
Jun-2023	269.3	-20.88
July-2023	264.1	-6.51
Aug-2023	267.5	-0.66
Sep-2023	223.7	-15.29
Oct-2023	179.1	-33.04
Nov-2023	171.95	-23.13
Dec-2023	172.7	-3.57

Gaph 3: ROC for AXIS



INTERPRETATION:

Any given month in which the Rate of Change (ROC) is negative, the stock price decreases. October has a very low

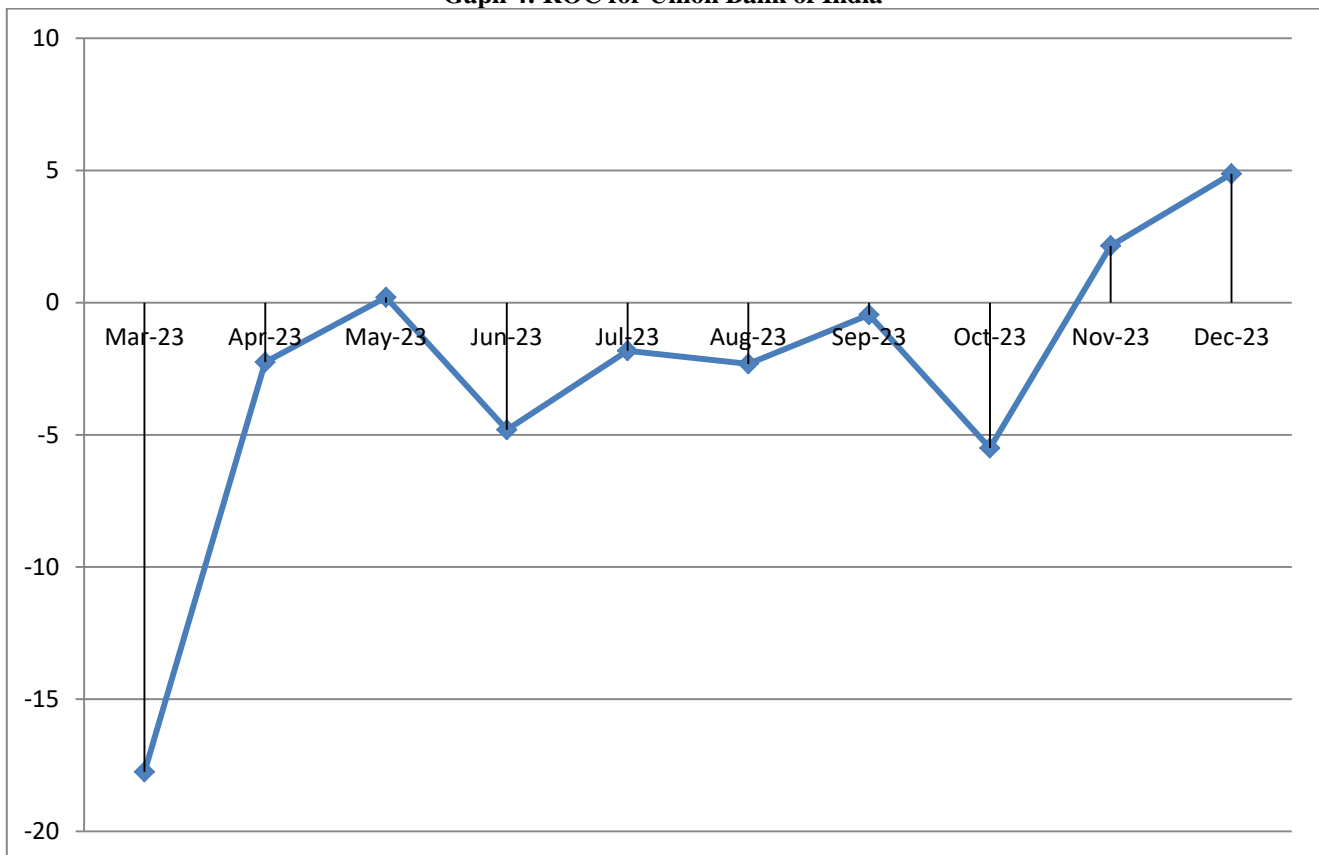
point of -33.04, making the ROC not high since every month is in the negative.

Table 4: ROC computation for Union Bank of India (NSE) from January 2023 to December 2023.

