**A study on Technical Analysis of Share Price Movements of Select companies in IT sector IT Company’s**

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**Abstract:**

*Technical indicators are mathematical calculations based on the price, volume, of a security. Indicators are used to predict the future price movements by analyzing the historical data. Technical indicators are focused on historical trading data, such as price, volume rather than the fundamentals of a business like earnings, profit, revenue. Technical indicator helps to identify the entry and exit point as well as the trend of security in the market.*

*The various types of technical indicators are ADI – Average Directional Index, MFI – Money Flow Index, RVI – Relative Vigor Index, OBV - On balance Volume, fast stochastic, slow stochastic, ATR – Average True Range, CCI – Commodity Channel Index. Momentum, Exponential Moving Average, Standard Deviation, Rate of Change, Relative Strength of Index, Simple Moving Average, Moving Average Convergence and Divergence. The most popular momentum indicators that has been featured in the number of articles, journals and book such as ROC, RSI, MACD, EMA, SMA, standard deviation. These indicators are easy to understand and can analyze the past price movements. These are very popular and ease to know the trend of a company stock price.*

**Keywords:** *Technical indicators. ADI – Average Directional Index, MFI – Money Flow Index, RVI – Relative Vigor Index, OBV - On balance Volume, fast stochastic, slow stochastic, ATR – Average True Range, CCI – Commodity Channel Index. Momentum*

**Definition:**

Technical analysis is an online trading tool employed to evaluate the price of securities and attempt to forecast the future price movement by analyzing statistics generated by market activity. Technical analysis uses a wide variety of charts and technical indicators for evaluating past price movements over a period of time which helps the investor for making short-term decisions.

**Assumptions of Technical Analysis:**

Technical analysis is built on three pillars assumptions:

1. Market action (price) discounts everything.

The assumption seeks to incorporate all the fundamental, macro, micro and economic data as well as the risk component of a stock into the current market price of a stock. The price data contains all the information there is no need to look at fundamental factors. In other words, what is more important than why – it doesn’t focus on the underlying data behind price variation but rather focus on what the market is valuing the stockat?

1. Price moves in trends.

Share price fluctuations are not random but follow the trend. Whether it is an upward or downward direction as a trend has been established, the price movement is more likely to be in the same direction over a period of time.

1. History repeats itself.

The pattern of a share price movement repeated in the past is doomed to repeat itself in the future as well. In other words, what was happened in the past will happen again. It is based on the assumption of human psychology and behavior.

**Description about Technical analysis:**

Technical analysis deals with the wide variety of charts, technical indicator, price, time period and trend.

**Price**: Price data refers to any combination of the open, high, low, close, volume for a given security over a specific period of time frame.

**Time period:** The time frame can be used on intraday (minutes or hours), daily, weekly, monthly price data or yearly price data. **Trend:** Trend refers to the direction of stock price movements in which a security or the market is moving. It is the movement of the low and high that constitutes a trend.

Trends generally classified into three types:

