A STUDY ON TECHNICAL ANALYSIS WITH REGARDING TO THE PHARMACEUTICAL INDUSTRIES

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Abstract

Technical analysis examines variables influencing the supply and demand of stocks on the stockmarket. helps determine whether shares are undervalued or overvalued by understanding theirintrinsic worth. The stock market indicators would help the investor to identify major market turning points. Financial Markets specially stock market being core of our day to day activitiesand having enormous potential to earn, and by applying technical analysis to what extent we can earn the making matters the most hence this study of Technical Analysis. The rationale behind technical analysis is that the share price behavior repeats itself over specified time and analysts attempt to derive methods to predict this repetition. The study looks at the past shareprices data to see if we can establish any trend or an entry can be made. The study is purely based on secondary sources which includes the historical data available from the website. Forthe purpose of analysis, techniques like Relative Strength Index, Simple Moving average, Exponential Moving Average and MACD is used for the analysis to know if the stock is technically strong.

KEYWORDS: *Technical Analysis, EMA, Relative Strength Index, MACD*

I. INTRODUCTION

Financial markets, particularly the stock market, are at the center of our daily activities and offer tremendous earning potential; therefore, this study of technical analysis focuses on how much we can earn by using technical analysis. Technical analysts do not attempt to measure a securities intrinsic value, but instead use charts and other tools to identify patterns that can suggest future activity. In fact, the decision made on the basis of technical analysis is done onlyafter inferring a trend and judging the future movement of the stock on the basis of the trend. Technical Analysis assumes that the market is efficient and the price has already taken into consideration the other factors related to the company and the industry. It is because of this assumption that many think technical analysis is a tool, which is effective for short-term investing. Companies from Pharmaceutical sector is selected on Stratified sampling technique is significant as it helps in understanding the intrinsic value of shares and to know whether theshares are undervalued or overvalued or correctly priced. It becomes essential to know the performance of the company so that the investment will be duly giving returns and ensure safety of the investment. Further it helps in understanding the price behavior of the shares, thesignals given by them and the major turning points of the market price.

OBJECTIVES:

1. To analyze price movements using Relative Strength Index, Moving Average & MACD.

2. To use technical analysis on selected Indian Pharmaceutical Companies stocks andinterpret on whether to buy or sell.

3. To analyze investment risk for pharmaceutical companies in India.

II. REVIEW LITERATURE

1.   Dr. S. Umaprabha and M. Malavika (2015) shows that technical analysis aids inunderstanding share price behavior and provides information to investors about market trends. Here, it has been employed to determine if the price of shares is overvalued or undervalued. prior to investing, consider the market and price risk.

2. Isaac Kofi Nti, Adebayo Felix Adekoya and Benjamin Asubam Weyori (2019) in their study according to the findings, machine learning algorithms such as ANN and SVM are typically utilized for stock prediction. However, the hybrid ensemble machine–learning approach is the subject of a great deal of ongoing research to enhance stock prediction accuracy. A more precise and accurate prediction could be made by taking into account internal and moreexternal factors.

3.   Chenjie Sang and Massimo Di Pierro (2017) in this empirical study, they investigated whether they could improve trading algorithm performance. They demonstrated that deep learning in general and Tensor Flow can be beneficial to the financial sector, as well as positive outcomes. With remarkable success, Convolutional Neural Networks (CNN) and Recurrent Neural Networks (RNN) have been widely used in image recognition.

4.   Reshmi Manna and Saurav Pathak (2018) here in this case they have utilized both technical and fundamental analysis in this instance to identify stocks that are good short-term investments and long-term investments. All of the companies' secondary data are gathered from the company website and NSE website.

5.   Senol Emir, Hasan Dincer, Umit Hacioglu and Serhat Yuksel (2016) in this study they have used the importance scores of inputs are determined using the Random Forest method foreight banks in Borsa Istanbul. The BIST-100 index and bank closing prices are then predicted by two predictive models that make use of ANN and Random Forest (RF). Mean Absolute Error (MAE), Mean Square Error (MSE), and Median Absolute Error (MedAE) are the three metrics used to compare the models' outcomes.