Date	Price	Rate of Change(ROC)
Jan-2023	3,337.15	-----
Feb-2023	3,020.60	-----
Mar-2023	2,744.70	-17.75
Apr-2023	2,952.60	-2.25
May-2023	2,750.30	0.20
Jun-2023	2,810.30	-4.81
July-2023	2,700.05	-1.82
Aug-2023	2,744.85	-2.32
Sep-2023	2,687.45	-0.46
Oct-2023	2,593.70	-5.50
Nov-2023	2,745.70	2.15
Dec-2023	2,720.15	4.87



Gaph 4: ROC for Union Bank of India



INTERPRETATION:

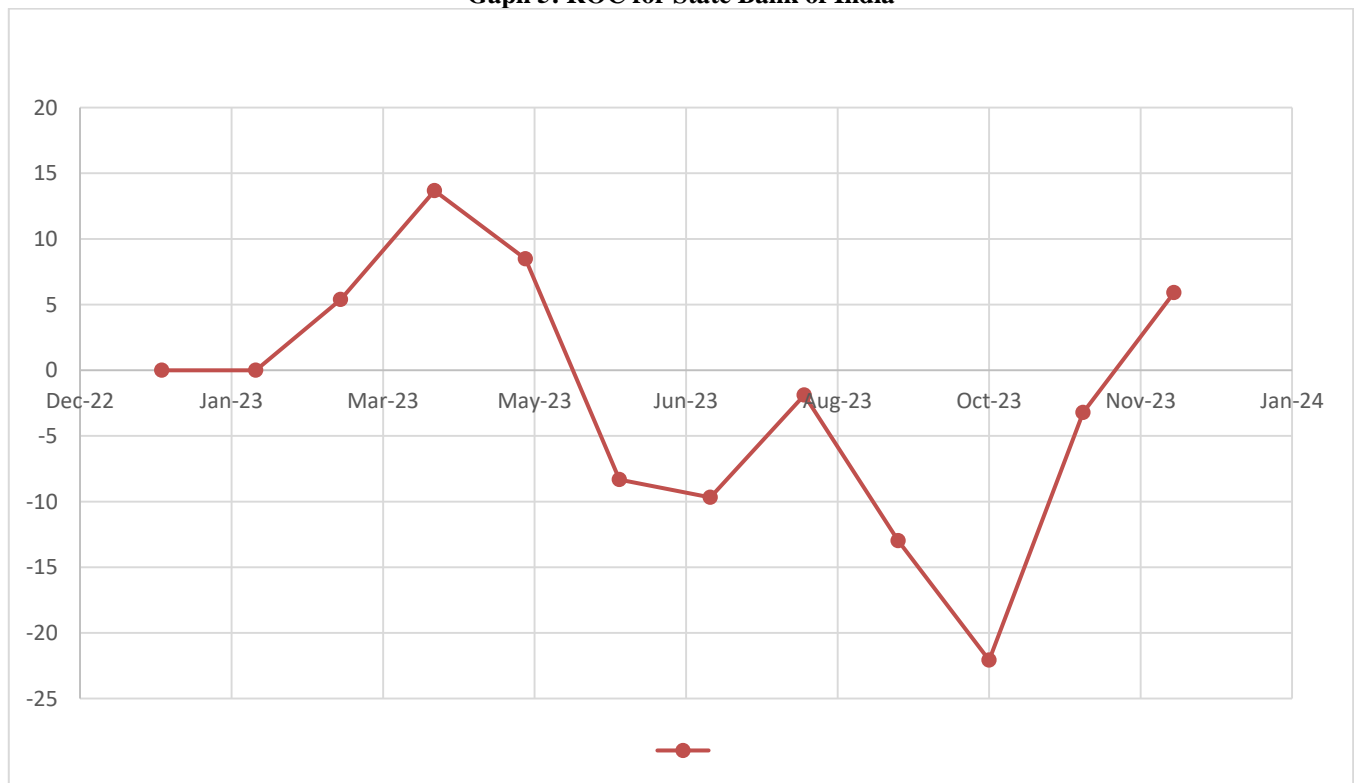
March and April saw a decline in the stock price and a negative Rate of Change (ROC). The ROC went positive in May, signifying an increase in the stock price. From June to

October, though, the trend reversed and went back to negative. There was a favorable increase in the share price in November and December. The ROC was very high in October at -17.75 and extremely low in December at 4.87.

Table 5: ROC computation for State Bank of India (NSE) from January 2023 to December 2023.

