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The Effect Of Technical Analysis On Profitability In Secondary Market With Special Reference To Tcs - A Top Income-Based Stock

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Abstract-Investors classify the preference of Stocks based on the three categories that is income, growth, and value. Investors based on their understanding and belief use the knowledge to grow their profits more efficiently. This study aims to focus on the income-based category of stock who offer regular and steady income to its investors, usually in the form of dividends, over a period with low exposure to risk are known as Income stocks. These stocks are stable but provide a high dividend yield. This paper tries to apply indicators like Bollinger's Bond, EMA and Super trend on these stocks and their impact on decision making is identified. Individually these indicators assist in investment decision making process to buy or sell the stock. The effectiveness of any indicator is difficult to measure which can give 100% assurance in decision making. To solve this issue three effective indicators are applied simultaneously for a stock to get meticulous decision on buy or sell a stock at a particular time. To find out the performance of top performing income-based stock TCS is selected. The indicators on combined basis will help in predicting the stock movement. For this study the three indicators selected are Bollinger's Bond, MACD and Super trend.

Keywords: Technical Indicator, Super trend, MACD, Bollinger's Bond

I. Introduction

In the stock market, there are a variety of trading strategies that can provide traders with the right indications (entry and exit prices) at the right time. Traders and investors face a difficult challenge in accurately predicting strike rates. The movement of prices is determined by economic, social, political, and psychological factors. The following methods can be used to forecast or estimate prices: fundamental analysis, technical analysis, and time series forecasting. Each method has its own set of advantages and disadvantages.

A technical trading strategy is made up of a collection of trading rules for generating trading signals. A simple trading system usually has one or two parameters for varying the timing of trading signals. The results of the parameterizations are the trading rules found in a system. Technical research assumes that stock

prices follow patterns determined by investors' continuously shifting perceptions in response to various forces. Technical analysis is based on the idea that history repeats itself and that past prices can be used to predict future market direction.

II. Overview of the Stock Market

Investment in stock market has become the most important pathways to financial success. The two major reasons behind investing in shares is to sell when the stock price rises and vice versa and the other reason is to collect the dividends paid on the stock. There are three categories of stock like income, value, and growth-based stock. There are many stocks which satisfies both the objectives also. In this study particularly the researchers have chosen the income-based stock to trade for and the applicability of three indicators to pinpoint the right time to buy or sell the stock. Income-based stocks are synonyms for dividend stocks, these are the companies which generate income for the investors, and these have the high potential for paying out dividends also. These income-based stocks refer to the shares of companies that have more mature business models.

Tata Consultancy Service is one of the top five income-based companies dealing in technology sector with overall strong hands due to stronger dollar, digitalisation, and improved business growth. It is a part of the Tata Group and has its operation in around 46 countries. TCS is the 2nd largest Indian company, after RIL, by market capitalization and is now placed among the most valuable IT service brands worldwide. TCS share price is trading above the mean with the upper band facing in the north-ward direction indicating the price to move higher. In April 2018, TCS became the 1st Indian IT company and 2nd Indian company after RIL to reach $100 billion market capitalization, after its market capitalization stood at Rs 6,79,332.81 crore in Bombay Stock Exchange (BSE). Analyzing the recent volume price action, the volume has been encouraging the recent upward move indicating strong hands have started accumulating the stock at current levels. Most of the oscillators are indicating the intact bullishness in the stock. TCS is expected to touch the target of 3600 in 2021-2022.

III. Research Methodology

A research design is the plan or programme of research. It is the general blueprint for the collection, measurement, and analysis of data. The present study aims at study the different technical indicator to have better trend analysis. Among various types of indicators in this, study particularly three indicators, which are widely preferred individually. The three indicators that were selected for the prediction of movement of trend in future are Bollinger Band, Supertrend and MACD. The secondary data has been collected from the official NSE web portal. The objective is to simulate of three technical indicators on stock movement and help investor to have a better decision making.

