Major Research Project on

The Study of Future Prices in Equity Market: Using Technical Analysis Tools

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CERTIFICATE

This is to certify that **Mr. Manish Yadav, roll no. 2K17/MBA/044,** a student of **Delhi School of Management** has worked on a project titled **"The Study of Future Prices in Equity Market :Using Technical Analysis Tools"** in partial fulfillment of Master of Business Administration (MBA) program for the academic year 2018-19.

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Dr. Pradeep Kumar Suri   Dr. Rajan Yadav
(Project Guide)   (Head of Department)

DECLARATION

I, hereby declare that I have worked on a project titled "The Study of Future Prices in Equity Market :Using Technical Analysis Tools", in partial fulfillment of the requirement for the Master of Business Administration Program and the report submitted is a record of original dissertation work done by me, under the guidance of Dr. Pradeep Kumar Suri, Professor, Delhi School of Management, DTU.

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ACKNOWLEDGEMENT

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I also express my gratitude towards the University and the Department for providing me with facilities and environment for the completion of the project.

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EXECUTIVE SUMMARY

Technical Analysis is a study of the stock market with respect to factors affecting the supply and demand of stocks helps to understand the intrinsic value of shares and to know whether the shares are undervalued or overvalued.

The stock market indicators would help the investor to identify major market turning points. The term "Technical Analysis" is a general heading for myriad of trading techniques.

Technical analysis attempts to forecast future prices by the study of past prices and a few other related summary statistics about security trading. A technical analyst is always concerned with the direction of price movements.

Any investor or trader must certainly consider technical analysis as a tool whether to buy the stock at a particular point of time though it is fundamentally strong.

This is a significant technical analysis of selected company shares which helps to understand the price behaviour of these, the signals given by them and the major turning points of the market price.

The objective of this research project is to make a study on the technical analysis of selected stocks and interpret whether to buy or sell them by using techniques.

This in turn would help investors to identify the current trend and risks involved with the scrip on par with market. This study is purely based on data provided on stocks listed in National Stock Exchange (NSE),Bombay Stock Exchange (BSE). For the purpose of analysis, techniques like Trend Analysis, Simple Moving average ,Exponential Moving Average and some other famous indicators are used and the strength of stock is inferred.

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CHAPTER -1

INTRODUCTION

INTRODUCTION

There are two major types of analysis for predicting the performance of a company. They are:

a) **Fundamental Analysis**

b) **Technical Analysis**

Fundamental analysis:

Fundamental analysis is the examination of the underlying forces that affect the well being of the Economy, Industry Groups, and Companies. As with most analysis, the goal is to derive a forecast and profit from future price movements.

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 for the products offered. 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 current fair value and forecast future value. If fair value is not equal to the current stock price, fundamental analysts believe that the stock is either over or under valued and the market price will ultimately gravitate towards fair value. Fundamentalists do not heed the advice of the random walkers and believe that markets are weak-form efficient. By believing that prices do not accurately reflect all available information, fundamental analysts look to capitalize on perceived price discrepancies.

Technical analysis:

Technical analysis is a security analysis technique that claims the ability to forecast the future direction of prices through the study of historical market data, primarily price and volume. In its purest form, technical analysis considers only the actual price and volume behavior of the market or instrument.

Technical analysts, sometimes called "chartists", may employ models and trading rules based on price and volume transformations, such as the **Relative Strength Index**, **Moving Averages**, **Regressions**, **Inter-Market and Intra-Market Price Correlations**, **Cycles or Classically**, through **recognition of chart patterns**.

Technical Analysis stands in distinction to Fundamental Analysis. Technical Analysis ignores the actual nature of the company, market, currency or commodity and is based solely on "the charts," that is to say price and volume information, whereas fundamental analysis does look at the actual facts of the company, market, currency or commodity. For example, any large brokerage, trading group, or financial institution will typically have both a technical analysis and fundamental analysis team.

Just as there are many investment styles on the fundamental side, there are also many different types of technical traders. Some rely on Chart Patterns; others use Technical Indicators and Oscillators, and most use some combination of two. In any case, Technical Analysts exclusively use of historical price and volume data is what separates them from their fundamental counterparts. Unlike Fundamental Analysts, Technical Analysts do not care whether a stock is undervalued - the only thing that matters is a security's past trading data and what information this data can provide about where the security might move in the future.

NEED FOR THE STUDY

The present study on Stock futures is very much appreciable on the grounds that it gives deep insights about the stock futures market. It would be essential for the perfect way of trading in stock futures. The study elucidates the role of derivative futures in Indian financial markets.

Studies of this type are more useful to academicians and scholars to make further insights into the various aspects of stock futures in similar organizations.

An investor can choose the right underlying for investment, which is risk free. The study included the changes in daily price movement and buying and selling signals to the selected stocks. This helps the investor to take right decisions regarding trading in stock futures

OBJECTIVES

The following are the major objectives of the study.

- To understand the concept of Technical analysis.

- To observe the daily price movement of Keerthi Industries ltd.

- To generate the Buy and Sell signals using Indicators.

- To offer suggestions based on my findings.

SCOPE OF THE STUDY

- This analysis is made by taking into consideration of Keerthi Industries only

- The scope of the study is limited for a period of 45 days only.

- The scope of the analysis can be studied by using "Moving Averages Method", "Japanese Candle Stick Method" which is one of the popular statistical tools in technical analysis is considered for the study.

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METHODOLGY OF THE STUDY

The Methodology of the study consists of

- Source of data collection

- Statistical tools

- Secondary data

Source of data collection:

The data had been collected through Primary and Secondary sources.

Primary sources:

The data had been collected through project guide and staff of the Company and primary data was that original in character and was collected a fresh.

Secondary sources:

Secondary data refers to the use of information already collected and published (or) unpublished sources are

- Books

- Journals

- Websites

Statistical tools:

The data collected from the above sources have been analyzed through 'Moving Average Method', which is one of the popular statistical tools in technical analysis is considered for the study. Moving averages are used along with the price of the scrip.

Data analysis:

The data had been analyzed using Tables and Charts.

Technical tools:

Generally used technical tools are

- Dow Theory

- Volume of trade

- Short selling

- Moving Averages

- Bar Charts

- Candle-stick Charts

Tools and technics:

SIMPLE MOVING AVERAGE (SMA):

A simple moving average is formed by computing the average (mean) price of a security over a specified number of periods. While it is possible to create moving averages from the Open, the High, and the Low data points, most moving averages are created using the closing price. For example: a 10-day simple moving average is calculated by adding the closing prices for the last 10 days and dividing the total by 10.

EXPONENTIAL MOVING AVERAGE CALCULATION:

Exponential Moving Averages can be specified in two ways - as a percent-based EMA or as a period-based EMA. A percent-based EMA has a percentage as it's single parameter while a period-based EMA has a parameter that represents the duration of the EMA.

THE FORMULA FOR AN EXPONENTIAL MOVING AVERAGE:

EMA (current) = ((Price (current) – EMA (prev.)) x Multiplier) + EMA(prev.)

For a percentage-based EMA, "Multiplier" is equal to the EMA's specified percentage. For a period-based EMA, "Multiplier" is equal to $2 / (1 + N)$ where N is the specified number of periods.

RELATIVE STRENGTH INDEX (RSI):

The Relative Strength Index (RSI) is a trading indicator in the technical analysis of financial markets. It is intended to indicate the current and historical strength or weakness of a market based on the closing prices of completed trading periods. It assumes that prices close higher in strong market periods, and lower in weaker periods and computes this as a ratio of the number of incrementally higher closes to the incrementally lower closes.

CALCULATION:

$$RSI = 100 - \frac{100}{1+RS}$$

RS = Average Gain/ Average loss

Average Gain = [(previous Average Gain)*13 + Current Gain] /14

<u>Definitions of Technical analysis</u>**:**

A method of evaluating securities by relying on the assumption that market data, such as charts, of price, volume, and open interest, can help predict future (usually short-term) market trends. Unlike fundamental analysis, the intrinsic value of the security is considered. Technical analysts believe that they can accurately predict the future price of a stock by looking at its historical prices and other trading variables. Technical assumes that market psychology influences trading in a way that enables predicting when a stock will rise or fall. For that reason, many technical analysts are also market timers, who believe that technical analysis can be applied just as easily to the market as a whole as to an individual stock.