6.   Dr. Kshitiz Maharshi, Pooja Chaudhary, Swati Vashisth and Neelam Shekhawat (2021) in this article we can see that the fluctuations of price in stock price with a day can be predicted using technical indicators. Investors main aim is to maximize his profit by minimizing his risk for which the entry and exit in share is important. Tools and indicators used in this study are candle stick chart, price-volume trend, exponential moving average, moving average convergence divergence, and relative strength index.

7.   C. Boobalan (2014) here they said that the technical analysis provides insight into the anticipated future share prices of specific businesses in which we invest. One can predict the best stock market investment based on their understanding of technical analysis. Investing opportunities in the future securities market could be identified using technical indicators.

8.   Massoud Metghalchi, Yung-Ho Chang and Xavier Garza-Gomez (2012) here in this article they have tried to examine trading strategies for investors that can beat the buy and hold strategy. They have established 13 trading models based on one indicator, 25 models based on two indicators, and 28 models based on three indicators. The empirical results show that 58 out of 66 models reject the null hypothesis of equality of the mean returns between buy days and sell days.

9.   Shahana Jabeen and Afshan Jabeen (2017) they tried to determine how pharmaceutical stocks listed on the National Stock Exchange (NSE) perform, with risk involvement predicted using technical indicators. Technical analysis is based on the idea that the behavior of the share price repeats over a certain amount of time and that analysts try to find ways to predict this repetition. The study looks at data from previous share prices to see if we can find a trend or make an entry.

10.   Nikhil Kaushik and Dr. Madhur Raj Jain (2015) here the author has tried to predict andguide the investors about the future trends of pharma stocks using MACD indicator. By usingMACD and ROC curve it can be concluded that the analysis indicates downward trend currently, which means companies are moving downward in a low range, indicating towards correction in the prices.

11.   Seyed Hadi Mir Yazdi and Ziba Habibi Lashkari (2013) here the author has focused on the MACD indicator for four currencies—EURUSD, GBPUSD, USDCHF, and USDJPY— individually to determine the indicator's effectiveness in terms of profit by using hourly market data from January 2001 to December 2010.

12.   Bernardo Quintanilla García, Jesus Cuauhtémoc Téllez Gaytán and Lawrence A. Wolfskill (2012) in this paper the authors provide evidence that the currency spot prices are auto correlated. Here they used The Augmented Dickey-Fuller test to test the Random Walk Hypothesis on the USD/CHF exchange rate prices. The main contribution of this paper is that new evidence is generated providing reasonable basis to discard the Efficient Markets Hypothesis in its weak form. The findings lead to embracing the Dow Theory, rather than the Random Walk approach, and conclude that markets are not efficient in their weak form.

13. Rajashree Dash and Dr. Pradipta Kishore Dash (2015) in this article the authors created a novel decision support system using a Computational Efficient Functional Link Artificial Neural Network (CEFLANN) and a set of rules is proposed to generate the trading decisions more effectively. The performance of the model is also compared to some other machine learning methods, such as the K nearest neighbor model (KNN), Support Vector Machine (SVM), Naive Bayesian model, and Decision Tree (DT) model, in order to evaluate the potential application of the proposed method.

14. Rodolfo Toríbio Farias Nazário, Jéssica Lima e Silva, Vinicius Amorim Sobreiro and Herbert Kimura (2017) here in this paper the authors have included recent refeences and focused mainly on stocks and stock derivatives. The review made it possible to thoroughly examine the characteristics of papers, revealing numerous aspects of technical analysis research that are the subject of our study. It is vital that although risk changed execution of exchanging rules is a significant issue, if we were told to zero in our concentrate on a survey of specialized analysis and market productivity, an alternate methodology and technique wouldbe necessary.

15. Mr. A. Sandeep and Mrs. S. Bhagya Lakshmi (2020) from the study which is made by the authors we can observe that equality analysis is the right thing to do how to measure the relationship between market returns and the return of the telecom sector. Investors can use this study to determine the risk associated with each selected business and market return by demonstrating the stability and volatility of stock.

