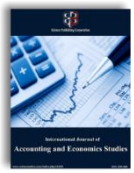
*International Journal of Accounting and Economics Studies*, 12 (8) (2025) 50-56

**International Journal of Accounting and Economics Studies**

*Website: www.sciencepubco.com/index.php/IJAES*
*https://doi.org/10.14419/kb7hc269*
***Research paper***



# Analyse The Stock Movement Trend Using Candlesticks Chart and The Risk & Volatility Associated - Selected Large-Cap Stocks in The IT Sector

**Paranichandran D. [1] *, Dr. M Ilankadhir [2]**

*[1] Research Scholar, Faculty of Management, SRM Institute of Science and Technology, Kattankulathur- 603203, Tamil Nadu, India*
*[2] Assistant Professor, Faculty of Management, SRM Institute of Science and Technology, Kattankulathur- 603203, Tamil Nadu, India*
**Corresponding author E-mail: chandru2897@gmail.com*

*Received: November 14, 2025, Accepted: November 22, 2025, Published: December 3, 2025*

**Abstract**

This study investigates the prediction of stock movement trends, risk, and volatility associated with large-cap IT sector stocks on the Na-National Stock Exchange (NSE) using candlestick charts. By focusing on the top five companies in the Nifty IT index—Infosys Ltd, Tata Consultancy Services, Tech Mahindra Ltd, HCL Technologies Ltd, and Wipro Ltd—this research aims to provide a comprehensive analysis of market behaviour over two years (April 2022 to March 2024). Utilising technical analysis, the study examines beta coefficients to measure volatility and sensitivity to market changes, as well as standard deviation to assess risk. Findings indicate that these stocks exhibit moderate volatility and are generally less risky investments. The study also highlights the significance of support & resistance and the Relative Strength Index(RSI) levels in predicting market trends and provides strategic insights for investors. Despite a small sample size, the search offers valuable insights into stock performance in the IT sector, paving the way for further studies with larger samples and comparative analyses. The results suggest that informed technical analysis can enhance investment decisions in the volatile financial market, emphasizing the importance of remaining attuned to market dynamics and leveraging technical tools for high accuracy in price prediction and profitability.

***Keywords***: *Trend Prediction; NSE; Nifty IT; Candlestick Chart; Beta; Standard Deviation.*

## 1. Introduction

In the twenty-first century, the well-being of any developing country, economy, or society mostly depends on its stock price and market economy, with the financial market acting as the pivot. Therefore, it is important that one extensively studies and understands the financial market. Because of several uncertainties like social factors, economic conditions, and political factors, it is difficult to predict the market (Isaac Kofi Nti et.al, 2020). Generally, there are two methods of analysing investment opportunities market, that is, fundamental and technical analysis. Technical analysis ignores the fundamental analysis and focuses on the actual current price movement (Paranichandran D & Maria Jucunda, 2024). Candlesticks are helpful in price analysis because they can depict a variety of scenarios. Patterns on candlestick charts are typically linked to specific assumptions regarding the performance of stocks. There may be a period of market consolidation indicated by specific combinations of patterns in those graphs, or there may be a period of vigorous price movement (Hercules A. do Prado et.al, 2013). Getting targeted returns on one's investment is one of the factors that influences someone to invest. With a certain level of risk, investors hope to maximise their return on investment. Security risk can be measured in several ways. Applying the beta coefficient is one method. Identifying a beta of security is crucial for the analysis of the security or portfolio. The sensitivity of a security return to changes in the market is indicated by its beta. The predicted stock return is also described by beta (Muhamad Syafril Nasution et.al, 2021). One of the most debated subjects in contemporary financial market analysis is the reliability of technical analysis. Numerous studies have demonstrated that technical analysis is somewhat reliable (Manoharan M & Rajesh Maimila, 2020). In the market, a support level and RSI30 is a price at which a decreasing price is likely to reverse and start increasing. Inversely, resistance and RSI70 are the prices at which an increasing price is likely to reverse and start decreasing (Rishi Prashath, 2023). To make well-informed decisions about whether to enter and quit a deal, traders and investors rely heavily on these concepts of support & resistance and RSI. In expectation of a possible market rebound, traders and investors often search for support levels to begin long positions or expand existing positions (Samuel Tabot Enow, 2023). The population used in this study is the Information Technology Sector. Based on the description above, the authors are interested in predicting trends and researching the of Beta and Standard Deviation on Stock Returns associated with risk in the IT Industry on the National Stock Exchange. The present study attempts to address this gap by analysing the top five NIFTY IT companies using candlestick analysis and

volatility metrics over two years, thereby contributing updated empirical evidence to the field of technical analysis in Indian equity markets (Edrees Ramadan Mersal & Hakan Kutucu, 2024; A.Ifayani Haanurat et.al, 2025)

