

A Study on Bollinger band and RSI on Indian Stock Market

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Abstract:

Bollinger band and RSI can combinedly guide investors to take buy or sell decisions. Technical analysis helps investors to make decisions about the investment. Technical tools determine the future trend of the market. Bollinger band and RSI together can give indications about the market movement in future. This paper objective is to apply Bollinger band and RSI indicators to optimize the profit position of an investor. The results of this study show the buy and hold strategy for market analysis.

Keywords: Stock market, RSI, Bollinger band, Buy and hold, etc.

1. Introduction

Technical analysis uses the past data to predict the future price of the stock/market. Nowadays the use and scope of technical analysis increases, investors want to earn profit from investment in the share market for which technical analysis proves to be the best option. Technical analysis provides information like support, resistance, volatility, charts, price predictions etc., it identifies the trend reversal pattern and predicts the market movements. It determines the short term as well as long term patterns of the market.

Technical Tools used for study are:

RSI: RSI above 70 indicates an overbought situation shown with the red zone, so investors should start selling stocks/security. When RSI moves above 70 indicates that divergence is going to enter i.e., market will move in a downward trend. If RSI goes below 30 indicates that the market is facing an oversold situation shown with the green zone at this point investors should start buying stocks as the market will move in an upward direction.

$RSI = 100 - 100 / (1 + \text{Average loss} / \text{Average Gain})$

Bollinger Band: There are two bands: upper band and lower band. If price touches or moves above upper band then the market faces an overbought situation in which selling of stock/security is suggested to investors to earn profit. If price touches or moves below lower band than market faces an oversold situation in which buying of stock/security is suggested to investors to earn profit.

2. Review of Literature:

A. Kasera (2023) studied the contribution of MACD and RSI indicators for Indian investors' decision making to earn returns on investment. The period taken was April 2020 to March 2022 on selected stocks from the Indian market – Infosys, Mahindra and Mahindra, HDFC Bank.

G. Joseph, S. G. Das and A. Romeo (2015) studies the past five years Nifty Index. According to this study candlestick pattern is not sufficient to identify the trend of the market. Other technical tools should be used in support of candlestick patterns in order to predict the movement of the market. Investors should consider

other factors also before making an investment decision.

3. Research Methodology

The objective of study is to identify and optimize the use of Bollinger band and RSI indicators before taking investment decisions. The study is based on secondary data. Data is collected from NSE/BSE /chartink.com website. The study is based upon past data to analyze and interpret the movement of the market. The period of study is from Dec 2018 to Dec. 2023, of NIFTY, BANKNIFTY and NIFTY AUTO. The scope of study is limited. As only two technical tools are used i.e., Bollinger band and RSI for the study.

4. Data Analysis and Interpretation

NIFTY:



RSI: In the above figure RSI above 70 indicates an overbought situation shown with the red zone, so investors should start selling stocks/security. When RSI moves above 70 indicates now divergence is going to enter i.e., market will move in a downward trend. If RSI goes below 30 indicates that the market is facing an oversold situation shown with the green zone at this point investors should start buying stocks as the market will move in an upward direction.

Bollinger Band: There are two bands: upper band and lower band. If price touches or moves above upper band then market faces an overbought situation in which selling of stock/security is suggested to investors to earn profit. If price touches or moves below lower band then market faces an oversold situation in which buying of stock/security is suggested to investors to earn profit.

RSI supported by Bollinger band: When prices of security/stock touch or move above upper band and at the same time RSI crosses 70 then this is clear indication that security is overbought. Traders/Investors are suggested to sell the security as market price will move in a downward trend. – 13/3/19, 9/12/20, 3/8/22, 4/7/23, 15/9/23, 1/12/23 to 6/12/23, etc.,

RSI forming green zone (below 30) and price touches below lower Bollinger band then buyer is suggested to buy the security – 2/8/19, 3/3/20 to 24/3/20, 25/09/20, 10/5/22, 21/6/22. As the market will move in an upward trend.

BANK NIFTY:



RSI supported by Bollinger band:

When prices of security/stock touch or move above upper band and at the same time RSI crosses 70 (red zone) then this is clear indication that security is overbought. Traders/Investors are suggested to sell the security as market price will move in a downward trend. – 13/3/19 to 15/3/19, 5/11/20 to 17/11/20, 8/1/21, 3/2/21 to 5/2/21, 19/10/21 to 25/10/21, 1/8/22 to 17/8/22, 3/5/23, 11/12/23, etc.,

When prices of security/stock touch or move below lower band and at the same time RSI crosses 30 (green zone) then this is a clear indication that security is oversold. Traders/Investors are suggested to buy the security as market price will move in an upward trend. - 2/8/19, 6/3/20 to 25/3/20, 24/9/20, 30/11/21, 21/12/21, 7/3/22, 25/10/23, etc.,

NIFTY AUTO:



RSI supported by Bollinger band: When prices of security/stock touch or move above upper band and

at the same time RSI crosses 70 (red zone) then this is clear indication that security is overbought. Traders/Investors are suggested to sell the security as market price will move in a downward trend. – 20/11/20 to 7/12/20, 11/1/21, 22/1/21, 13/10/21, 5/5/23 to 16/5/23, 10/7/23, 28/11/23, etc.,

When prices of security/stock touch or move below lower band and at the same time RSI crosses 30 (green zone) then this is a clear indication that security is oversold. Traders/Investors are suggested to buy the security as market price will move in an upward trend. – 13/5/19, 17/7/19 to 29/7/19, 24/2/20 to 25/3/20, 24/9/20, 28/7/21, 23/8/21, 9/3/22, 28/3/22, etc.,

5. Conclusion:

It was found that when there is an overbought situation in the market and if price moves above the Bollinger band, then selling is suggested. But if RSi crosses 70 and price does not touch the upper Bollinger band then investors should wait/ hold the security in order to earn profits.

It was found that when there is an oversold situation in the market and if price moves below Bollinger band, then buying is suggested. But if RSi crosses below 30 and price does not touch the lower Bollinger band then investors should wait to buy the security in order to earn profits.

Any single indication of RSI or Bollinger band investors should not take the decision of buy or sell security because it may lead to losses. Investors should consider more technical tools in order to avoid losses.

6. Suggestions:

Investors should consider a greater number of technical tools for taking decision of investment. They should undergo deep study before investing in order to avoid losses.

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