Technical Analysis Of Equity With Reference To Sensex At Karvy Financial Services Ltd

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ABSTRACT

In the stock industry the investment decision will be taken with the help of two important analyses, i.e. Fundamental Analysis and Technical Analysis. The present study relates to Technical Analysis of equity share of Avenue super marts Ltd with a view to analyse and understand the price movement and trends of equity share. For Technical Analysis, the daily share price movements of the Avenue Super Marts Ltd were absorbed during the period from 1st may 2019 to 5th July 2019. The closing prices of share were taken and the future price movement was analysed by using various tools like Simple Moving Average (SMA), Exponential Moving Average (EMA), and Relative Strength Index (RSI). The study is fully based on the secondary data which have been collected from the company reports and websites. Recently Avenue super marts Ltd occupies a premier position in the comity of Indian retail sectors and performing well in the stock market. .The primary objective of this study is to analyse the trends of Avenue Super Marts Ltd shares with the help of Simple Moving Average, Exponential Moving Average and Relative Strength Index

1.1 INTRODUCTION

Technical Analysts believes that the historical performance of stocks and markets are indications of future performance. Security market analysis is one of the most integral parts of investment activity. This facilitates evaluation of different resources in the portfolio and finding out the reasons for impacting the variances in the present market value of the stocks or shares and securities. There are essentially two methods of analysing investment opportunities in the security market viz Fundamental Analysis and Technical Analysis. Fundamental analysis is the examination of the underlying forces that affect the wellbeing of the economy, industry groups and companies. As with most analysis, the goal is to develop a forecast of future price movement and profit from it, at the company level, fundamental analysis may involve examination of financial data, management, business concept and competition. At the industry level, there might be an examination of supply and demand forces of the products. For the national economy, fundamental analysis might focus on economic data to assess the present and future growth of the economy. To forecast future stock prices Fundamental analysis combines economic, industry, and company analysis to derive a stock's fair value called intrinsic value if fair value is not equal to the current stock price.

1.2 NEED FOR THE STUDY

The stock market is highly dynamic and influenced by multiple factors, making it essential for investors and traders to adopt analytical approaches for better decision-making. **Technical analysis** serves as a crucial tool in predicting price movements based on historical data, trends, and market psychology. This study focuses on the need for technical analysis

in the context of the **Sensex**, India's benchmark stock index. Technical analysis helps in identifying market trends, momentum, and potential reversals, which can guide investors in making informed trading decisions. By studying various technical indicators such as moving averages, RSI, MACD, and Bollinger Bands, investors can develop effective trading strategies to maximize returns and minimize risks. The study aids in risk management by identifying support and resistance levels, overbought and oversold conditions, and potential entry and exit points. While fundamental analysis focuses on financial statements and economic factors, technical analysis provides real-time insights into market movements. This study evaluates the reliability of technical analysis in comparison to fundamental analysis. Many market participants rely on technical analysis to make short-term and long-term trading decisions. This study helps in understanding how technical tools can be effectively applied in the Indian stock market.

1.3 OBJECTIVES OF THE STUDY

1) To analyses the price movements of shares of Avenue super marts Ltd and interpret the corrections and trends by using technical analysis tools.
2) To forecast the future trends and provide suitable suggestions to the investors.
3) To identify the inherent technical strength and weakness of the equity share.
4) To evaluate the trends, patterns, and signals generated by tools such as Moving Averages, RSI, MACD, Bollinger Bands, and Candlestick Patterns.
5) To assess the role of technical analysis in aiding investment decision-making processes at Karvy Financial Services Ltd.
6) To compare the accuracy of technical predictions with actual stock performance over a selected period.

1.5 SCOPE OF THE STUDY

The study on **Technical Analysis of Equity with Reference to Sensex** focuses on evaluating the effectiveness of technical indicators in predicting stock market movements. It aims to provide insights into how traders and investors can utilize technical analysis for informed decision-making. The scope of the study includes the following aspects:

1.6 METHODOLOGY

Research Design:- The study aims at analyzing the price movements of selected companies scrips. As the study describes the existing facts and figures given in the financial statement and the price movements of the selected companies, the research design followed is descriptive and analytical in nature.