## 2. Literature Review

The Efficient Market Hypothesis (EMH) is a fundamental theory for the efficient functioning of capital markets. It posits that the time series of returns in financial markets has no memory, meaning that traders and investors cannot achieve extraordinary capital gains through arbitrage strategies. This theory suggests that market prices reflect all available information, making it impossible to consistently 'beat' the market (Francesco Scalamonti, 2025). EMH, as described by Fama, posits that financial markets are “efficient” when prices fully reflect all available information. Three forms are outlined: 1) Weak form: Prices reflect all past trading information; technical analysis is ineffective. 2)Semi-strong form: Prices reflect all publicly available information, making both technical and fundamental analysis unable to yield consistent excess returns. 3)Strong form: Prices incorporate all public and private information, including insider knowledge, rendering any analysis incapable of generating excess profit (Magdalena Mikołajek-Gocejna & Tomasz Urbas, 2023). Standard deviation is a commonly used metric by traders to evaluate the risk and volatility of an asset. A high-volatility stock has a larger range of price fluctuations, which raises the standard deviation. Conversely, a stock with lower fluctuations in prices will have a lower standard deviation. Every investor and trader is looking for a risk-free asset to invest in. Suppose the investor wants to invest their money over a period for an expected return, then they have to analyse the risk of investing in the asset. The commonly used method for calculating the risk and volatility is standard deviation (Spiridon Penev et.al, 2019). If the standard deviation is close to 1 or lower, it indicates that the data incline to be closer to the mean, indicating low variance. It suggests good in contexts where predictability is desired. According to traditional investment theory, investors choose portfolios that reduce variation, or more accurately, standard deviation, to offset the uncertainty around earnings, provided that they meet a certain threshold for expected gain (Tyrrell Rockafellar et.al, 2023). The Efficient Market Hypothesis provides a theoretical framework for understanding how information is reflected in asset prices, categorised into weak, semi-strong, and strong forms. While its core premise of market efficiency is central to finance, its empirical validation remains a subject of continuous research and debate, with no universal consensus on its applicability across all markets or conditions (Alexandra Gabriela, 2015). Combining Exponential Moving Average within a technical analysis-based investment strategy can be effectively used for stock investment, offering a structured approach for decision-making and risk management (Anthony & Achmad Herlanto Anggono, 2019). Major assumption of technical analysis:

1) Market Discounts Everything (A stock's current market price is calculated by all available information about it, both known and unknown).
2) Price Moves in a Trend (It is assumed that the price follows a trend once it has been established).
3) History Repeats Itself (People generally respond to stock price changes in similar ways, assisting technical analysts in employing technical tools to identify patterns) (Spiridon Penev et.al, 2019).

Beta is a measure of the volatility of a stock in the market. It measures how sensitive an asset's returns are to changes in the market as a whole. Systemic risk, also known as non-diversifiable risk, is a component of total risk that affects the entire market and cannot be mitigated through diversification. It is influenced by elements such as inflation, profit rates, and financial policies. This type of risk is calculated using the beta and standard deviation (Abbas Fadhil Resen, 2019). Investors evaluate risk and calculate an investment's possible return in relation to the market using beta. The formula for predicting Beta is as follows:

$$\text{Monthly return} = (p1-p0)/p0*100 \quad (1)$$

P1 Current closing price
P0 previous closing price

$$\text{Beta} = \text{Covariance}(X, Y)/\text{Variance}(X) \quad (2)$$

X = Market value of Nifty
Y =Market value of the scrip
The following criterion provides the basis for the analysis:

- If the beta =1, it indicates that the stock moves in trend with the market.
- If the beta > 1, it implies that the stock is more volatile than the market.
- If the beta < 1, it suggests that the stock is less volatile than the market. (R. Chitra, 2011)

Over time, candlestick charting has evolved into a more described and visual analysis. Every candlestick shows the opening, closing, high, and low prices during a specific period of time (Yeong-Jia Goo et.al 2007).

Support & resistance and Relative Strength Index (RSI) are one of the two mostly using technical trading strategies. A buying strategy occurs when prices break through a resistance and the RSI70 level. Conversely, a selling strategy takes place when the price breaks through a support and RSI30 level (Gil Cohen 2023). Some assumptions of support & resistance and RSI, the analysis of support & resistance and RSI is done in a monthly time frame, and is applicable only for a line chart. Two support & resistance levels and RSI levels are enough for analysis. When a market breaks one support (resistance), then it has to go to the next support (resistance). When the market hits the first support (resistance), then it has a root for the sell (buy) and buy (sell) in the second support(resistance). In order to identify areas where the stock price has previously reversed or consolidated, traders examine historical price data. The belief among traders that past interest in buying may repeat in the future makes these levels possible support areas. The next section highlights the methodology used in achieving the calculation of risk, volatility, and trend prediction (Tsinaslanidis, P., 2024). The RSI was developed and published by J. Welles Wilder in his 1978 book, 'New Concepts in Technical Trading Systems', and quickly became a popular technical analysis tool. The RSI is classified as a momentum oscillator, which means it quantifies the velocity of price changes. It gauges how quickly an asset's price increases or decreases. Higher RSI values typically correspond to more positive price changes, while lower values suggest more negative changes (Ikhlaas Gurrib & Firuz Kamalov, 2019; Kevin Rink, 2023). The indicator is measured on a scale from 0 to 100. It is most frequently applied to a daily timeframe using a 14-day past price. Traditionally, an RSI value above 70 indicates an overbought condition, while a value below 30 suggests an oversold condition. Different values can be used for various interpretations (Marina Resta et.al, 2020; Marek Zatwarnicki et al,2023).