3.1 Key Technical Indicator for Effective and Profitable Strategy

A technical indicator is a series of data points that are derived by applying a formula to the price data of the stock. Technical indicators provide unique perspective on the strength and direction of the price action of the strike price. Indicators serve three main functions: to alert, to confirm and to predict. There are hundreds of indicators in use today. We are focusing on Super Trend, Bollinger Bands, and moving average convergence divergence (MACD) indices in this paper.

3.1.1 Bollinger Bands

The bands encapsulate the price movement of a stock, providing relative boundaries of highs and lows. The crux of the Bollinger Band indicator is based on a moving average that defines the intermediate term "trend" based on the time frame you are viewing. Bollinger Bands are comprised of three lines – the upper, middle, and lower band. The middle band is a moving average, and its parameters are chosen by the trader. The upper and lower bands are positioned on either side of the moving average band. The trader decides the number of standard deviations they need the volatility indicator set at. The number of standard deviations, in turn, determines the distance between the middle band and the upper and lower bands. The position of these bands provides information on how strong the trend is and the potential high and low-price levels that may be expected in the immediate future.

3.1.2 Moving average convergence divergence [MACD]

MACD is another trading indicator used for analyzing the strength, direction, and momentum in the stock's price. MACD is calculated based on the difference between the shorter and longer exponential moving average calculated for deciding the trend. Thus, it becomes more accurate as first EMA is calculated and based on the difference between the two MACD is calculated. MACD depends on three-time parameters, namely the time constants of the three EMAs. By comparing EMAs of different lengths, the MACD series gauges the changes in the trend of a stock. The difference between the MACD series and its average reveals the subtle shifts in the strength and direction of a stock's trend. Bearish divergence and bullish divergence are the two indicators which help the trader in call and put strategies. When the MACD line is declining indicates fall in price and when MACD line is increasing it indicates price could rise.

3.1.3 Supertrend Indicator

As the name suggests, 'Supertrend' is a trend-following indicator plotted on prices. It is easy to use and gives an accurate reading about an ongoing trend. The indicator is easy to use and gives an accurate reading about an ongoing trend. It is constructed with two parameters, namely period and multiplier. The default values used while constructing a Supertrend indicator are 10 for average true range or trading period and 3 for its multiplier. "The average true range (ATR) plays an important role in 'Supertrend' as the indicator uses ATR to calculate its value. It indicates the direction of the price movement in a market that is trending, that is following any path. It is plotted in stock price charts for investors to see marked current trend which is shown in red when prices have dipped and green when prices have risen.

IV. Statement of The Problem

The variety of trading strategies that can provide traders with the right indications (entry and exit prices) at the right time in the stock market. Traders and investors face a difficult challenge in accurately predicting strike rates. A technical trading strategy is made up of a collection of trading rules for generating trading signals. A simple trading system usually has one or two parameters for varying the timing of trading signals. The results of the parameterizations are the trading rules found in a system. Technical research assumes that stock prices follow patterns determined by investors' continuously shifting perceptions in response to various forces. Technical analysis is based on the idea that history repeats itself and that past prices can be used to predict future market direction. "The Effect of Technical Analysis on Profitability in Secondary Market with Special Reference to TCS - A Top Income-Based Stock".

4.1 Objectives

The objective of this paper is to analyze the future trend of income-based stock with the help of application of three most widely used indicators.

4.2 Scope of The Study

The aim of this study is on applying three technical indicators on a particular Income-Based Stock market company to help investor in reducing the trading cycles of investment with better profits in the end with timely decision making.

V. Analysis

A technical indicator is a forecast signal that predicts future price movements, while a lagging indicator looks at past trends and indicates momentum. But if the trader makes profit on each day, then trader is not only focused on single indicator. A trader can apply multiple technical indicators at a time with different time interval for exactly entry point and proper exit from the market with profit. Here, we are applied three technical indicators at the same time with different time interval.