Date	Price	Rate of Change
Jan-2023	26,923.60	-----
Feb-2023	27,437.75	-----
Mar-2023	28,372.65	5.38
Apr-2023	31,238.60	13.67
May-2023	30,780.65	8.48
Jun-2023	28,590.45	-8.33
July-2023	27,798.55	-9.68
Aug-2023	28,059.75	-1.89
Sep-2023	24,235.40	-12.99
Oct-2023	21,864.60	-22.07
Nov-2023	23,405.30	-3.22
Dec-2023	23,158.35	5.91

Gaph 5: ROC for State Bank of India



INTERPRETATION:

The positive Rate of Change (ROC) indicates that the stock price increased throughout the period of March through May. The ROC became negative in June and remained

negative through November, indicating a decline in price. In December, the trend resumed its upward trajectory. At 13.67 in April, the ROC was noticeably high, and at -22.07 in October, it was very low.

RSI

Table 6: Calculation of RSI for ICICI (NSE) from Jan 2023 to Dec 2023.

Date	Price	Obtain	Diminished
Jan-23	9,509.70		
Feb-23	8,850.95		658.75
Mar-23	8,861.10	10.5	
Apr-23	8,814.95		46.15
May-23	8,537.20		277.75
Jun-23	8,825.60	288.4	
Jul-23	9,520.55	694.95	
Aug-23	9,096.40		424.15
Sep-23	7,347.95		1748.45
Oct-23	6,616.40		731.55
Nov-23	7,661.60		1045.2
Dec-23	7,465.50		196.1
AVERAGE		509.6	583.2



Calculation of Relative Strength (RS) = $\frac{\text{OBTAIN}}{\text{DIMINISHED}}$
 Obtain = 509.6 Diminished = 583.2
 $RS = \frac{509.6}{583.2} = 0.87$

Calculation of RSI = $100 - \frac{100}{1+RS}$
 $RSI = 100 - \frac{100}{1+0.87} = 100 - 53.4 = 46.6$

INTERPRETATION:

Given that the RSI ranges from 30 to 70, owning the shares is recommended. An indication to purchase is given by an RSI of less than 30, which indicates a strong upward trend. Selling is indicated if the RSI is more than 70. At 46.6, the RSI indicates that keeping the stock is warranted.

Table 7: Calculation of RSI for HDFC (NSE) from Jan 2023 to Dec 2023.

Date	Price	Obtain	Diminished
Jan-23	763.05		
Feb-23	728.35		34.7
Mar-23	738.9	10.55	
Apr-23	873.3	134.4	
May-23	922.95	49.65	
Jun-23	897.7		25.25
Jul-23	935.95	38.25	
Aug-23	965.3	29.35	
Sep-23	860.95		104.35
Oct-23	765.95		95
Nov-23	790.9	24.95	
Dec-23	803.85	12.95	
		42.8	64.8

Calculation of Relative Strength (RS) = $\frac{\text{OBTAIN}}{\text{DIMINISHED}}$
 Obtain = 42.8 Diminished = 64.8
 $RS = \frac{42.8}{64.8} = 0.66$

Calculation of RSI = $100 - \frac{100}{1+RS}$
 $RSI = 100 - \frac{100}{1+0.66} = 100 - 60.2 = 39.8$

INTERPRETATION:

Holding shares is indicated by the RSI falling between 30 and 70. A purchase signal is shown if the relative strength index (RSI) is less than 30, which indicates a strong rise. An indication to sell is given if the RSI is more than 70. The RSI number in this case is 39.8, indicating that retaining the shares is warranted.

Table8: Calculation of RSI for AXIS (NSE) from Jan 2023 to Dec 2023.

Date	Price	Obtain	Diminished
Jan-23	399.5		
Feb-23	369.9		29.6
Mar-23	326.85		43.05
Apr-23	340.4	13.55	
May-23	282.5		57.9
Jun-23	269.3		13.2
Jul-23	264.1		5.2
Aug-23	267.5	3.4	
Sep-23	223.7		43.8
Oct-23	179.1		44.6
Nov-23	171.95		7.15
Dec-23	172.7	0.75	
		5.9	30.5



Calculation of Relative Strength (RS) = $\frac{\text{OBTAIN}}{\text{DIMINISHED}}$
 Obtain = 5.9 Diminished = 30.5
 $RS = \frac{5.9}{30.5} = 0.19$

Calculation of RSI = $100 - \frac{100}{1+RS}$
 $RSI = 100 - \frac{100}{1+0.19} = 100 - 84.03 = 15.9$

INTERPRETATION:

Given that the RSI ranges from 30 to 70, owning the shares is recommended. An indication to purchase is given by an RSI of less than 30, which indicates a strong upward trend. Selling is indicated if the RSI is more than 70. It is now appropriate to purchase shares since the RSI value in this case is 15.9.

Table 9: Calculation of RSI for Union Bank of India (NSE) from Jan 2023 to Dec 2023.