## 3. Research Methodology

The purpose of the study is to analyse the market trend movement of selected stocks in the IT sector. And also analyse the risk associated with those stocks, comparing the beta and standard deviation. Data were collected from a secondary source of trading in the equity market in the NSE. The population under investigation for this study is the top 5 companies that are actively traded and hold 75% in the Nifty IT Sector. This study encompasses a period of two years from 1st April 2022 to 31st March 2024 (Venkatesh et.al, 2021). The selected companies are:

**Table 1:** Nifty IT

| Company Name | Weight % | Date of Listing |
|---|---|---|
| Infosys Ltd | 27.12 | 08-02-1995 |
| Tata Consultancy Services | 25.37 | 25-08-2004 |
| Tech Mahindra Ltd | 10.57 | 28-07-2006 |
| HCL Technologies Ltd | 9.56 | 06-06-2000 |
| Wipro Ltd | 8.38 | 08-11-1995 |

Source: From NSE India.

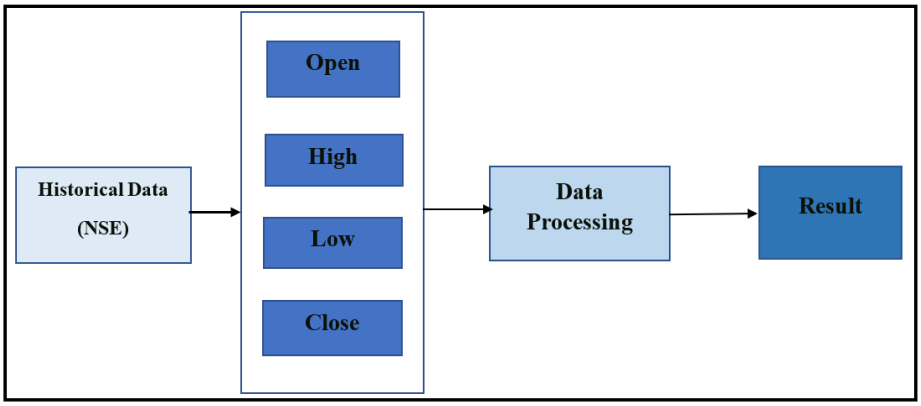



**Fig. 1:** Predictive Model.

Source: Isaac Kofi Nti, Adebayo Felix et al., 2019.

### 3.1. Result and analysis

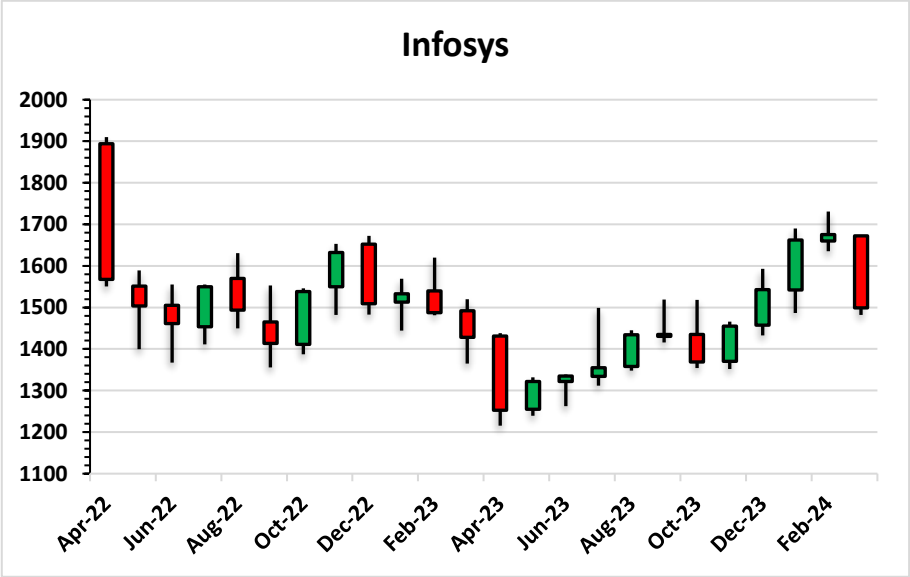



**Fig. 2:** Candlestick Pattern for Infosys.

Source: Compiled by the Author.