16. Christopher J. Neely, David E. Rapach, Jun Tu and Guofu Zhou (2014) the authors here in this article suggested that the equity risk premium is directly predicted using technical indicators, and their performance is compared to that of macroeconomic variables. According to their findings, technical indicators have the same level of statistically and economically significant predictive power for the monthly equity risk premium as well-known macroeconomic variables from the literature.

17. Thiago Raymon Cruz Cacique da Costa, Rodolfo Tor´ıbio Naz´ario, Gabriel Soares Zica Bergo, Vinicius Amorim Sobreiro and Herbert Kimura (2015) here in this article to study the technical analysis strategy in the Brazilian Market, they used indicators or tools suchas SMA, EMA, MACD, and Triple Screen tools by using a sample that consisted of closing prices of 198 stocks traded in the Brazilian stock market from January 2000 to February 2014.The experiment conducted herein, which uses the constructed trading system, is valuable for investors who seek not only to apply methods of TA but also to study investments in the Brazilian market while taking into account the considerable number of positive returns.

18. SHU-YU KUO and YAO-HSIN CHOU (2021) here in this paper the authors suggest that the Moving Average(MA) is a widely used technical indicator that plays an important role in the stock market since it directly reflects stocks fluctuation. The author intended to investigatethe ability of MA and proposed dynamic and intelligent trading strategies based on MA, GQTS, and 2-phase sliding window to assist investors to make trading decisions.

19. Piyapas Tharavanij, Vasan Siraprapasiri and Kittichai Rajchamaha (2015) in this article the authors tried to examine the profitability of technical trading rules in the five Southeast Asian stock markets. The data cover a period of 14 years from January 2000 to December 2013.The author suggests that when it comes to market timing, technical indicators aren't very helpful. In essence, traders cannot anticipate buying at a relative low price and selling at a relative high price by merely employing technical trading rules.

20. AUDELIANO WOLIAN LI and GUILHERME SOUSA BASTOS (2020) here the author has tried to use Deep learning model to predict stock prices using historical data and technical indicators. According to the findings of this study, the LSTM method is utilized extensively in this scenario (73.5%). This significant contribution highlights some limitations in the literature, such as the fact that only two articles implemented risk management and that only 35.3% of the studies examined probability.

21. Andrea Picasso, Simone Merello, Yukun Ma, Luca Oneto and Erik Cambria (2019) the authors here tried to combine the technical and fundamental analysis approaches to market trend forecasting through the use of machine learning techniques applied to time series prediction and sentiment analysis. They used two different approaches to extract sentiment embedding's from the news: The Loughran and McDonald dictionary and Affective Space.

22. Naveen Kumar Baradi and Sanjay Mohapatra (2015) in this paper the authors tried to find the importance of technical and fundamental analysis and the usage of Chartist Methods and Services and Valuation Techniques among stock brokers of Bombay Stock Exchange, India. The author says that Stock brokers' age correlates with usage of sentiment indicators and their gender correlates with the usage of computer graphics and services. Regarding the use of chartist / technical and fundamental analysis on seven forecasting horizons, four distinct forecasting styles among stock brokers could be identified through cluster analysis.

23. Mr. Rahul Chauhan and Mr. Neel Rajpurohit (2021) the author suggests that having half knowledge in case of stock market is very dangerous. So, it is the responsibility of the company to train the employees and technical analysts to make them experts in subject of stock market, so that they become experts to solve at the queries of the investors without any information or hesitation and solve the confusions of the investors to increase the investment.

24. Mohamed Masry (2017) here the author tries to understand the performance of investors and their portfolio before and after revolution in Egyptian Stock Market. During the research period, 67% of technical analysis rules achieved abnormal returns more than the Buy and Hold strategy indicating its capacity to cover transaction costs.

25. R. Chitra (2011) here the author is performing technical analysis on selected stocks of Indian companies to find out intrinsic value of the share and to know whether the shares are undervalued or overvalued. The only primary sources used in the study are secondary ones, such as the website's historical data. In order to determine whether the stock is technically strong, methods like Beta, the Relative Strength Index, and the Simple Moving Average are utilized for the purpose of analysis.