The study of the relationships among the security market variables such as price levels, trading volumes, and price movements so as to gain insights into the supply and demand for securities. Rather than concentrating on earnings, the economic outlook, and other business-related factors that influence a security's value, technical analysis attempts to determine the market forces at work on a certain security or on the securities market as a whole. Compare fundamental analysis

A method of evaluating securities by analyzing statistics generated by market activity, such as past prices and volume. Technical analysts do not attempt to measure a security's intrinsic value, but instead use charts and other tools to identify patterns that can suggest future activity.

Technical analysts believe that the historical performance of stocks and markets are indications of future performance.

In a shopping mall, a fundamental analyst would go to each store, study the product that was being sold, and then decide whether to buy it or not. By contrast, a technical analyst would sit on a bench in the mall and watch people go into the stores. Disregarding the intrinsic value of the products in the store, the technical analyst's decision would be based on the patterns or activity of people going into each store.

Technical analysis is the study of a stock, or the market as a whole, strictly by using the price and volume history of a stock. Technical analysis uses little or no information about the actual business behind the stock. The common belief is that a stock price represents all known information about a stock. Technical analysis is an alternative to fundamental analysis.

Technical Analysis is a method of forecasting prices of stocks, bonds, futures contracts, indices, or other financial instruments. The goal of technical analysis is to predict future price level or direction. It tends not to be the goal of technical analysis to explain why prices behave as they do; that would be fundamental analysis. Technical analysis primarily studies the action of a financial market.

The working principle behind technical analysis is that any influence on the market is already reflected in current price levels. Followers of technical analysis believe that: 1) prices move in trends, 2) history repeats itself, and 3) the market discounts everything. Technical analysis involves the use of different kinds of charts, or other market indicators such as moving averages, volume and open interest, oscillators, Japanese candlesticks, Elliott Wave Theory, and cycle analysis.

CHAPTER -2

LITERATURE REVIEW

Brown and Jennings (1989)

Brown and Jennings (1989) showed that technical analysis has value in a model in which prices are not fully revealing and traders have rational conjectures about the relation between prices and signals.

Neftci (1991)

Neftci (1991) showed that a few of the rules used in technical analysis generate well-defined techniques of forecasting, but even well-defined rules were shown to be useless in prediction if the economic time series is Gaussian. However, if the processes under consideration are non-linear, then the rules might capture some information. Tests showed that this may indeed be the case for the moving average rule.

Taylor and Allen (1992)

Taylor and Allen (1992) report the results of a survey among chief foreign exchange dealers based in London in November 1988 and found that at least 90 per cent of respondents placed some weight on technical analysis, and that there was a skew towards using technical, rather than fundamental, analysis at shorter time horizons. In a comprehensive and influential study Brock, Lakonishok and LeBaron (1992) analysed 26 technical trading rules using 90 years of daily stock prices from the Dow Jones Industrial Average up to 1987 and found that they all outperformed the market.

Blume, Easley and O'Hara (1994)

Blume, Easley and O'Hara (1994) show that volume provides information on information quality that cannot be deduced from the price. They also show that traders who use information contained in market statistics do better than traders who do not. Neely (1997) explains and reviews technical analysis in the foreign exchange market.

Neely, Weller and Dittmar (1997)

Neely, Weller and Dittmar (1997) Use genetic programming to find technical trading rules in foreign exchange markets. The rules generated economically significant out-of-sample excess returns for each of six exchange rates, over the period 1981–1995. Lui and Mole (1998) report the results of a questionnaire survey conducted in February 1995 on the use by foreign exchange dealers in Hong Kong of fundamental and technical analyses. They found that over 85% of respondents rely on both methods and, again, technical analysis was more popular at shorter time horizons.

Neely (1998)

Neely(1998) reconciles the fact that using technical trading rules to trade against US intervention in foreign exchange markets can be profitable, yet, longterm, the intervention tends to be profitable.

LeBaron (1999)

LeBaron(1999) shows that, when using technical analysis in the foreign exchange market, after removing periods in which the Federal Reserve is active, exchange rate predictability is dramatically reduced.

Lo, Mamaysky and Wang (2000)

Lo, Mamaysky and Wang (2000) examines the effectiveness of technical analysis on US stocks from 1962 to 1996 and finds that over the 31-year sample period, several technical indicators do provide incremental information and may have some practical value. Fernandez-Rodr´ıguez, Gonz´alez-Martel and Sosvilla-Rivero (2000) apply an artificial neural network to the Madrid Stock Market and find that, in the absence of trading costs, the technical trading rule is always superior to a buyand-hold strategy for both 'bear' market and 'stable' market episodes, but not in a 'bull' market. One criticism I have is that beating the market in the absence of costs seems of little significance unless one is interested in finding a signal which will later be incorporated into a full system. Secondly, it is perhaps naïve to work on the premise that 'bull' and 'bear' markets exist. Lee and Swaminathan (2000) demonstrate the importance of past trading volume.

Neely and Weller (2001)

Neely and Weller (2001) use genetic programming to show that technical trading rules can be profitable during US foreign exchange intervention. Cesari and Cremonini (2003) make an extensive simulation comparison of popular dynamic

strategies of asset allocation and find that technical analysis only performs well in Pacific markets.

Kavajecz and Odders-White (2004)

Kavajecz and Odders-White (2004) show that support and resistance levels coincide with peaks in depth on the limit order book 1 and moving average forecasts reveal information about the relative position of depth on the book. They also show that these relationships stem from technical rules locating depth already in place on the limit order book

Jim rogers:

Stock futures are contracts where the buyer is long, i.e., takes on the obligation to buy on the contract maturity date, and the seller is short, i.e., takes on the obligation to sell. Stock index futures are generally not delivered in the usual manner, but by cash settlement.

According to Hutchinson:

In finance, a futures contract is a standardized contract, traded on a futures exchange, to buy or sell a certain underlying instrument at a certain date in the future, at a specified price. The future date is called the delivery date or final settlement date. The pre-set price is called the futures price. The price of the underlying asset on the delivery date is called the settlement price.

CHAPTER -3

COMPANY PROFILE

Keerthi Industries Ltd engages in the production and sale of cement and clinker in India. The company operates a cement plant with an installed capacity of around 297,000 tonnes pa at its plant located at Mellacharuvu village & Mandal, Nalgonda District, State Andhra Pradesh. The company mainly manufactures Ordinary Portland Cement (OPC), Portland Pozzolona Cement (PPC) varieties with a product-mix of OPC: PPC of 95:5. They market their products under the brand name 'Suvarna Cement' with markets mainly in Andhra Pradesh.

They also sell some meager quantity to Tamilnadu and Karnataka. Keerthi Industries Ltd was incorporated on May 17, 1982 at Hyderabad with the name Suvarna Cements Ltd. The company was established by V C Brahamanna along with his associates. In the year 1986, they set up a manufacturing unit with an initial capacity of 66,000 TPA. In June 1986, they started commercial production.

The company suffered losses in the initial years and was referred to BIFR during the year 1990. As per the suggestion in the rehabilitation package sanctioned by BIFR, the installed capacity was increased to 99,000 TPA and the management of the company had been taken over by the existing management. In March 18, 1999, Hyderabad Bottling Company Ltd, along with the promoter directors J S Krishna Murthy, J S Rao, J V Choudaru and J Triveni entered into an agreement with Brahmanna and associates and acquired the stake of the company

In the year 2003, the capacity was further increased to 297,000 tonnes per annum (900 tpd). During the year 2003-04, the company received an award 'Best Turnaround/ Revival of a Sick Industry' from the Federation of Andhra Pradesh Chambers of Commerce & Industry. In November 23, 2005, the name of the

company was changed from Suvarna Cements Ltd to Keerthi Industries Ltd. During the year 2006-07, the company purchased 126 acres of land for the use of the proposed sugar project and Government of Karnataka. During the year 2007-08, the company commenced generation of 1.50 MW wind power in Karnataka. Also, they entered into a power purchase agreement with Karnataka State Electricity board at an average rate of around Rs.3.40 per unit.