A beta of Infosys is 1.07974 means that the asset is equally volatile with the market. We would expect that the asset would appreciate by 1.07974% on average if the market increased by 1%. We would expect an average decrease in the asset of 1.07974% if the market decreased by 1%. In other words, the asset's returns tend to move neutral with the market's returns. It's equally sensitive to market movement, suggesting it might be a less risky investment compared to the market as a whole.

The standard deviation of Infosys stock being 0.01606 means that the stock's returns tend to fluctuate around its mean value by approximately 0.01606 on average. With a standard deviation of 0.01606, Infosys' stock returns appear to have a relatively low volatility, suggesting some degree of performance stability.

By analysing the candlestick chart trend line and applying the Support & Resistance and RSI technical tools to predict the market of Infosys. In the higher time frame (month) of Infosys, it is in an uptrend; by further investigation to additional confirmation, its lower time frame (daily) seems to be a downtrend. And it breaks the previous low of Rs 1562 and continues travelling bearish. The suggestion for the investor

in Infosys is, when the price hits the previous high range of Rs 1650-1660, then it will be a bullish market. So, the investor has a sign of entry in the market to make a profit.

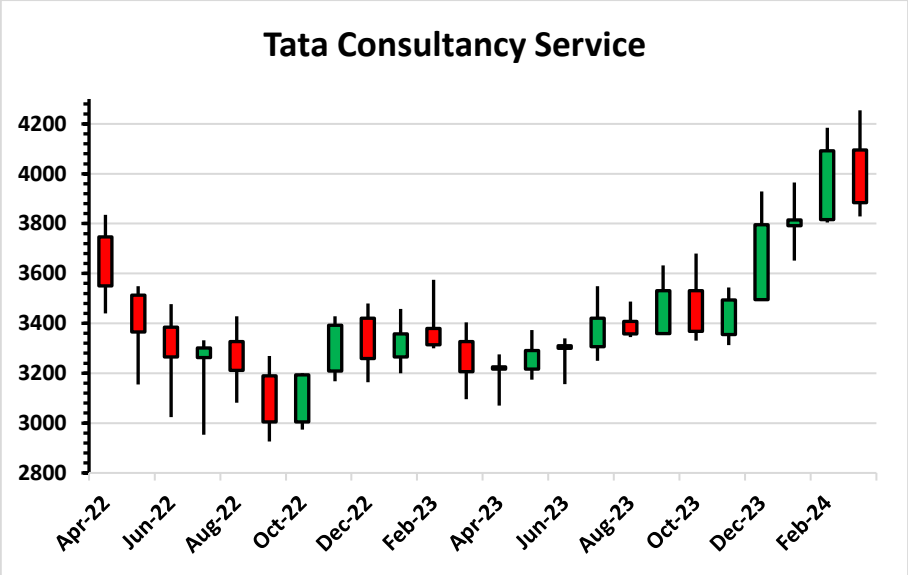



**Fig. 3:** Candlestick Pattern for Tata Consultancy Services.

Source: Compiled by the author.

Beta value is 0.85437, which is less than 1; it shows that TCS's stock is less volatile than the whole market. This means that TCS tends to move less than the overall market, indicating lower risk compared to the market as a whole.
Increased volatility is indicated by a higher standard deviation. On the other hand, given the low figure standard deviation (0.01307), it suggests moderate volatility within the TCS. It has a standard deviation of 0.01307, which is often lower than assets with higher standard deviations, suggesting relatively low volatility and maybe lower risk.
By analysing the trend of TCS in a higher time frame (month), nearly two years, it was in a sideways trend, and in February 2024, it clearly hit the previous high and moved up. For the additional confirmation in the lower time frame (Daily), it was a gradual uptrend, and in March 2024, it reached the all-time high and fixed a benchmark of Rs 4251. Continuing from the next day, it was in a downtrend. For the clear correction and gain from the market, the investor needs to wait until the market price of TCS is in the range of Rs 4180 and above.