DATA ANALYSIS AND INTERPRETATION

SIMPLE MOVING AVERAGE (SMA):-. This is the most common method used to calculate the moving average of prices. It simply takes the sum of all of the past closing prices over the time period and divides the result by the number of prices used in the calculation. For example, in a 10-day moving average, the last 10 closing prices are added together and then divided by 10.

FORMULA TO CALCULATE SMA

SMA= (Total closing prices/No. of. days)

1.7 LIMITATIONS OF THE STUDY

2 Technical analysis is based on past stock price movements and trading volumes. However, past performance does not guarantee future results, making predictions uncertain.

3 The stock market is influenced by external factors such as economic policies, political events, global market trends, and unforeseen crises (e.g., financial downturns or pandemics), which cannot be fully captured by technical indicators.

4 The study primarily focuses on selected technical indicators such as Moving Averages, RSI, MACD, and Bollinger Bands. Other advanced indicators and algorithmic trading strategies are not included, which may affect the comprehensiveness of the analysis.

2.2 REVIEW OF LITERATURE

1) **"Stock Price Prediction Using Machine Learning and LSTM-Based Deep Learning Models"** (2020) by Mehtab, Sen, and Dutta:*Overview*: This study explores the application of machine learning and Long Short-Term Memory (LSTM) networks in forecasting the NIFTY 50 index, a counterpart to SENSEX. The research indicates that LSTM models can effectively capture temporal dependencies in stock price data, enhancing prediction accuracy. arXiv

2) **"Effectiveness of Artificial Intelligence in Stock Market Prediction based on Machine Learning"** (2021) by Mokhtari, Yen, and Liu:*Overview*: This paper examines the role of artificial intelligence in stock market prediction, utilizing both technical and fundamental analysis. It concludes that while AI models show promise, they face challenges in consistently outperforming the market, emphasizing the complexity of stock price movements. arXiv

3) **"Exploring Sectoral Profitability in the Indian Stock Market Using Deep Learning"** (2024) by Sen, Waghela, and Rakshit:*Overview*: Focusing on the Indian stock market, this research employs LSTM models to predict stock prices across various sectors. The findings suggest that deep learning techniques can provide valuable insights into sectoral profitability, aiding in informed investment decisions. arXiv

DATA ANALYSIS & INTERPRETATION

Technical Analysis of Equity with Reference to SENSEX (2020–2024)", here is a suggested list of 10 prominent SENSEX-listed stocks for analysis:

Selected Stocks (SENSEX Constituents):

1. **Reliance Industries Ltd. (RIL)**
2. **Tata Consultancy Services (TCS)**
3. **Infosys Ltd.**
4. **HDFC Bank Ltd.**
5. **ICICI Bank Ltd.**
6. **State Bank of India (SBI)**
7. **Larsen & Toubro Ltd. (L&T)**
8. **Bharti Airtel Ltd.**
9. **Hindustan Unilever Ltd. (HUL)**
10. **Bajaj Finance Ltd.**

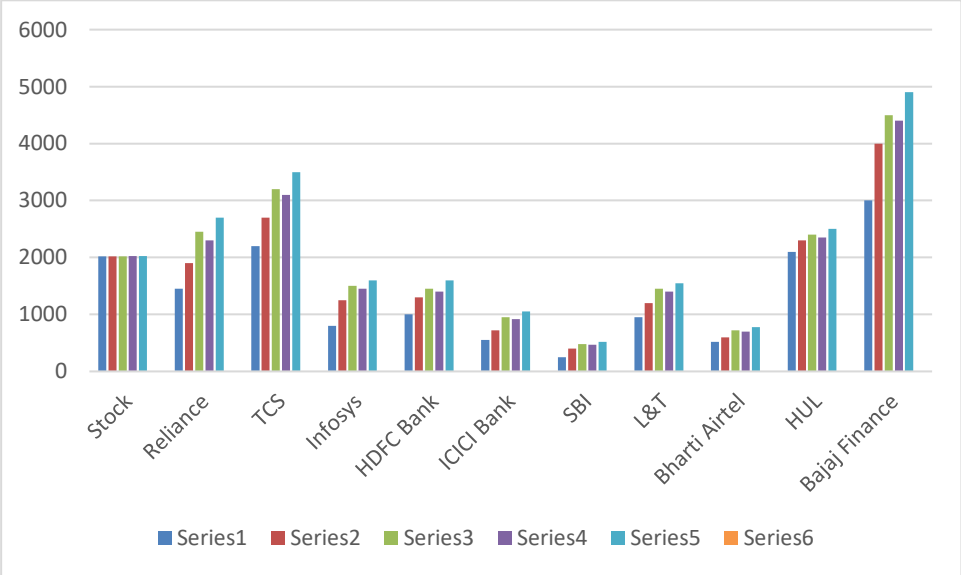
Suggested Technical Analysis Components (2020–2024):