During the year 2008-09, Hyderabad Flextech Ltd merged with the company with effect from April 1, 2007 through the scheme of arrangement. The company is increasing the production capacity from 297,000 tpa to 528,000 tpa at a total cost of Rs.102.16 crore financed through a debt of Rs.68.10 crore. The company expects to complete construction and commence production by October 2010. The company is also looking to set up a one million tonne capacity unit in the existing premises itself

INDUSTRY STRUCTURE AND DEVELOPMENTS

India is one of the major producers of cement. The demand is largely based oninfrastructure projects, Private construction sectors, Roads and Buildings, Ports etc., of the Government of India and the State Government, besides the growing Housing Sector. Cement, hitherto a controlled product, is presently decontrolled. However, the cost of the raw material and fuel namely Limestone, Coal, Power and Freight charges are all controlled(directly or indirectly) by the Government and any increase in the price of the abovementioned items affects the cost of the production on which the company does not have any control. Thus, industry has been in ups and downs. During the current year the trend is very positive and this in turn being lead for expansions in capacity.

Opportunities and Threats:

Consolidations by way of mergers, entry of global cement players and strategic investments **by** one company in another to retain/improve its market share continues catching-up with the encouraging infrastructure and construction industry is an opportunity for the time being. The cement players in order to meet the competitive market have been taking all-round efforts including expansion (for economy of scale) and cost management techniques.

Segment or product-wise performance:

Segment-wise or product-wise performance has already been furnished elsewhere in this report.

Outlook:

This has been discussed elsewhere in this Report.

Internal control systems and their adequacy:

The company is following a proper and adequate system of internal controls in respect of all its activities including safeguarding and protecting its assets against loss from unauthorized use of disposition. Further all transactions entered into by the company are duly authorized and recorded correctly. M/s. G.P. Associates, Chartered Accountants, Hyderabad have been working as the Internal Auditors of the company. The Internal Auditors are submitting their reports to the company on a quarterly basis.

Financial/operational performance:

This has been already discussed elsewhere in this Report.

Human Resources/Industrial Relations:

The company enjoys very cordial industrial relations, due to which there is very low employee/ labour turnover in the company. You will be happy to note that ever since the inception of the Company, there were no strikes, lockouts, lay-offs, retrenchments,

CHAPTER -4

DATA ANALYSIS & INTERPRETATION

There are two major types of analysis for predicting the performance of a company. They are:

c) **Fundamental Analysis**

d) **Technical Analysis**

Fundamental analysis:

Fundamental analysis is the examination of the underlying forces that affect the well being of the Economy, Industry Groups, and Companies. As with most analysis, the goal is to derive a forecast and profit from future price movements.

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 for the products offered. 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 current fair value and forecast future value. If fair value is not equal to the current stock price, fundamental analysts believe that the stock is either over or under valued and the market price will ultimately gravitate towards fair value. Fundamentalists do not heed the advice of the random walkers and believe that markets are weak-form efficient. By believing that prices do not accurately reflect all available information, fundamental analysts look to capitalize on perceived price discrepancies.

Technical analysis

Technical analysis is a security analysis technique that claims the ability to forecast the future direction of prices through the study of historical market data, primarily price and volume. In its purest form, technical analysis considers only the actual price and volume behavior of the market or instrument.

Technical analysts, sometimes called "chartists", may employ models and trading rules based on price and volume transformations, such as the **Relative Strength Index**, **Moving Averages**, **Regressions**, **Inter-Market and Intra-Market Price Correlations**, **Cycles or Classically**, through **recognition of chart patterns**.

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Just as there are many investment styles on the fundamental side, there are also many different types of technical traders. Some rely on Chart Patterns; others use Technical Indicators and Oscillators, and most use some combination of two. In any case, Technical Analysts exclusively use of historical price and volume data is what separates them from their fundamental counterparts. Unlike Fundamental Analysts, Technical Analysts do not care whether a stock is undervalued - the only thing that matters is a security's past trading data and what information this data can provide about where the security might move in the future.

Origin and development of technical analysis:

The principles of technical analysis derive from the observation of financial markets over hundreds of years. The oldest known hints of technical analysis appear in Joseph de la Vega's accounts of the Dutch markets in the 17th century. In Asia, the oldest example of technical analysis is thought to be a method developed by Homma Munehisa during early 18th century which evolved into the use of candlestick techniques, and is today a main charting tool.

Dow Theory is based on the collected writings of Dow Jones co-founder and editor Charles Dow, and inspired the use and development of modern technical analysis from the end of the 19th century. Other pioneers of analysis techniques include Ralph Nelson Elliott and William Delbert Gann who developed their respective techniques in the early 20th century.

The classical technical analysis evolved gradually in the early part of 20th century and deals with detailed study of price bar charts of the indices as well as of individual stocks. The Modern Technical Analysis was perfected in the later part of the century. It went deeper into internal structure of price movements like the difference between high and low of the day, weeks or hours of trading, moving averages etc.,

There are three basic assumptions on which technical analysis is based.

1. The Futures Market Discounts Everything:

The technician believes that the price posted on the board of a commodity exchange at any given time is the intrinsic value of the commodity based upon the fundamental factors affecting the supply and demand of the product. Therefore, if the fundamentals are already reflected in the price, market action (charts- price, volume, open interest) is all that is needed to be studied to forecast future price direction.

Although not knowing the specifics of the fundamental news, the technician indirectly studies the fundamentals by studying the charts which reflect the fundamentals of the marketplace.

2. Prices Move in Trends:

Prices can move in one of three directions, up, down or sideways. Once a trend in any of these directions is in effect it usually will persist. The market trend is simply the direction of market prices, a concept which is absolutely essential to the success of technical analysis. Identifying trends is quite simple; a price chart will usually indicate the prevailing trend as characterized by a series of waves with obvious peaks and troughs. It is the direction of these peaks and troughs that constitutes the market trend.

3. History Repeats Itself

Technical analysis includes the psychology of the market place. Patterns of human behavior have been identified and categorized for several hundred years and are repetitive in nature. The repetitive nature of the marketplace is illustrated by specific chart patterns which will indicate a continuation of or change in trend

TECHNICAL Vs FUNDAMENTAL ANALYSIS:

Technical analysis and fundamental analysis are the two main schools of thought in the financial markets. As we have mentioned, technical analysis looks at the price movement of a security and uses this data to predict its future price movements. Fundamental analysis, on the other hand, looks at economic factors, known as fundamentals.

THE DIFFERENCES:

<u>Charts Vs Financial Statements:</u>

At the most basic level, a technical analyst approaches a security from the charts, while a fundamental analyst starts with the financial statements.

By looking at the balance sheet, cash flow statement and income statement, a fundamental analyst tries to determine a company's value. In financial terms, an analyst attempts to measure a company's intrinsic value. In this approach, investment decisions are fairly easy to make - if the price of a stock trades below its intrinsic value, it's a good investment.

Technical traders, on the other hand, believe there is no reason to analyze a company's fundamentals because these are all accounted for in the stock's price. Technicians believe that all the information they need about a stock can be found in its charts.

<u>TIME HORIZON:</u>

Fundamental analysis takes a relatively long-term approach to analyzing the market compared to technical analysis. While technical analysis can be used on a timeframe of weeks, days or even minutes, fundamental analysis often looks at data over a number of years.