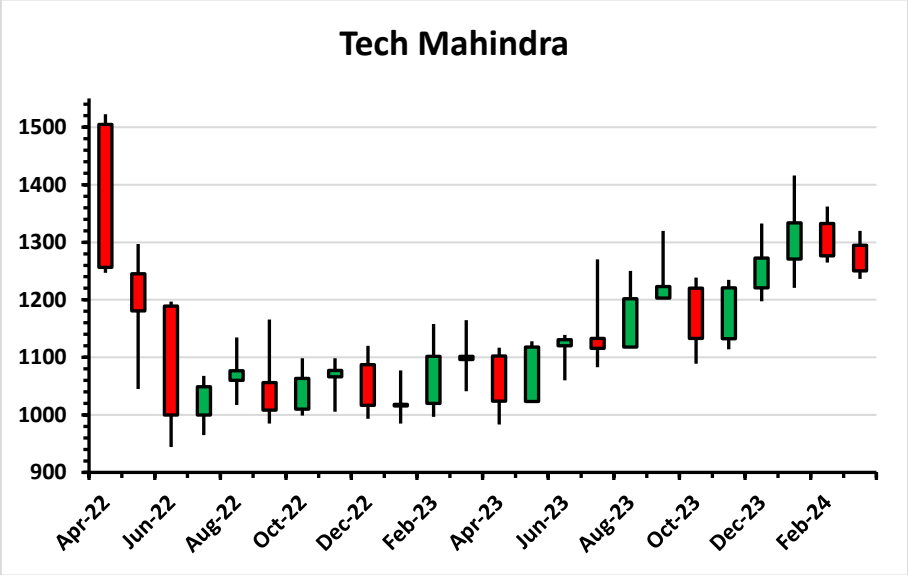



**Fig. 4:** Candlestick Pattern for Tech Mahindra.

Source: Compiled by the Author.

Beta value of Tech Mahindra is 1.09122. The stock returns of Tech Mahindra have a neutral correlation with the NIFTY50, which represents the entire market. When the market rises by 1%, Tech Mahindra's stock usually rises too by 1.09122%, and vice versa, according to an inverse relationship indicated by a beta value equal to 1. In other words, Tech Mahindra's stock exhibits equal fluctuation relative to the market. This suggests that the stock of Tech Mahindra may perform along with general market trends.
A standard deviation of 0.01677 in this instance indicates comparatively low return volatility for the stock, indicating a moderate level of risk. Overall, the standard deviation of 0.01677 implies that Tech Mahindra's stock exhibits moderate volatility, making it a relatively stable investment compared to more volatile options.
By analysing the stock of Tech Mahindra in a higher time frame, it was in a sideways trend, and there is no clear bullish or bearish market. In the lower time frame (daily) till January, it was in a sideways trend, and after breaking the previous high, it travelled a little uptrend,

then the seller dominated the buyer, again the market is sideways trend. If the market hits the previous low range of Rs 1225, then it will be a clear sign of down downtrend, so the long-term investor must wait for the trend reversal.

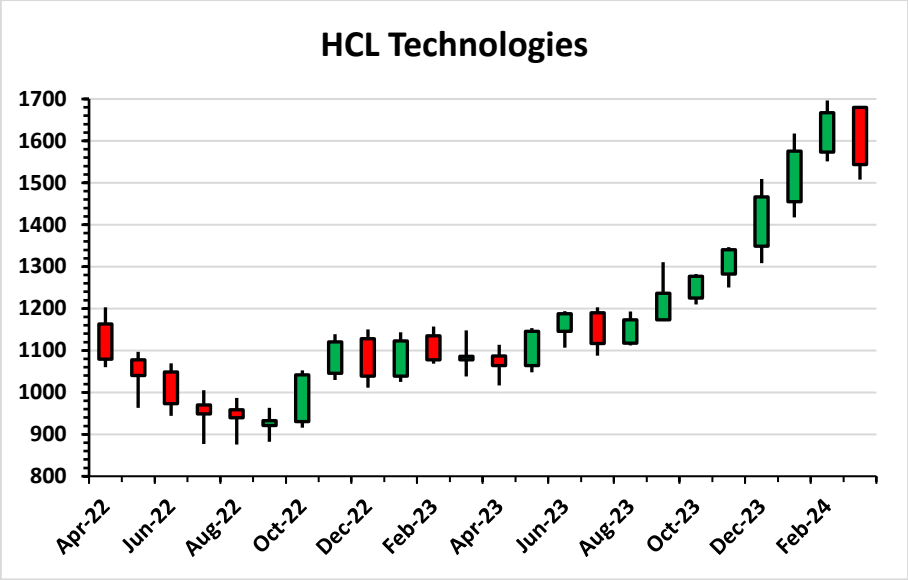



**Fig. 5:** Candlestick Pattern for HCL Technologies Ltd.

Source: Compiled by the author.

The calculated beta value of approximately 0.90597, which is almost equal to 1, indicates that HCL Technologies is significantly equal volatile compared to the NIFTY50 index. This suggests that the stock price of HCL Technologies tends to fluctuate along with the overall market represented by the NIFTY50. Would expect that the stock price would increase by 0.90597 % on average if the market increased by 1%. We would expect an average decrease in the asset of 0.90597 if the market decreased by 1%. This means that HCL tends to move along with the overall market, indicating lower risk compared to the market. By calculating the market volatility of the HCL Technologies' stock returns appears to have a smaller risk around the mean return, as indicated by its standard deviation of 0.01425. By analysing the past price and movement, HCL Technologies Ltd seems to be a bullish market in the higher time frame (month). In the month of March, the supply increases mean sellers dominate the buyers. For additional confirmation, stock analysis in the lower time frame (daily), it seems still February 2024, the market was in an uptrend after that market gradual downtrend, and also broke the previous low of 1553. From the analysis, the suggestion for the investor is that the market seems to be bearish and has less chance of entry for investment. So, investors have to wait for the HCL bullish reversal.