1. Uptrend
2. Downtrend
3. Sideways (or) Horizontal trend

**Indicators of technical analysis:**

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**REVIEW OF LITERATURE:**

1. **”Applying technical analysis of stock trends to trading strategy of dynamic portfolio insurance”** (bin, Hsiu, & chen, 2002)It deals with two kinds of artificial neural market one to employ the price, quantity and other to employ the various technical indexes MACD is used. The data collected from 1999 to 2000. The MACD crossover to four, the profitability of five-day prediction is slightly higher than four-day prediction during taiex bearish interval. Contrary to the loss to buy and hold of taiex, both four and five day prediction has positive profitability.
2. **”Technical analysis on select stocks of energy sector”** (chitra, 2011)Researcher focused on the technical analysis of select companies based on stratified sampling technique. It is significant as to know whether the shares are undervalued or overvalued or correctly priced. Techniques like beta, RSI and SMA are used for analysis. For analysis the daily share price movements of the select companies in NSE were observed for 3 years. The company net profits are increasing at a higher rate, if international oil price increases then the price of the share also increases in domestic market. It is advisable for the investors to hold and buy the shares of these companies.
3. **”Profitability of Iranian stock market based on technical analysis trading rules”** (raissi & zakizadeh, 2011)The researcher focused on Tehran stock exchange market analysis based in applying moving average rules. Analyze data for 20 companies. SMA and EMA are tools used. Tehran capital market is not weak from efficiency point of view. It indicates that with a naïve strategy whereby investors buy s broadly based portfolio of securities and hold this portfolio until the end of the period.
4. **”Technical analysis of the Taiwanese stock market”** (metghalchi, 2011) Technical analysis is based on the belief in which asset prices will move in trends. Analysis statistics produced by market activities such as volume, close, open, past prices, price patterns. The study of market action, primarily through the use of charts for the purpose of forecasting future prices.Taiwanese stock market index time period ranges from Nov 1990 to Aug 2010. To investigate the profitability and riskiness of several technical trading rules based on RSI and MACD. The predictive power oftechnical trading rules provides a strong support. The empirical shows that 58 out of 66 models tested have significant t-statistics rejecting the null hypothesis of equality of the mean buy-day returns with mean sell-day returns.
5. **”Technical analysis for selected companies of Indian IT sector”** (HEMAL, 2013)Technical analysis for the securities of select companies (i.e.; HCL, INFOSYS, MPHASIS, WIPRO, TCS) from IT sector and to assist investment decisions. The secondary data of the daily share prices of the last 2 years (2010 to 2012). The tools and techniques used are line chart, column chart, candle stick, RSI and ROC. The overall growth of these companies will be more. Because on the basis of the technical indicator the actual trend of the stock prices of these companies will be known which tells that the stock prices of these IT companies have less fluctuations in the trend and investment in these IT companies will be benefited.

**OBJECTIVES:**

1. To examine the trends and patterns of share price movements through technical analysis.
2. To determine whether the stocks are overbought or oversold in the market by using techniques ROC, RSI and MACD.

**HYPOTHESIS OF THE STUDY:**

H0: There is no significant difference between overbought and oversold situation among IT companies during the study period.

H1: There is significant difference between overbought and oversold situation among IT companies during the study period.

**RESEARCH METHODOLOGY:**

**Need For the Study**

Investment plays a crucial role in the stock market trading. Investors face difficulties in identifying the trend and opportunities. This study helps to know the performance of particular stocks through technical analysis, in order to know the trend of share price for select companies in IT sector. The companies are selected on the basis of large market capitalization. This study helps the investors to know whether the stocks of a company are overbought or oversold in the market over a period of time. It also helps the investors in making optimal decision by analysis the stock price movements through technical analysis.

**Scope Of the Study:**

1. The study includes only 4 companies of IT sector.
2. The study is conducted with the share prices movements of four IT Companies of six months’ duration. i.e., from 31st July 2023 to January31st 2022.
3. Techniques used in this study are RSI, ROC and MACD.

**Data collection method:**

**Data Collection:**

This study is descriptive in nature. The study tries to find out how the security is being traded in the market for the given six months period (overbought/overpriced (or) oversold/underpriced) of the selected scripts based on the past data. For the present study, secondary data is used to assess the current trend and can determine the buy or sell opportunities for the stock under consideration. The data is collected from the website moneycontrol.com.The secondary data includes price movements of four IT companies for the past six months.

**Sample Size:**

The sample size of the research study is 4 IT companies i.e., HCL, INFOSYS, TCS and TECH MAHINDRA. The companies are selected on the basis of large market capitalization. These companies are listed in both NSE and BSE.Stock prices are taken on a basis of daily closing price for time period of 6 months i.e.; from 31st July 2023 to January31st 2022.

**Tools and Techniques:**

* Relative Strength of Index (RSI).
* Rate of Change (ROC).
* Moving Average Convergence and Divergence (MACD).
* One sample t-test is used to test the hypothesis.