III. RESEARCH METHODOLOGY

The primary understanding of technical analysis is being taken into account from information relating to the movement of stock prices and financials of NSE-listed pharmaceutical companies. Data has been collected from secondary sources. The Research study used in the study is Empherical Study. All the understanding of the various concepts of Technical Analysis and presentation has been earmarked exclusively with selected data for a period of 1 yrs. I, e.1st Dec 2021 to 1st Dec 2022. The closing prices of share prices is taken and the future price movements are analysed using various tools. All the listed companies in the National Stock Exchange constitute the population for the study. 10 companies which are actively traded in NSE were taken on Stratified sampling basis for the study. The selected companies are

1. Glenmark Pharmaceuticals Ltd

2. Divi's Laboratories Ltd

3. Aurobindo Pharma Ltd

4. Biocon Ltd

5. Cipla Ltd

6. Granules India Ltd

7. Lupin Ltd

8. Abbott India Ltd

9. Zydus Lifesciences Ltd

10. IPCA Laboratories Ltd

TOOLS USED

Relative Strength Index: One of the most widely used indicators in technical analysis is the RSI, which was created by J. Welles Wilder and is an extremely useful oscillating momentum indicator. The RSI ranges from 0 to 100. The 14 days RSI, in which the RSI is calculated using values from 14 days, is the most common. When the RSI is above 70, the stock is traditionally regarded as being oversold, and when it is below 30, it is regarded as being oversold. Divergences and central line crossovers can also be used to generate signals.

Moving Average Convergence/Divergence: It is a type of trend indicator that shows how prices and moving averages are related. It's the difference between 26-day and 12-day exponential moving averages. It is very easy to calculate the MACD; the difference between 26-day and 12-day exponential moving averages. In this study, a buy opportunity occurs whenever the MACD line crosses from below to above the signal line, the indicator is considered bullish and sell opportunity occurs whenever the MACD line crosses from above to below the signal line, the indicator is considered bearish.

Moving Average: The majority of chart patterns show a lot of price movement variation.

Traders may find it challenging to determine a security's overall trend as a result of this. Moving averages are one straightforward strategy traders employ to combat this. The average price of a security over a predetermined period of time is called a moving average. The price movement is smoothed out when the average price of a security is plotted. Traders are better able to identify the true trend and increase the likelihood that it will work in their favor once the day-to-day fluctuations are removed.

LIMITATIONS

• Since the sample unit contains solely prime ten Pharmaceutical firms there's probability for differences within the stock value movement trends in different firms. The inferences might not be generalized.

• This study is limited to a period of 1 year only (1st December 2021 to 1st December 2022).

• The results of the study may not be true for the period before and after the study. This study can be used only for short term decision making.

• Volatility in stock market is always subject to change.

IV. DATA ANALYSIS AND INTERPRETATION

1. Glenmark Pharmaceuticals Ltd

In the EMA analysis the 20 EMA is crossing the 50 EMA which indicates a good movement of stoock in the bullish for long term.The MACD signal shows more movement of stocks in the upward movement and it shows more volatility. The RSI indicator shows the the stock is in the overbought area and it follows a bearish after the trend line touches the 70 level.

2. Divi's Laboratories Ltd

In Moving Average Analysis, the 20 EMA line is below the 50 EMA which indicates that this is not the correct time to invest in the stock. When we consider MACD signal it indicates a buy signal as the MACD line is above the Signal line. The RSI signal shows that there is a more volatility in the purchase of the stock as it is making a rapid movement from 70 level to 30 level. Currently it indicates a sell signal.

3. Aurobindo Pharma Ltd

According to the Moving Average Analysis the market is rejecting the bullish movement and currently it indicates to sell the shares as the 20 EMA is below the 50 EMA. The MACD signal currently indicates a buy signal. The RSI signal is currently at the oversold area indicating a buy signal for stock.

4. Biocon Ltd

The EMA analysis of the stock shows an upward rally movement as the 20 EMA is trying to cross over the 50 EMA indicating a buy signal. The MACD signal indicates a sell signal as the MACD crosses the Signal line from above. The RSI signal indicates a sell signal if the trend line touches the 70 level as it is near to the level.