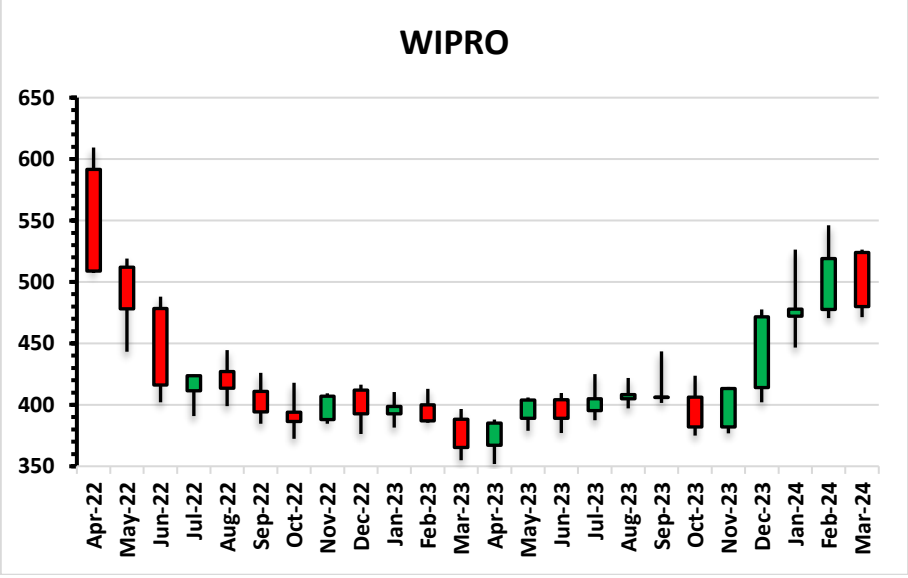



**Fig. 6:** Candlestick Pattern for Wipro

Source: Compiled by the author.

A beta value below one indicates that the stock is equally volatile with the overall market. In this instance, the stock is neutral and volatile along with the NIFTY50 index, with a beta of 1.12473. It suggests that the stock moves along with the market as a whole, which may be an indication that it is a more stable investment than the market in general.

A standard deviation of 0.01463 or 1.463% indicates a relatively low level of volatility compared to stocks with higher standard deviations. Wipro's higher standard deviations may lead investors to view the company as a less risky investment. Wipro's stock has a standard deviation of 0.01463, which indicates minimal volatility and could make it a safer investment with more consistent returns.

Analysing the scrip of Wipro using the candlestick, Support & Resistance and Relative Strength Index (RSI), from the data in a higher time frame (month), the scrip seems to be in a sideways trend; there is no clear uptrend or downtrend formed. In the lower time frame (daily) from 2022 to May 2023, it was in a downtrend. After that, the market is in a gradual uptrend, and when it reaches the high price in February 2024, its trend reverses to a downtrend till March. So, the suggestion for the investor is to wait for trend confirmation for both the lower time frame and the higher time frame.

**Table 2:** Results of the Study

| Company Name | Beta | Std D | Trend |
|---|---|---|---|
| Infosys Ltd | 1.0797 | 0.0161 | uptrend |
| Tata Consultancy Services | 0.8544 | 0.0131 | sideways trend |
| Tech Mahindra Ltd | 1.0912 | 0.0168 | sideways trend |
| HCL Technologies Ltd | 0.90597 | 0.0143 | Uptrend |
| Wipro Ltd | 1.1247 | 0.0146 | sideways trend |

Source: Compiled by the author.

## 4. Discussion and Implications

Before making any decisions, investors must also consider a number of aspects, including the budget of the Indian government, the success of the company, current political and social events, and environmental factors. Additionally, the script must be sound at its core. For a higher rate of return on investment, it is therefore advised that traders or investors perform technical analysis of equities.

After budgeting 2024, the economy is going to concentrate on some sectors, in the IT Sector is one of them. So, the investors should buy and hold the shares of these companies for long-term investment.

The results indicate that the selected NIFTY IT stocks demonstrate moderate volatility with strong alignment to market trends, and the integration of volatility metrics with technical analysis provides meaningful insights for practical investment decisions.