The different time frame that these two approaches use is a result of the nature of the investing style to which they each adhere. It can take a long time for a company's value to be reflected in the market, so when a fundamental analyst estimates intrinsic value, a gain is not realized until the stock's market price rises to its "correct" value. This type of investing is called value investing and assumes that the short-term market

is wrong, but that the price of a particular stock will correct itself over the long run. This "long run" can represent a timeframe of as long as several years, in some cases.

TRADING Vs INVESTING

Not only is technical analysis more short term in nature that fundamental analysis, but the goals of a purchase (or sale) of a stock are usually different for each approach. In general, technical analysis is used for a trade, whereas fundamental analysis is used to make an investment. Investors buy assets they believe can increase in value, while traders buy assets they believe they can sell to somebody else at a greater price.

USERS OF TECHNICAL ANALYSIS:

Investors for their short-term trading decisions use Technical Analysis. This short-term may be further divided in day trading, short term investment and for hedging purposes. The role played by technical Analysis in each case is as follows:

1) Day Traders:

A day trader is one who takes and squares off his position both on the same day. Mostly a day trader counts on turnover rather than margin. A day trader will interpret the market movement in the manner stated below.

Suppose Mr. X is a day trader who deals in Nifty. The movement of Nifty first month futures whose expiry is on 25th March, 2010 is stated below, if Mr. X follows the recommendations made by Technical Analysis he can buy at 5211.100 as the MACD indicator has shown divergence signal and he can sell at 5212.100 as the convergence has been formed and again he can buy at 5215.400 and can square off his position at 5263.400 as the RSI indicator has reached to over bought level.

Fig: 4.1

2) <u>Short term investors:</u>

These people form the biggest clientele base of both the Brokers and the Technical Analysts. To explain the working lets take the price movement curve of Infosys Technologies on NSE for the period 8th March 2010 to 25th March 2010. On closely analyzing we will notice that on 10th March the stock has reached to over sold level at 2661.200. So the short term investors can enter and buy the stock at this level and again on 15th March it has reached to over bought level at 2705.600. Therefore he can gain around Rs.44.4 on this stock with in the span of 5 days.
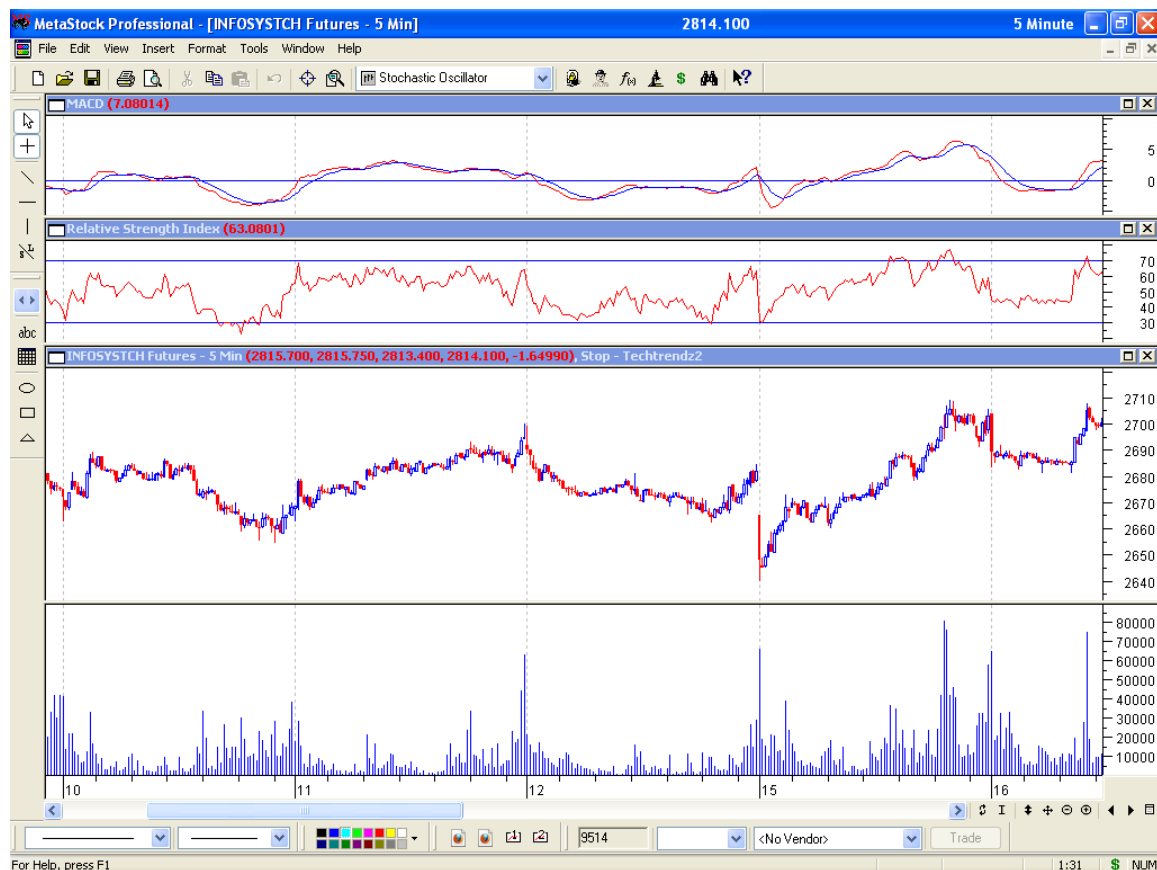
Fig: 4.2

3. <u>HEDGERS:</u>

These are generally big investors, who have lot of money at stake and hence they look to have some hedging of their risk. The strategy followed by this section of investors is that they compare the stock in consideration with the index and on the basis of the result of this comparison they take their position in the stock. This can be explained by comparing the movement of nifty on the graph with Infosys movement as we have done in the figure given above. If we look at both the charts of nifty movement with Infosys movement we find that although both have fallen over the period but Infosys has witnessed some rallies and hence we can clearly say that a hedger will benefit by using