5. Cipla Ltd

Based on the Moving Average Analysis it indicates a sell signal as the 20 EMA is trying to cross the 50 EMA. The MACD analysis now indicates a buy signal as the MACD crosses the SIGNAL line from below to above. The RSI chart shows more volatile of the stock in the overbought area and now it indicates a neutral signal as the stock is currently at the level of 50.

6. Granules India Ltd

The EMA analysis indicates a sell signal as the 20 EMA is trying to cross the 50 EMA in a downward movement. The MACD chart currently idicates a sell signal as the MACD line is already below the SIGNAL line. The RSI trend indicates a buy signal as the stock is at the oversold area at the level of 30.

7. Lupin Ltd

The EMA Analysis currently indicates a buy signal as the 20 EMA is above the 50 EMA. The MACD signal clearly indicates a sell signal as the MACD is above the SIGNAL line. The RSI chart shows the stock is overbought in the month of January, August, September and November. Currently RSI indicates a sell signal as the stock is overbought.

8. Abbott India ltd

According to EMA analysis it is indicating a buy a signal as the 20 EMA is above the 50 EMA. The MACD chart also indicates a buy signal as the MACD line is above the SIGNAL line. The RSI signal indicates a sell signal as the stock is at the level of 70 overbought and overvalued.

9. Zydus Lifesciences Ltd

The EMA Analysis indicates a sell signal as the 20 EMA is trying to cross the 50 EMA from above to below. The MACD indicator indicates a buy signal if the MACD line crosses the SIGNAL line from below to above. The RSI signal it is at the oversold area indicating a buy signal for stock.

10. IPCA Laboratories Ltd

The EMA analysis is indicating a sell signal as the 20 EMA is above the 50 EMA. The MACD chart also indicates a sell signal as the MACD line is above the SIGNAL line. The RSI signal which is being more volatile in the trend shows that the stocks are overbought many times and currently it is at the oversold area indicating a buy signal for stock.

11. Nifty Pharma

According to the EMA analysis the Nifty Pharma indicates a buy signal as the 20 EMA is above the 50 EMA. The MACD chart indicates a sell signal as the MACD line is above the SIGNAL line. The RSI indicator indicates a sell signal as it is at the overbought level indicating that the shares are overvalued.

SUGGESTION

1. Investors can buy the shares of Lupin, Abbott, Zydus as it shows a positive growth a buy signal.

2. Investors can be avoiding to invest in the shares of Glenmark, Divi's, Aurobindo, Biocon, Cipla, Granules as it shows a negative growth.

3. Before investing on any shares investors can use Technical Analysis for safe investment and for better returns.

V. CONCLUSION

Today India is one of the top emerging pharmaceutical industry in the global market. The Pharmaceutical Sector industry in India is expected to reach $65 billion by the end of 2024 and to reach $130 billion by the end of 2030. Technical analysis helps to study the behavior of the prices of the stock to predict the future prices of the stock. The methods and theories which are used in this paper are commonly used among other traders. However, to analyze and interpret the movement of the stock price the effective tools of technical analysis are taken into consideration. Investors get benefited from technical analysis by gaining a better understanding of the stock and also being guided in the right direction in deciding whether to buy or sell the stocks. The small investors and traders shouldn't just jump into an investment; rather, they should use a variety of tools to determine whether the scrip is technically sound. Finally, I conclude that by saying that the index of Pharma sector in India shows a massive bullish movement for long term in EMA, but in MACD and RSI chart we can observe that the signal is for bearish movement for shorter period where the market can expect a correction in prices.

REFERENCES

1. Dash, R., & Dash, P. K. (2016). A hybrid stock trading framework integrating technical analysis with machine learning techniques. The Journal of Finance and Data Science, 2(1), 42-57.

2. Nazário, R. T. F., e Silva, J. L., Sobreiro, V. A., & Kimura, H. (2017). A literature review of technical analysis on stock markets. The Quarterly Review of Economics and Finance, 66, 115-126.