This study extends to the influence of broader macroeconomic factors such as global IT spending, inflation, monetary policy changes, and geopolitical developments, which may further impact sector volatility and investor behaviour. The findings also suggest that investors may benefit from integrating risk-management tools such as stop-loss levels, diversification strategies, and multi-indicator confirmation rather than relying solely on standard deviation. Clearer entry and exit guidelines based on support and resistance, the Relative Strength Index Indicator, trend confirmation, and market sentiment can further enhance investment decisions, particularly in dynamic and technology-driven markets like the IT sector.

## 5. Conclusion

The purpose of the study is to examine the volatility, evaluate risk, and calculate a possible return from investing by analysing the trend in the candlestick chart in selected stocks in NIFTY IT. Infosys Ltd., Tata Consultancy Service, Tech Mahindra Ltd, HCL technologies Ltd, Wipro Ltd.'s Beta and Std deviation indicated neutral volatility with the market and less risky investment. By analysing the company's price by standard deviation and comparing it with the NIFTY50benchmark, both indicate that the volatility is moderate and a less risky investment. The author concludes, During the rapid fluctuations in the financial market, investors must remain aware of the market dynamics and seek out appropriate opportunities. The financial market, which provides the financing required for national development, is a good indicator of a country's economic growth (Spiridon Penev et.al, 2019). With the high accuracy price prediction and high profitability, investors and traders must use a combination of technical tools for analysing the stock. The sector-specific evidence from the Indian IT market demonstrates that combining volatility measures with technical chart analysis and technical tools can support more informed investment decisions. By linking practical technical tools with theoretical market behaviour, the research offers a useful analytical reference for investors and a foundation for future empirical studies in Indian equity markets.

## 6. Limitations and Scope for Future Research

The primary limitation of this study is the relatively small sample size, as it focuses only on the top five constituent companies of the NIFTY IT Index. These companies collectively represent approximately 75% of the index weightage, and therefore were selected to ensure relevance, representativeness, and reliability of sector-level insights. However, the restricted dataset may reduce the generalizability of findings to the broader IT industry and other sectors.

Despite this limitation, the selected sample provides meaningful insights into stock behaviour, volatility patterns, and trend assessment within the highly influential Indian IT sector. Additionally, the methodology used to examine volatility through beta (benchmarked correctly in the revised version) and standard deviation, supported by candlestick-based trend interpretation to contributes a practical analytical framework for investors and researchers.

Future research may address this limitation by expanding the sample size to include a larger number of companies across multiple sectors or indices for comparative analysis. Further studies may also employ additional technical indicators, advanced forecasting models, machine learning algorithms, or risk-adjusted return measures to strengthen prediction accuracy and deepen financial interpretation. Incorporating macroeconomic variables and global financial events may also provide a more holistic view of stock market dynamics and sectoral performance.

## References

[1] Nti, I. K., Adekoya, A. F., & Weyori, B. A. (2019). A systematic review of fundamental and technical analysis of stock market predictions. *Artificial Intelligence Review*, *53*(4), 3007–3057. https://doi.org/10.1007/s10462-019-09754-z.

[2] D., Paranichandran and Jucunda, Dr. Maria, The War between Russia and Ukraine and Its Effects on the Indian Stock Market (February 16, 2024). Paranichandran D & Jucunda M E (2024), The War between Russia and Ukraine and Its effects on Indian Stock Market, International Journal of Advanced Research in Science, Communication and Technology (IJARSCT), Volume 4, Issue 2, 275 - 282. , Available at SSRN: https://ssrn.com/abstract=4728589. https://doi.org/10.48175/IJARSCT-15436.

[3] Prado, H. a. D., Ferneda, E., Morais, L. C., Luiz, A. J., & Matsura, E. (2013b). On the Effectiveness of Candlestick Chart Analysis for the Brazilian Stock Market. Procedia Computer Science, 22, 1136–1145. https://doi.org/10.1016/j.procs.2013.09.200.

[4] Nasution, M. S., Ulfah, A. K., Nadilla, T., Razali, R., Kamal, H., & Supriyanto, S. (2021). The Effect of Beta, and Residual Income on Stock Return in The Manufacturing Industry in The Indonesia Stock Exchange. *Enrichment: Journal of Management*, *11*(2), 555-558.

[5] Manoharan M, & Dr Rajesh Mamilla*. (2020). THE PROFITABILITY OF BULLISH REVERSAL CANDLESTICK PATTERNS A STUDY ON SELECT INDIAN NIFTY50 INDEX STOCKS. International Journal of Management (IJM), 11(6), 1623–1631.

[6] A Rishi Prashath, V Prabakaran, & Y Alexander. (2023). ANALYSIS ON DEPENDABILITY OF CANDLESTICKPATTERNS OF SELECTED STOCKS IN THE INDIANSTOCK MARKET. Shodha Prabha (UGC Care Journal), 48(0974–8946), 85–94.

[7] Samuel Tabot Enow. (2023). Investigating the Merits of Support and Resistance Strategy: Evidence from International Financial Markets. Journal of Economic and Social Development (JESD), 10(2).