technical Analysis and getting out at the periods when Infosys has given an upward rally.
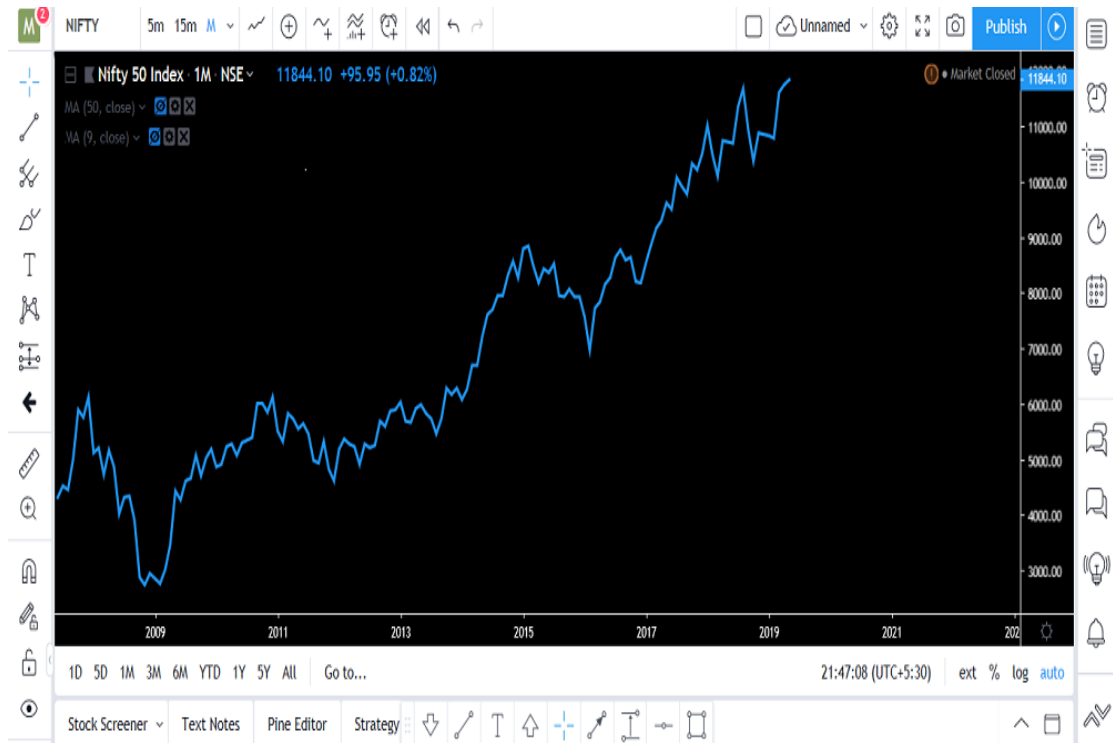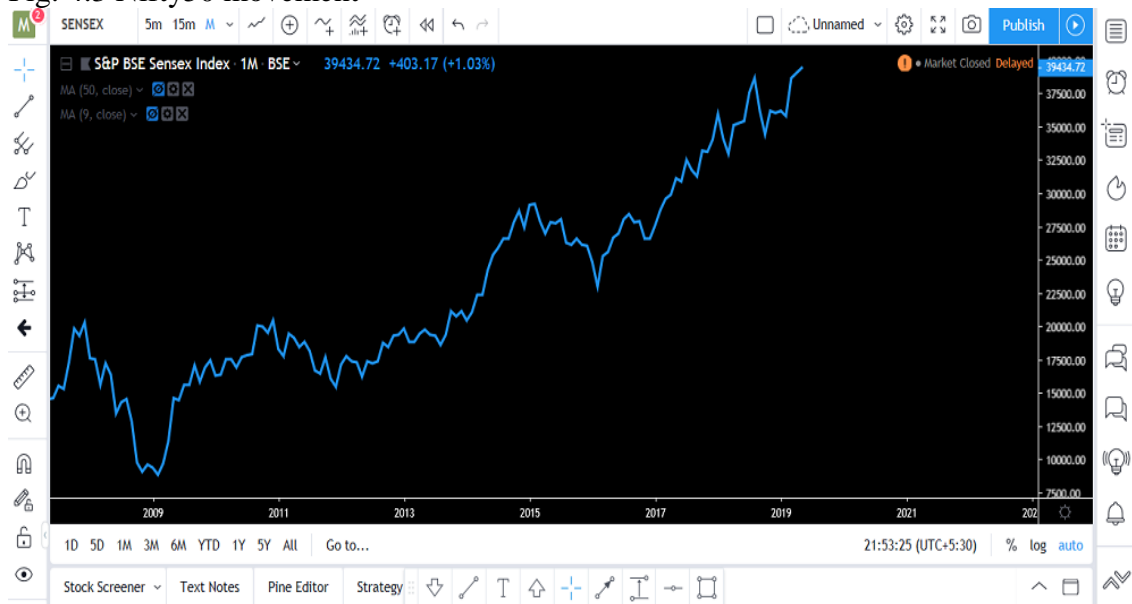
Fig: 4.3 Nifty50 movement

Fig: 4.4 S&P BSE Sensex movement

HOW TECHNICAL ANALYSIS HELPFUL:

If we use only technical analysis in itself and do not consider other aspects it is very unlikely that we will have much success in the long run, particularly in case of short-term investments. But if we use Technical analysis along with fundamental analysis or discount the industry and company related news while considering the valuation, our chances of minimizing the risk brightens. One thing that we must realize is that technical analysis provides us only with the trend and judge future on that basis; it can be far from actual in few cases. Therefore the best use of technical analysis is to realize the trend and levels at which it will break the trend so that one is prepared to take positions when such trend breaks. It is because of this disadvantage that Technical analysis more useful only for short-term investing.

METHODS OF TECHNICAL ANALYSIS:

Technical Analysis is done by identifying the trend from past movements and then using it as a tool to predict future price movements of the stock. It can be done by using any of the following methods:

a) Moving Averages:

This method is used to predict the trend and specify various support and resistance levels in the short and long term period. Most commonly used moving averages are 50 DMAs and 200 DMAs. Where DMA means Days Moving Average.

b) Charts & Patterns:

Some analysts use charts and patterns to decide on the trend and then judge the future movement. The tool used by such analyst is converting the chart in one of

the many form of many shapes commonly formed by stocks. Some of such patterns are:

Reversal Patterns	Continuous Patterns
1. Bump and Run	1.Cup with Handle
2. Double Top	2. Flag Pennant
3. Double Bottom	3. Symmetric Triangle
4. Head And Shoulders Top	4.Ascending Triangle
5. Head And Shoulders Bottom	5. Descending Triangle
6. Falling Wedge	6. Price Channel
7. Rising Wedge	7. Rectangle
8. Rounding Bottom	8. Measured {Bear} Move
9. Triple Top	
10. Triple Bottom	

CHARTS:

In technical analysis, charts are similar to the charts that you see in any business setting. A chart is simply a graphical representation of a series of prices over a set time frame. For example, a chart may show a stock's price movement over a one-year period, where each point on the graph represents the closing price for each day the stock is traded:

Fig: 4.5

It is a representation of the price movements of a stock over a 3month period. The bottom of the graph shows horizontally (x-axis) is the date or time scale. On the right hand side, running vertically (y-axis), the price of the security is shown. By looking at the graph we see that in 5the February, 2019(Point #1), the price of this stock was around Rs.4703.60, whereas on11th March, 2019 (point #2) the stock's price is around Rs 5,159.80. This tells us that the stock has risen between February, 2019 and March, 2019.

CHART PROPERTIES:

There are several things that we should be aware of when looking at a chart, as these factors can affect the information that is provided. They include th

- Time Scale

- Price Scale

- Price Point Property

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THE TIME SCALE:

The time scale refers to the range of dates at the bottom of the chart, which can vary from decades to minutes. The most frequently used time scales are Intraday, Daily, Weekly, Monthly, Quarterly & Annually and in Intraday we have five minutes, 10 minutes, 15 minutes, 20 minutes, 30 minutes and one hour. The shorter the time frame, the more detailed the chart. Each data point can represent the closing price of the period or show the open, the high, the low and the close depending on the chart used. Intraday charts plot price movement within the period of one day. This means that the time scale could be as short as five minutes or could cover the whole trading day from the opening bell to the closing bell.

Daily charts are comprised of a series of price movements in which each price point on the chart is a full day's trading condensed into one point (candle, bar or line). Again, each point on the graph can be simply the closing price or can entail the open, high, low and close for the stock over the day. These data points are spread out over weekly, monthly and even yearly time scales to monitor both short-term and intermediate trends in price movement.

Weekly, monthly, quarterly and yearly charts are used to analyze longer term trends in the movement of a stock's price. Each data point in these graphs will be a condensed version of what happened over the specified period. So for a weekly chart, each data point will be a representation of the price movement of the week. For example, if you are looking at a chart of weekly data spread over a five-year period and each data point is the closing price for the week, the price that is plotted will be the closing price on the last trading day of the week, which is usually Friday.

THE PRICE SCALE AND PRICE POINT PROPERTIES:

The price scale is on the right-hand side of the chart. It shows a stock's current price and compares it to past data points. This may seem like a simple concept in that the price scale goes from lower prices to higher prices as you move along the scale from the bottom to the top. The problem, however, is in the structure of the scale itself. A scale can either be constructed in a linear (arithmetic) or logarithmic way, and both of these options are available on most charting services.

TYPES OF CHARTS:

There are six types of charts, though there are six types of charts only four out of them are commonly used by investors and traders on the information that they are seeking and their individual skill levels.

The chart types are:

1. Line Chart

2. Bar Chart

3. Candlestick Chart

4. Point and Figure

5. Kagi

6. Renko

LINE CHART:

The basic of the four charts is the line chart because it represents only the closing prices over a set period of time. The line is formed by connecting the closing prices over the time frame. Line charts do not provide visual information of the trading range for the individual points such as the high, low and opening prices. However, the closing price is often considered to be the most important price in stock

data compared to the high and low for the day and this is why it is the only value used in line charts.