**DATA ANALYSIS &INTERPRETATION:**

**DATA INTERPRETATION:**

To know whether the stocks are overbought or oversold in the market by using the techniques of RSI, MACD AND ROC. The analysis is done on the basis of daily closing price data over a time period of 6 months.

TABLE SHOWING OVERBOUGHT/OVERSOLD OF IT SHARES OF SIX MONTHS PERIOD

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
|  | **August** | **September** | **October** | **November** | **December** | **January** | **No. of times overbought/oversold** |
| HCL | - | + | + | - | - | + | 3/3 |
| INFOSYS | - | - | + | + | + | + | 4/2 |
| TCS | - | - | + | + | + | - | 3/3 |
| TECH MAHINDRA | + | + | + | + | - | + | 5/1 |

+ Indicates stocks are overbought.

- Indicates stocks are oversold.

HCL stocks are overbought in September, October, January and oversold in August, November and December. Hence the HCL company stocks are showing the mix response of being overbought and oversold in the market.

INFOSYS stocks are overbought in October, November, December, January and oversold in August and September. Hence the Infosys Company stocks are mostly overbought in the market.

TCS stocks are overbought in October, November and December and oversold in August, September, January. Hence the TCS company stocks are showing a mix response of being overbought and oversold in the market.

TECH MAHINDRA stocks are overbought in august, September, October, November, January and oversold in December. Hence the Tech Mahindra stocks are mostly overbought in the market.

* + 1. **Hypothesis Testing:**

H0: There is no significant difference between overbought and oversold situation among IT companies during the study period.

H1: There is significant difference between overbought and oversold situation among IT companies during the study period.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **One-Sample Statistics for difference between overbought and oversold of select companies shares** | | | | |
|  | N | Mean | Std. Deviation | Std. Error Mean |
| Difference between Overbought and Oversold | 4 | 2.2500 | 1.89297 | .94648 |

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **One-Sample Test for difference between overbought and oversold of select companies shares** | | | | | | |
|  | Test Value = 4 | | | | | |
|  | T | Df | Sig. (2-tailed) | Mean Difference | 95% Confidence Interval of the Difference | |
|  | Lower | Upper |
| Difference between Overbought and Oversold | 2.377 | 3 | .035 | 2.25000 | -.7621 | 5.2621 |

As the significant value is less than 0.05 we reject the null hypothesis and accept the alternative hypothesis. Thus we can conclude that there is a significant difference between overbought and oversold situation among IT companies during the study period. For companies like Tech Mahindra Ltd and Infosys Ltd shares there is overbought situation for nearly 5 months and for HCL and TCS shares it is a mixed response of overbought and oversold situation during six months period.

**CONCLUSION OF THE STUDY:**

Technical analysis is a method of evaluating the share price movements by analyzing the past statistics generated by market activity. Technical analysis gives the investor a better understanding of the share price movements over a period of time and helps in making a short-term decision. In this study, the performance of stock price movements of 4 IT companies are examined or analyzed. By using the technical indicators RSI, ROI and MACD which gives a direction of the trend of share price movements. When the share price is at high peak and starting to move downward then it is an indication of sell signal. In this scenario, the stocks are oversold. When the share price is at low peak and starting to move upward then it is an indication of buy signal. In this scenario, the stocks are overbought. The stocks of TCS and HCL companies are showing a mix response of being overbought and oversold during the 6 months period. The Tech Mahindra and Infosys companies stocks are mostly overbought which indicates uptrend during the 6 months. Technical analysis helps to identify the changes in the price movements and take position in the share to take an advantage of trend. For more accurate prediction of stock prices of select companies investor should also carry out fundamental analysis of stock prices, by which it gives an intrinsic value. Technical analyst uses a fundamental analysis to reaffirm a decision when buy and sell signals generated through technical indicators and charts. Fundamental analyst uses a technical analysis to identify the best time to enter into the stock market. The fundamental analysis and technical analysis provide the best case scenario for a trade of securities in the market activity.

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