5.1.1   Buy and Sell Signals - Bollinger Bands

You will also note that at the point where buy or sell signal is generated is the crossover point. At the point say, buy signal is made and the indicator turns green you will see, on hovering the cursor at this point, the closing price is higher than indicator value. Similarly, when a sell signal is generated, and the indicator turns red, the closing price will be seen lower than the indicator value. There is different setting for different time frame to archive different goals. The bellow table [**Table 5.1.1 – Different Settings with different time frame of Bollinger Bands**] display setting for multiple time frame.

Table 5.1.1 – Different Setting with different time frame of Bollinger Bands

Sr. No.	Goal	Time Frame of Chart
1	Intraday Trading	5 Min
	Positional Trading	Daily

Figure No. 5.1.1[A] - Bollinger Bandswith Time Frame -5Min

From the **Figure No. 5.1.1[A]- Bollinger Bandswith Time Frame -5Min** it is observed that when we are applied Bollinger bands indicator for to a particular stock like TCS charts for 5 Min time frame which is usually used for intraday trading or short-term trading, there are multiple buying and selling signal are generated with different time spam. In the above chart near about 14:00 sell call is generated and which is going till 15:00 the trend is changed and here treader can book profit. And same is happened at 20th date in the morning that generate buy call till 11:00.

Figure No. 5.1.1[B] - Bollinger Bandswith Time Frame - Daily

From the **Figure No. 5.1.1[B]- Bollinger Bands with Time Frame -Daily** it is observed that when we are applied Bollinger bands indicator for to a particular stock like TCS charts for daily time frame which is usually used for positional trading or long-term trading, there are multiple buying and selling signal are generated with different time spam. In the above chart in the mid of august buy call is generated and which is going till

September end trend is changed and here treader can book profit. And same is happened in the month of October that generate sell call till November end.

5.1.2 Buy and Sell Signals - MACD

A trader can find buying or selling signal based upon MACD indicator. The default setting of MACD indicator is Faster line is 12. Slower line is 26 and Signal length is 9 for finding buying and selling signal for intraday, positional, or long-term trading in stock market trading.

When MACD line crossover to signal line then there will be buying signal. And signal line crossover to MACD line then there will be selling signal. If positive crossover above '0' line, then buying signal or positive crossover bellow '0' line and go up above '0' line then strong buying signal. If negative crossover bellow '0' line, then selling signal or negative crossover above '0' line and both lines are going down below '0 line then strong selling signal. The bellow figures are shows that how multiple buying and selling are generated for different time frame.
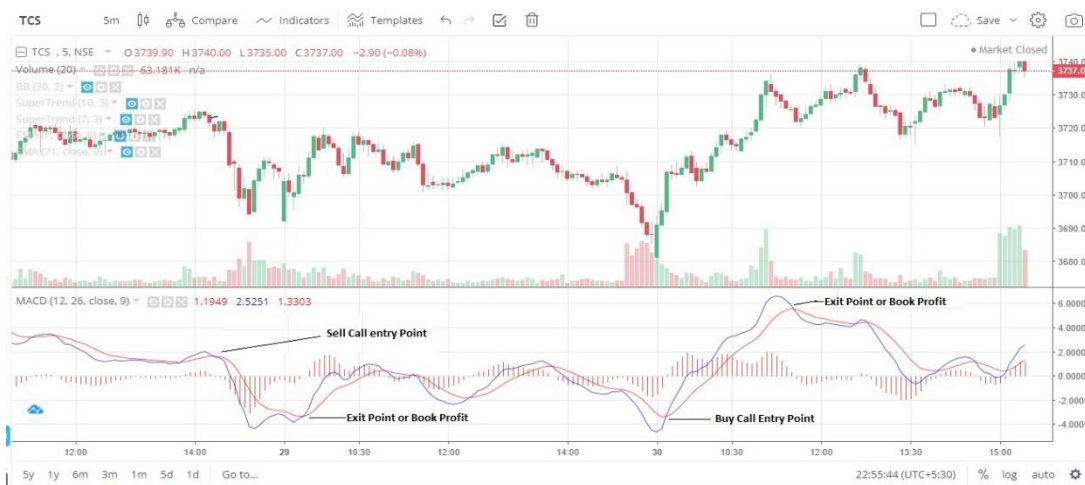

Figure No. 5.1.2[A]- MACD, Time Frame - 05Min

From the **Figure No. 5.1.2[A]- MACD, Time Frame - 05Min,** it is observed that when we are applied MACD indicator for stock like TCS on 5 min time frame, there will be multiple buying and selling signal are generated. This will help for booking small profit with small interval of time.