Fig : 4.6

BAR CHARTS:

Fig: 4.7

The bar chart expands on the line chart by adding several more key pieces of information to each data point. The chart is made up of a series of vertical lines that represent each data point. This vertical line represents the high and low for the trading period, along with the closing price. The close and open are represented on the vertical line by a horizontal dash. The opening price on a bar chart is illustrated by the dash that is located on the left side of the vertical bar. Conversely, the close is represented by the dash on the right. Generally, if the left dash (open) is lower than the right dash (close) then the bar will be shaded black, representing an up period for the stock, which means it has gained value. A bar that is colored red signals that the

stock has gone down in value over that period. When this is the case, the dash on the right (close) is lower than the dash on the left (open).

The highest price for the day

Closing price

Opening price

The lowest price for the day
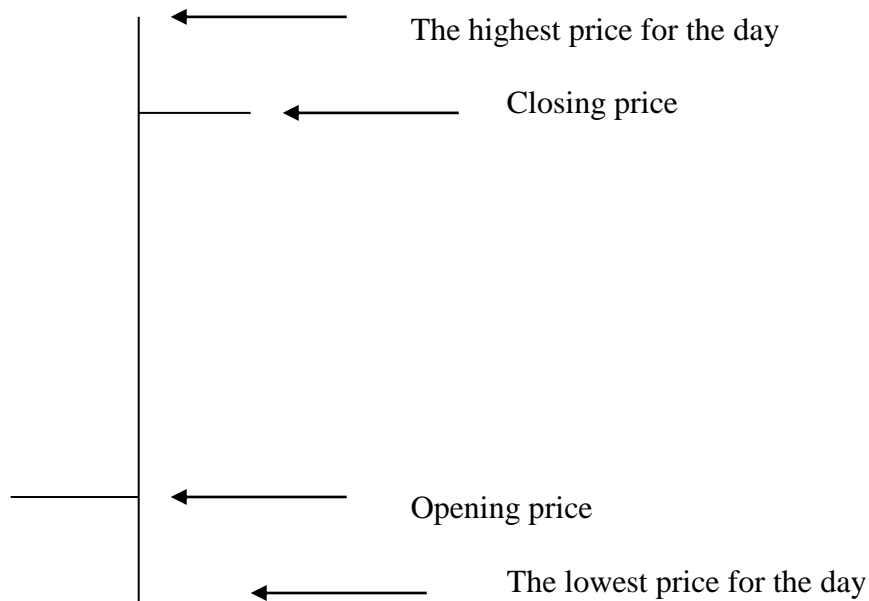
Fig : 4.8

CANDLESTICK CHARTS:

HISTORY:

Candlestick charting can be traced back to the 1700's as a tool used for rice trading. One of the great rice traders of the 1800's, Homma is widely credited for developing the candlestick charting basics used today. In the west, Candlestick Charting has grown in popularity and use, thanks to the efforts of Steve Nisson and Greg Morris. Candlestick charts are visually appealing and can be a valuable tool in the technician's toolbox as it gives insight into current investor sentiment, allowing for the determination of short term tops and bottoms.

The candlestick chart is similar to a bar chart, but it differs in the way that it is visually constructed. Similar to the bar chart, the candlestick also has a thin vertical line showing the period's trading range. The difference comes in the formation of a wide bar on the vertical line, which illustrates the difference between

the open and close. And, like bar charts, candlesticks also rely heavily on the use of colors to explain what has happened during the trading period. A major problem with the candlestick color configuration, however, is that different sites use different standards; therefore, it is important to understand the candlestick configuration used at the chart site you are working with. There are two color constructs for days up and one for days that the price falls. When the price of the stock is up and closes above the opening trade, the candlestick will usually be white or clear. If the stock has traded down for the period, then the candlestick will usually be red or black, depending on the site. If the stock's price has closed above the previous day's close but below the day's open, the candlestick will be black or filled with the color that is used to indicate an up day.

The highest price for the day

Open or Closing Price

The body is red, if the stock
Closed lower. Body is blue if
It is closed at higher

Open or Closing Price
The lowest price for the day
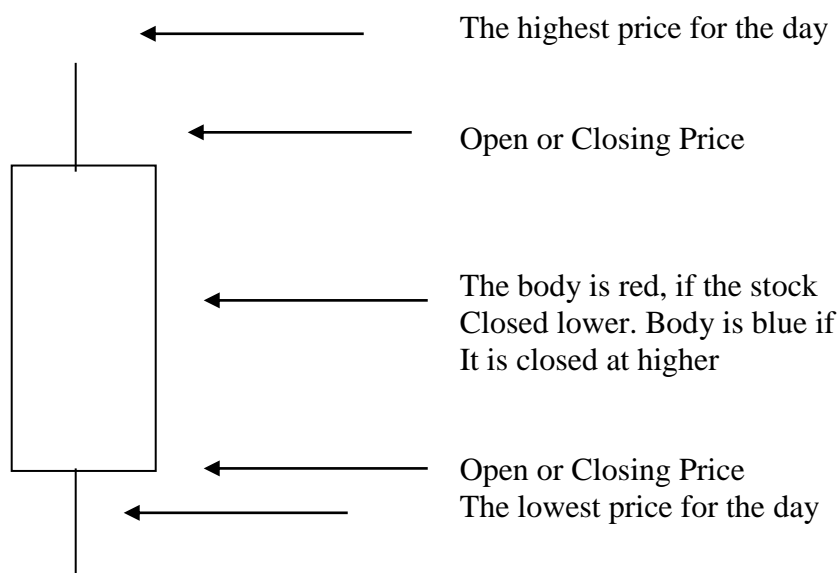
Fig : 4.9

The candle is comprised of two parts, the body and the shadows. The body encompasses the open and closing price for the period. The candle body is either filled with red or blue colour then the security closed below the open, when the candle is transparent irrespective of colour then the security closed above the open price. The candlestick shadow encompasses the intra period high and low (Note: In

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candlestick charting the following periods are often used; 5 min, 15 min, 1 hour, daily and weekly). Long shadows, show that the trading extended well beyond the opening and/or closing price, while short shadows, show that trading was confined closely to the open and/or closing price.

Fig : 4.10

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CANDLESTICK TERMS:

LONG, AND SHORT BODIES; MARUBOZO AND SPINNING TOPS
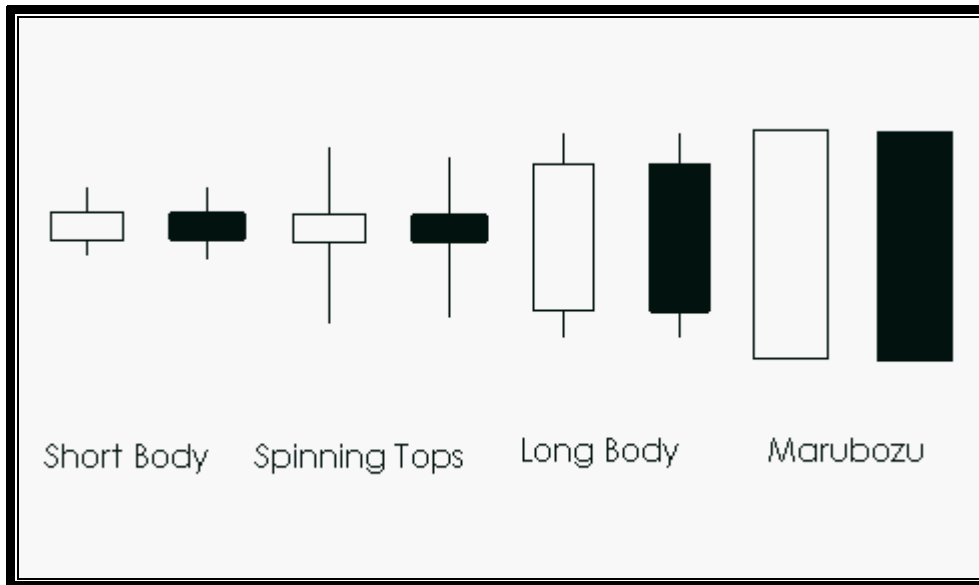
Fig: 4.11

A long body is a candlestick with a very long body when compared with other recent candles. White bodies show intense buying pressure, where as black bodies show intense selling pressures. Long white candles are generally bullish, but are also found at blowout tops, so they must be interpreted with surrounding candles. Similar long black candles are generally bearish, but are also found at capitulation bottoms. Long bodies with no upper and lower shadows are called Marubozo's. Marubozo's are more powerful than long candles as they show a steady advance (or decline if black) throughout the trading period. A short candle is the opposite of a long candle and usually implies consolidation, as the stock traded in a narrow range during the period. Short candles with long upper and lower shadows are called spinning tops, and are potential reversal signs, as it shows that despite trading in a wide range, the security closed close to the open. A spinning top becomes a doji as the closing price approaches the open price.