[8] Penev, S. I., Shevchenko, P. V., & Wu, W. (2019). The impact of model risk on dynamic portfolio selection under multi-period mean-standard-deviation criterion. European Journal of Operational Research, 273(2), 772–784. https://doi.org/10.1016/j.ejor.2018.08.026.

[9] Rockafellar, R. Tyrrell and Uryasev, Stanislav P. and Zabarankin, Michael, Portfolio Analysis with General Deviation Measures (June 3, 2003). U of Florida, Industrial and Systems Engineering Research Report No. 2003-8. https://doi.org/10.2139/ssrn.414268.

[10] R.Chitra. (2011). Technical Analysis on Selected Stocks of Energy Sector. InternatIonal Journal of ManageMent & BusIness studIes, 1(1), 42–46.

[11] Yeong-Jia Goo, Dar- Hsin Chen, & Yi- Wei Chang. (2007). The application of japanese candlestick trading strategies in TAIWAN. Investment Management and Financial Innovations, 4(4).

[12] Cohen, G. (2023). Technical analysis in investing. *Review of Pacific Basin Financial Markets and Policies*, *26*(02), 2350013. https://doi.org/10.1142/S0219091523500133.

[13] Tsinaslanidis, P. (2024). Testing Horizontal Support and Resistance Zones on Cryptocurrencies. In: Tsounis, N., Vlachvei, A. (eds) Applied Economic Research and Trends. ICOAE 2023. Springer Proceedings in Business and Economics. Springer, Cham. https://doi.org/10.1007/978-3-031-49105-4_62.

[14] P.Venkatesh, Krishna Sudheer, & Senthilmurugan Paramasivan. (2021). A STUDY ON TECHNICAL ANALYSIS USING CANDLESTICKPATTERN OF SELECTED LARGE CAP STOCKS LISTED INNATIONAL STOCK EXCHANGE (NSE), INDIA WITH REFERENCETO STEEL SECTOR (1) (PDF) A Study on Technical Analysis Using Candlestick Pattern of Selected Large Cap Stocks Listed in National Stock Exchange (NSE), India with Reference to Steel Sector.

[15] Anggono, A. H. (2019). Investment strategy based on exponential Moving Average and count back line. *Review of Integrative Business and Economics Research*, *8*, 153-161.

[16] Ţiţan, A. G. (2015). The efficient market hypothesis: Review of specialized literature and empirical research. *Procedia Economics and Finance*, *32*, 442-449. https://doi.org/10.1016/S2212-5671(15)01416-1.

[17] Scalamonti, F. (2025). The Weak Form Efficient Markets Hypothesis: Macroeconomic Evidence from MEDA Capital Markets. *Available at SSRN 5078907*. https://doi.org/10.3934/QFE.2025022.

[18] Mikołajek-Gocejna, M., & Urbaś, T. (2023). Rational Investors or Rational Expectations in Efficient Market Hypothesis? *International Journal of Finance, Insurance and Risk Management*, *13*(2), 167-188. https://doi.org/10.35808/ijfirm/360.

[19] Resen, A. F. (2022). The Reality of the Relationship between the Return and the Standard Deviation as a Risk. *Iconic Research And Engineering Journals*, *6*(6), 170-181.

[20] Zatwarnicki, M., Zatwarnicki, K., & Stolarski, P. (2023). Effectiveness of the relative strength index signals in timing the cryptocurrency market. *Sensors*, *23*(3), 1664. https://doi.org/10.3390/s23031664.

[21] Gurrib, I., & Kamalov, F. (2019). The implementation of an adjusted relative strength index model in foreign currency and energy markets of emerging and developed economies. *Macroeconomics and Finance in Emerging Market Economies*, *12*(2), 105-123. https://doi.org/10.1080/17520843.2019.1574852.

[22] Rink, K. (2023). The predictive ability of technical trading rules: an empirical analysis of developed and emerging equity markets. *Financial Markets and Portfolio Management*, *37*(4), 403-456. https://doi.org/10.1007/s11408-023-00433-2.

[23] Resta, M., Pagnottoni, P., & De Giuli, M. E. (2020). Technical analysis on the bitcoin market: trading opportunities or investors' pitfall?. *Risks*, *8*(2), 44. https://doi.org/10.3390/risks8020044.

[24] Haanurat, A. I., Jaya, A., & Hariyanto, M. (2025). Effectiveness of Using Candlestick Charts in Stock Investment: Evidence from Indonesia in the New Normal Era. *Review of Integrative Business and Economics Research*, *15*(1), 754-766.

[25] Mersal, E. R., & Kutucu, H. (2024). Techniques used to extract features from candlestick charts in the stock market a systematic review. *Current Trends in Computing*, *1*(2), 104-121.