Date	Price	Obtain	Diminished
Jan-23	3,337.15		
Feb-23	3,020.60		316.55
Mar-23	2,744.70		275.9
Apr-23	2,952.60	207.9	
May-23	2,750.30		202.3
Jun-23	2,810.30	60	
Jul-23	2,700.05		110.25
Aug-23	2,744.85	44.8	
Sep-23	2,687.45		57.4
Oct-23	2,593.70		93.75
Nov-23	2,745.70	152	
Dec-23	2,720.15		25.55
		116.1	154.5

Calculation of Relative Strength (RS) = $\frac{\text{OBTAIN}}{\text{DIMINISHED}}$
 Obtain = 116.1 Diminished = 154.5
 $RS = \frac{116.1}{154.5} = 0.75$

Calculation of RSI = $100 - \frac{100}{1+RS}$
 $RSI = 100 - \frac{100}{1+0.75} = 100 - 57.1 = 42.9$

INTERPRETATION:

The RSI indicates that keeping the shares is appropriate because it ranges from 30 to 70. A strong rise is indicated by an RSI of less than 30, which is a buy signal. It is a selling indication if the RSI is more than 70. That means it's time to hold the shares, since this RSI number is 42.9.

Table 10: Calculation of RSI for STATE BANK OF INDIA . (NSE) from jan 2023 to dec 2023.

Date	Price	Obtain	Diminished
Jan-23	26,923.60		
Feb-23	27,437.75	514.15	
Mar-23	28,372.65	934.9	
Apr-23	31,238.60	2815.95	
May-23	30,780.65		407.95
Jun-23	28,590.45		2190.2
Jul-23	27,798.55		791.9
Aug-23	28,059.75	261.2	
Sep-23	24,235.40		3874.35
Oct-23	21,864.60		2320.8
Nov-23	23,405.30	1540.7	
Dec-23	23,158.35		246.95
		1213.3	1638.6



$$\text{Calculation of Relative Strength (RS)} = \frac{\text{OBTAIN}}{\text{DIMINISHED}}$$

$$\text{Obtain} = 1213.3 \quad \text{Diminished} = 1638.6$$

$$\text{RS} = \frac{1213.3}{1638.6} = 0.74$$

$$\text{Calculation of RSI} = 100 - \frac{100}{1 + \text{RS}}$$

$$\text{RSI} = 100 - \frac{100}{1 + 0.74} = 100 - 57.5 = 42.5$$

INTERPRETATION:

The RSI is a suggestion to hold the stock because it ranges from 30 to 70. It is a buy signal if the RSI is less than 30, which indicates a strong rise. A selling signal is present if the RSI is more than 70. It's time to hold the shares in this case because the RSI number is 42.5.

Table 11: Consolidated Table for RSI:

SCRIPT	RSI	SIGNAL
ICICI	46.6	HOLD
HDFC	39.8	HOLD
AXIS	15.9	BUY
UNION BANK OF INDIA	42.9	HOLD
STATE BANK OF INDIA	42.55	HOLD

IV. FINDINGS

- **ICICI Bank:** The Rate of Change (ROC) for ICICI Bank was significantly high in December (12.83) and notably low in October (-27.26).
- **HDFC Bank:** HDFC Bank showed a very high ROC in May (24.90) and a very low ROC in October (-20.65).
- **AXIS Bank:** The ROC for AXIS Bank was consistently negative, with the lowest point in October (-33.04).
- **Union Bank of India:** The ROC for Union Bank of India peaked in December (4.87) and dipped in October (-17.75).
- **State Bank of India:** The ROC for State Bank of India was highest in April (13.67) and lowest in October (-22.07).

A common trend observed across all shares was the significant drop in ROC during October.

- **ICICI Bank:** The Relative Strength Index (RSI) value is 46.6, indicating a holding position for the shares.
- **HDFC Bank:** The RSI value is 39.8, suggesting the shares should be held.
- **AXIS Bank:** With an RSI value of 15.9, it is recommended to buy the shares.
- **Union Bank of India:** The RSI value is 42.9, indicating the shares should be held.
- **State Bank of India:** The RSI value is 42.5, also suggesting a holding position.

V. CONCLUSION

The study concludes that technical analysis effectively aids in understanding stock price movements and making informed investment decisions. The Rate of Change (ROC) analysis reveals a significant downturn in October across all

selected banking stocks, suggesting a common seasonal trend. Meanwhile, the Relative Strength Index (RSI) indicates that most of the stocks are in a holding phase, except for AXIS Bank, which presents a buying opportunity. The study emphasizes the importance of combining technical indicators with market trends to optimize investment strategies. Investors are advised to consider both ROC and RSI values alongside other market factors to enhance decision-making and achieve better financial outcomes.

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