<u>DOJI'S:</u>
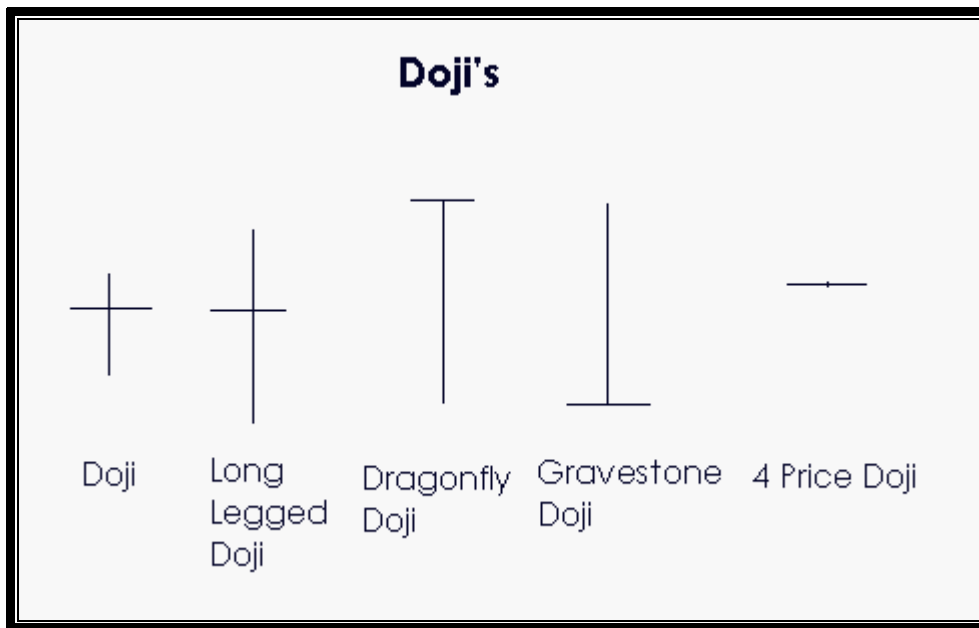
Fig : 4.12

Doji's are powerful reversal indicating candlesticks and are formed when the security opens and closes at the same level, implying indecision in the stock price. Depending on the location and length of the shadows, doji's can be categorized into the following formations: doji, long legged-doji, butterfly doji, gravestone doji, 4 price doji, etc. Doji's become more significant when seen after an extended rally of long bodied candles (bullish or bearish) and are confirmed with an engulfing.(a long candlestick formed over the next period which engulfs the doji body).

A long legged-doji is formed when the stock opens at a level, trades in a considerable trading range only to close at the same level as it opened. Long legged-doji's become more powerful when proceeded by small candles, as a sudden burst of volatility in a relative unvolatile stock can imply a trend change is coming.

Dragonfly Doji's are doji's that opened at the high of a session, had a considerable interperiod decline, then find support to rally back to close at the same

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level as the open. Dragonfly Doji's are often seen after a moderate decline, and are bottom reversal indicators when confirmed with a bullish engulfing.

Gravestone Doji's are the opposite of the Dragonfly Doji and are top reversal indicators when confirmed with bearish engulfing. As the name implies, gravestone doji's look like a gravestone, and could signal impending doom for a stock. 4 price doji's occur when the stock opens trades and closes at virtually the same level for the period. These are very rare, except with thinly traded securities.

ENGULFINGS:
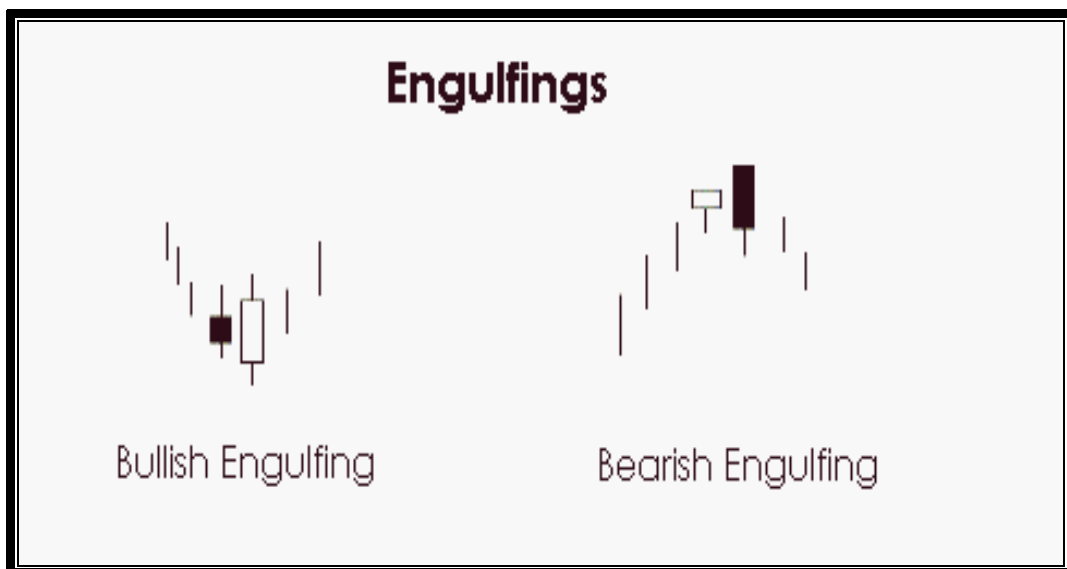
Fig: 4.13

An engulfing occurs when the candle body engulfs the previous candles body. White engulfing candles are bullish engulfing; where as black engulfing candles are bearish engulfings. Bullish engulfings are commonly found at short term bottoms, where as bearish engulfings at tops. Many candlesticks, such as dojis, hammers, hanging mans need confirmation of a trend change with an engulfing (bullish engulfing at bottoms, bearish engulfings at tops).