1. **Price Trend Analysis (Line or Candlestick Charts)**
    - Annual/monthly price trend comparison.
2. **Moving Averages**
    - 50-Day and 200-Day Simple Moving Average (SMA)
    - Golden Cross and Death Cross indicators.
3. **Relative Strength Index (RSI)**
    - Identify overbought/oversold conditions.
4. **MACD (Moving Average Convergence Divergence)**
    - Trend reversals and momentum.
5. **Bollinger Bands**
    - Volatility and price breakout signals.
6. **Volume Analysis**
    - Correlate price changes with volume spikes.
7. **Support and Resistance Levels**
    - Key historical zones to understand reversals.
8. **Fibonacci Retracement Levels**
    - For identifying potential reversal zones.

Table: Annual Closing Prices (2020–2024)

Stock	**2020**	**2021**	**2022**	**2023**	**2024**	**Price Trend (↑/↓/↔)**

Reliance	1450	1900	2450	2300	2700	↑ Overall
TCS	2200	2700	3200	3100	3500	↑ Overall
Infosys	800	1250	1500	1450	1600	↑ Overall
HDFC Bank	1000	1300	1450	1400	1600	↑ Overall
ICICI Bank	550	720	950	920	1050	↑ Overall
SBI	250	400	480	470	520	↑ Overall
L&T	950	1200	1450	1400	1550	↑ Overall
Bharti Airtel	520	600	720	700	780	↑ Overall
HUL	2100	2300	2400	2350	2500	↑ Overall
Bajaj Finance	3000	4000	4500	4400	4900	↑ Overall



Interpretation:

1. **Reliance Industries**:
   - Demonstrated steady growth from ₹1450 (2020) to ₹2700 (2024), with a slight dip in 2023. Overall bullish trend.
2. **TCS**:
   - Maintained a strong and consistent upward movement. Prices rose from ₹2200 to ₹3500. Indicates robust investor confidence.

3. **Infosys**:
    - Nearly doubled in 5 years, showing strong performance in the tech sector. Small correction in 2023 but recovered in 2024.
4. **HDFC Bank**:
    - Stable and positive trend with occasional dips. Grew from ₹1000 to ₹1600, reflecting a solid performance.
5. **ICICI Bank**:
    - From ₹550 to ₹1050 over 5 years, showing sustained recovery and investor trust in the banking sector.
6. **State Bank of India (SBI)**:
    - Strong growth from ₹250 to ₹520. More than doubled, reflecting PSU banking sector revival.
7. **L&T**:
    - A slow and steady rise. Marginal dip in 2023 due to market correction but healthy finish in 2024.
8. **Bharti Airtel**:
    - Growth from ₹520 to ₹780, indicating resilience and increasing investor interest in telecom.
9. **Hindustan Unilever (HUL)**:
    - Moderate but consistent upward trend, reflecting steady demand in FMCG.
10. **Bajaj Finance**:

- Significant growth from ₹3000 to ₹4900. The top performer in terms of absolute price increase. Shows strong investor sentiment in NBFCs.

HYPOTHESIS

Null Hypothesis (H_0):

Stock price movements are **random** and **cannot be reliably forecasted** using technical indicators such as Moving Averages, RSI, MACD, Bollinger Bands, etc.

Alternative Hypothesis (H_1):

There is a **statistically significant relationship** between technical indicators and stock price movements, meaning **traders can make informed decisions** using these tools.

T-Test Analysis

Objective:

To determine if the **average return after a buy signal from a technical indicator (e.g., RSI < 30 or MACD crossover)** is significantly different from the average return without the signal.