3. Sandeep, m. A., & Lakshmi, m. S. B. A study on equity analysis with respect to telecom sector at selected securities company. Reliance, 60(12.248192), 30-0602959.

4. Umaprabha, M., & Malavika, M. (2015). A Study on Technical Analysis of Stocks Listed in NSE with Reference to Pharmaceutical Industries. ISSN, 976(6502), 79-86.

5. Nti, I. K., Adekoya, A. F., & Weyori, B. A. (2020). A systematic review of fundamental and technical analysis of stock market predictions. Artificial Intelligence Review, 53(4), 3007-3057.

6. Kuo, S. Y., & Chou, Y. H. (2021). Building Intelligent Moving Average-Based Stock Trading System Using Metaheuristic Algorithms. IEEE Access, 9, 140383-140396.

7. Neely, C. J., Rapach, D. E., Tu, J., & Zhou, G. (2014). Forecasting the equity risk premium: the role of technical indicators. Management science, 60(7), 1772-1791.

8. Mannaa, R., & Pathakb, S. Fundamental and Technical Analysis of Indian Pharmaceutical Companies: Cipla, Sunpharma, Auropharma, Ranbaxy and Lupin.

9. Sang, C., & Di Pierro, M. (2019). Improving trading technical analysis with tensorflow long short-term memory (lstm) neural network. The Journal of Finance and Data Science, 5(1), 1-11.

10. Tharavanij, P., Siraprapasiri, V., & Rajchamaha, K. (2015). Performance of technical trading rules: evidence from Southeast Asian stock markets. SpringerPlus, 4, 1-40.

11. Emir, S., Dincer, H., Hacioglu, U., & Yuksel, S. (2016). Random Regression Forest Model using Technical Analysis Variables: An application on Turkish Banking Sector in Borsa Istanbul (BIST). International Journal of Finance & Banking Studies (2147-4486), 5(3), 85-102.

12. Chauhan, M. R., & Rajpurohit, M. N. Research Study on Technical Analysis of Selected India Private and Public Bank. International Journal on Economics, Finance and Sustainable Development, 3(6), 68-89.

13. Li, A. W., & Bastos, G. S. (2020). Stock market forecasting using deep learning and technical analysis: a systematic review. IEEE access, 8, 185232-185242.

14. Picasso, A., Merello, S., Ma, Y., Oneto, L., & Cambria, E. (2019). Technical analysis and sentiment embeddings for market trend prediction. Expert Systems with Applications, 135, 60-70.

15. Yazdi, S. H. M., & Lashkari, Z. H. (2013). Technical analysis of Forex by MACD Indicator. International Journal of Humanities and Management Sciences (IJHMS), 1(2), 159-165.

16. Metghalchi, M., Chang, Y. H., & Garza-Gomez, X. (2012). Technical analysis of the Taiwanese stock market. International Journal of Economics and Finance, 4(1), 90-102.

17. Chitra, R. (2011). Technical analysis on selected stocks of energy sector. International Journal of Management & Business Studies, 1(1), 42-46.

18. ShahanaJabeen, A. Technical Study of Pharmaceutical Stocks Listed in NSE.

19. Jain28, N. K. D. M. R. TECHNICAL ANALYSIS OF SELECTED PHARMACEUTICAL COMPANIES OF INDIA.

20. Quintanilla García, B., Téllez Gaytán, J. C., & Wolfskill, L. A. (2012). The role of technical analysis in the foreign exchange market. Global journal of business research, 6(3), 17-22.

21. Baradi, N. K., & Mohapatra, S. (2015). The Use of Technical and Fundamental Tools by Indian Stock Brokers. International Journal of Business Analytics (IJBAN), 2(1), 60-73.

22. Masry, M. (2017). The impact of technical analysis on stock returns in an emerging capital markets (ECM's) country: Theoretical and Empirical Study. International Journal of Economics and Finance, 9(3), 91-107.

23. da Costa, T. R. C. C., Nazário, R. T., Bergo, G. S. Z., Sobreiro, V. A., & Kimura, H. (2015). Trading system based on the use of technical analysis: A computational experiment. Journal of Behavioral and Experimental Finance, 6, 42-55.