Figure No. 5.1.2.2- MACD, Time Frame - Daily

From the **Figure No. 5.1.2[B]- MACD, Time Frame - Daily,** it is observed that when we are applied MACD indicator for stock like TCS on daily time frame, there will be strong buying and selling signal are generated. This will help for booking profit with larger interval of time and trader can also go for next day trading.

5.3.1 Buy and Sell Signals– SuperTrend

A super-trend indicator is plotted on either above or below the closing price to signal a buy or sell. The indicator changes colour, based on whether you should be buying. If the super-trend indicator moves below the closing price, the indicator turns green, and it signals an entry point or points to buy. If a super-trend closes above, then the indicator shows a sell signal in red.

You will also note that at the point where buy or sell signal is generated is the crossover point. At the point say, buy signal is made and the indicator turns green you will see, on hovering the cursor at this point, the closing price is higher than indicator value. Similarly, when a sell signal is generated, and the indicator turns red, the closing price will be seen lower than the indicator value. There is different setting for different time frame to archive different goals. The bellow table [**Table 5.3.1 – Different Settings with different time frame of Supertrend**] display setting for multiple time frame.

Table 5.3.1 – Different Setting with different time frame of Supertrend

Sr. No.	Goal	Periods	Multiplier	Time Frame of Chart
1	Intraday Trading	7	3	5 Min
	Positional Trading			Daily
2	Intraday Trading	10	3	5 Min
	Positional Trading			Daily

Figure No. 5.3.1[A] - Super Trend with Time Frame -5Min

From the **Figure No. 5.3.1[A]- Super Trend with Time Frame -5Min** it is observed that when we are applied multiple Supertrend indicator with different setting for stock like TCS for 5 Min time frame which is usually used for intraday trading or short-term trading, there are multiple buying and selling signal are generated for each Supertrend with different time spam. If there is same signal on same time generated as in the above graph on the 30th day in the morning one buying call is generated on Supertrend indicator. And whenever

any one of these three Supertrend given sell signal then trader must book their profit on exit from that call. In the 5 minutes time frame trader can trade multiple trade depending upon signal given by Supertrend.

Figure No. 5.3.1[B] - Super Trend with Time Frame 1Day

From the **Figure No. 5.3.2- Super Trend with Time Frame -1Day** it is observed that when we are applied multiple Supertrend indicator with different setting stock like TCS for 1Day time frame which is usually used for long term trading, there are minimum buying and selling signal are generated for each Supertrend with different time spam. In the above graph after august there is buy signal is generated from Supertrend and these are giving continuous buying signal up to end of October month, it is given good rally of stock for making profit in long term position holding.

5.4.1 Combination of All technical indicator

Figure 5.4.1 Combination of Supertrend and Bollinger Bands, MACD

Figure 5.4.2 Combination of Supertrend and Bollinger Bands, MACD

From the above all three-figure numeral **Figure No. 5.4.1 and Figure No. 5.4.2** it is observed that when we are applied different indicator for multiple time frame 5min, and daily respectively. There are multiple buying and selling single generated in different time frame. From these three indicators a trader finds the exact entry point and proper exit from the market trade.

VI.   Conclusion

Thus, these three indicators when efficiently used helps in making exact technical analysis which in turn helps in identifying the right time to enter and get exited from the market. Since these indicators like Supertrend, Bollinger Bandand moving average convergence divergence (MACD) uses its own past performance to predict the future movement, they become more reliable and effective in decision making of call and put option related to buying a particular stock trading.

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