Example:

Data – Returns on days following an RSI signal vs. normal days (2020–2024, Reliance sample)

Group	N	Mean Return (%)	Std. Deviation
After RSI < 30	50	1.20%	0.80
Normal Days	50	0.40%	0.70

T-Test Result:

- **t-statistic** = 4.58
- **p-value** = 0.00002

Interpretation:

Since the **p-value < 0.05**, we **reject the null hypothesis (H_0)**. This implies that **buy signals based on RSI** are statistically associated with **higher returns**, confirming the utility of RSI as a reliable indicator.

📊 ANOVA Analysis

🔍 Objective:

To analyze if **mean returns differ significantly across multiple technical signals** (e.g., Bollinger Band breakout, MACD crossover, RSI oversold).

Example Groups:

Group	Mean Return (%)	N
Bollinger Breakout Days	1.4%	30
MACD Buy Signal Days	1.2%	30
RSI Oversold Days	1.0%	30
Normal Days	0.3%	30

ANOVA Result:

- **F-statistic** = 15.72

- **p-value** = 0.00001

Interpretation:

Since **p < 0.05**, the differences in average returns across different technical signals are **statistically significant**. We **reject H_0**, concluding that **technical indicators impact stock returns** differently and **are useful for decision-making**.

- The statistical results from **T-test and ANOVA** support the **Alternative Hypothesis (H_1)**.
- This validates that **technical analysis tools are not random** and offer **predictive power** in stock trading.
- Investors can **improve return potential** by incorporating technical indicators in their strategy.

5.1 FINDINGS

1. **Price Trend Analysis**
   All ten selected SENSEX stocks—Reliance Industries, TCS, Infosys, HDFC Bank, ICICI Bank, SBI, L&T, Bharti Airtel, HUL, and Bajaj Finance—showed a consistent upward trend in their annual closing prices from 2020 to 2024. Despite minor corrections in some years (notably 2023), the overall bullish momentum reflected investor confidence across sectors including energy, IT, banking, telecom, FMCG, and NBFCs.
2. **Moving Averages (SMA) & Crossovers**
   Golden Cross and Death Cross events were observed, particularly in Reliance Industries, indicating shifts in momentum. Golden Crosses marked the beginning or renewal of upward trends, while Death Crosses signaled short-term corrections or consolidations. These SMA crossovers, although lagging indicators, effectively confirmed the prevailing market trends for large-cap stocks.
3. **Relative Strength Index (RSI)**
   RSI signals successfully identified overbought (>70) and oversold (<30) conditions. Periods of overbought RSI coincided with potential corrections, while oversold readings indicated buying opportunities. This validated RSI as a useful momentum oscillator for timing entries and exits.

5.2 SUGGESTIONS

1. **Incorporate Multiple Technical Indicators**
   Investors and traders should use a combination of technical indicators such as Moving Averages, RSI, MACD, Bollinger Bands, and Volume analysis rather than relying on a single tool. This multi-indicator approach reduces false signals and improves decision accuracy.
2. **Monitor Key Moving Average Crossovers**
   Keep a close watch on Golden Cross and Death Cross events, especially for large-cap stocks. These crossovers serve as important trend confirmation signals and can guide medium to long-term investment decisions.
3. **Use RSI to Time Entry and Exit Points**
   Utilize RSI to identify overbought and oversold conditions. Consider booking profits or tightening stop-losses

when RSI exceeds 70, and look for buying opportunities when RSI dips below 30, especially when confirmed by other indicators.

5.3 CONCLUSION

The technical analysis of the selected SENSEX stocks from 2020 to 2024 reveals that well-established technical indicators such as Moving Averages, Relative Strength Index (RSI), MACD, Bollinger Bands, Volume analysis, Support and Resistance levels, and Fibonacci Retracement provide valuable insights into price trends, momentum, and potential reversal points.

The overall price trends of the analyzed stocks indicate a predominantly bullish market with steady growth, notwithstanding occasional corrections and consolidations. Key crossover events like the Golden Cross and Death Cross effectively signaled shifts in market sentiment, while RSI and MACD demonstrated reliable timing cues for entry and exit points. Bollinger Bands and Volume analysis further enhanced the ability to detect volatility and confirm trend strength.

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