HAMMERS/ HANGING MAN:
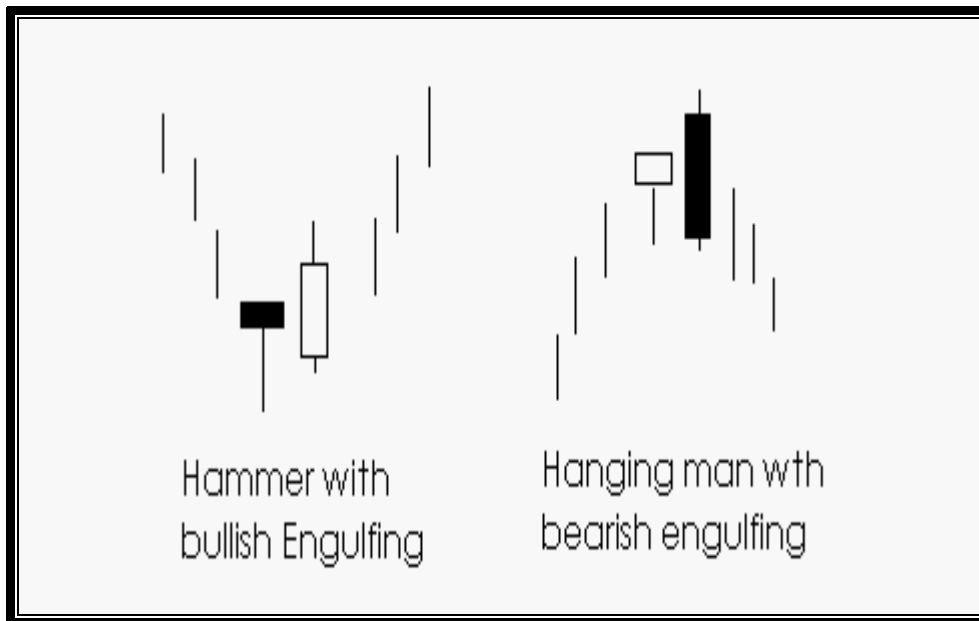
Fig: 4.14

Hammers and hanging man's are short body candles with little or no upper shadow, and a lower shadow at lease twice as long as the candle body. Hammers are formed after declines, and hanging man's after advances. When confirmed they become powerful reversal signals, especially the hammer. The expression "hammers out a bottom" refers to when after the open, the downtrend in a stock continues, until at some point, enough buying interest is generated, to bring prices close to where they open.

Confirmation comes from a bullish engulfing, showing the trader that the up trend is established. The color of the hanging man/hammer is unimportant, but some consider white hammers and black hanging man's more potent reversal signals.

GAPS:
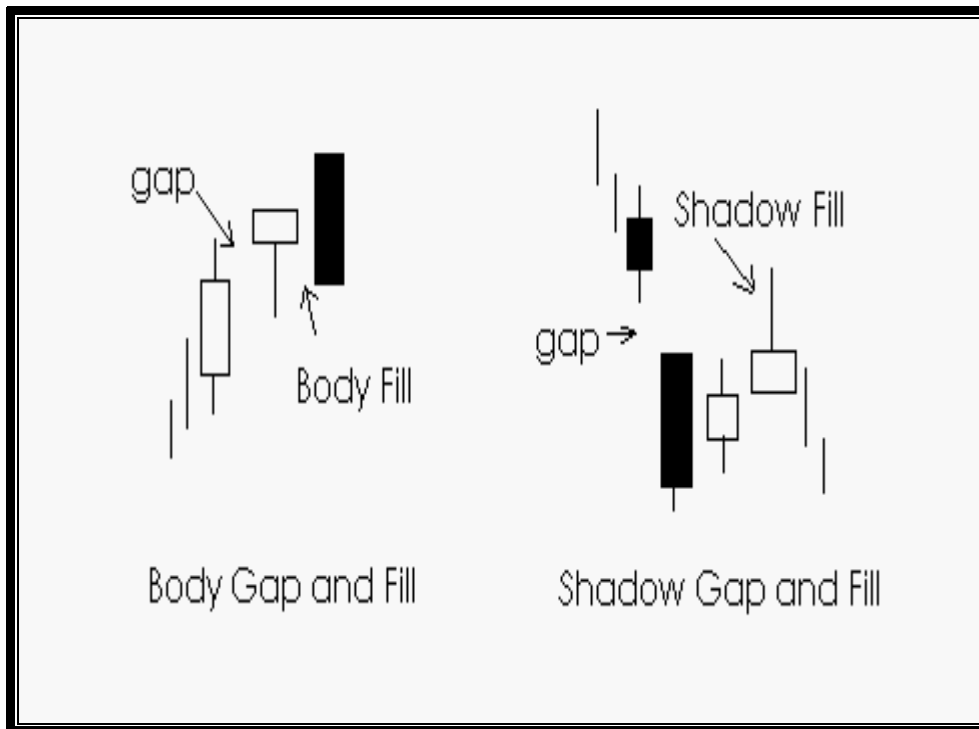
Fig: 4.15

A gap occurs when a candlestick body doesn't fall within the range of the previous candlestick body, a more loosely interpreted definition of a gap, requires no overlap between the shadows, making it obvious on a bar chart as well. You will often hear "All Gaps Get Filled", which is untrue. While the vast majority of gaps do get filled, you can find some charts, where a gap has never filled. Depending on how you define a gap, should base your definition of a gap fill. For instance I consider a gap when 2 bodies don't overlap, so I wait for a body fill to call the gap close. If one was using the criteria of shadow overlap, a gap fill would occur with a shadow fill. Gaps are typically continuation patterns, and sometimes mark the 50% point of a move. They become more significant as the stock approaches the level of the gap as it often acts as a magnet. During a gap fill, it is considered bearish closing below the

bottom of the gap and bullish closing above it. Once formed gap's will often serve as strong support/resistance levels even after being closed for some time.

Exhaustion gaps signify the end of market bottoms and tops, where initially overwhelming buying pressure, is soon consumed by selling pressure (and vice versa for bottoms). Exhaustion gaps have significant volume associated with them, and are often closed within 3 trading days. Sometimes an exhaustion gap will be followed by another gap at the same levels; some examples are shooting stars, doji stars, abandoned baby, etc. These 2 gap formation are powerful reversal signals.
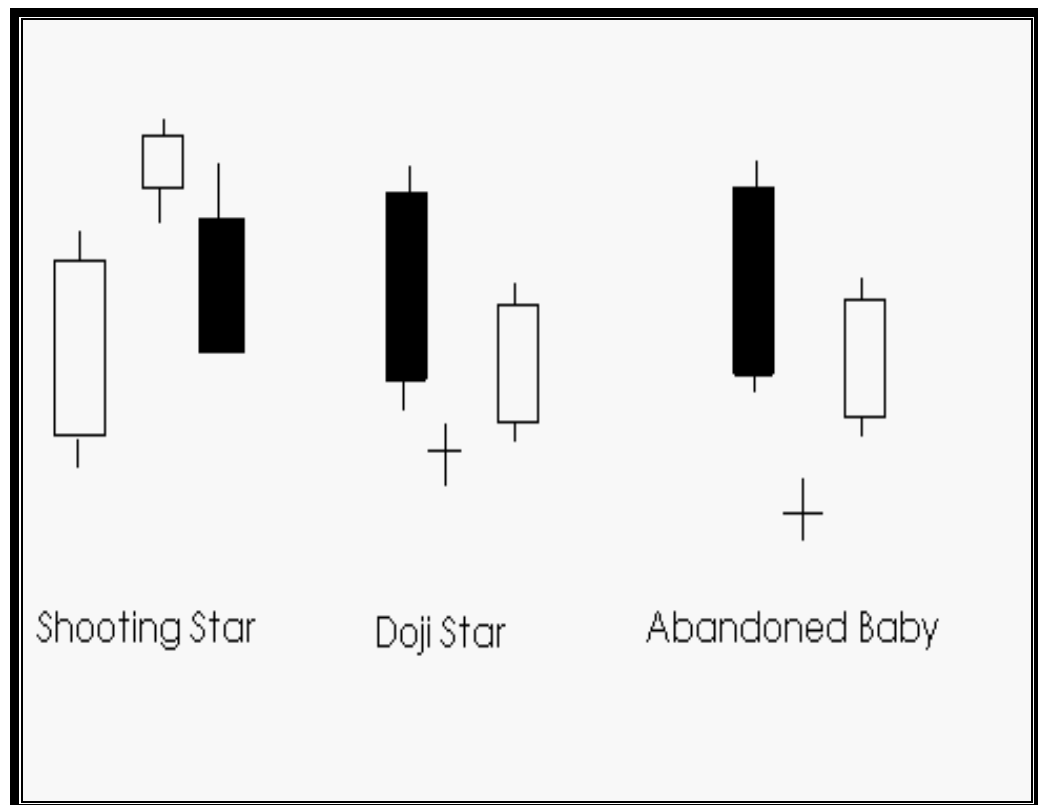
Fig: 4.16

Three Gap Play occurs when a stock gaps in the direction of the trend for close to 3 consecutive periods; with the final gap is an exhaustion gap that is larger then the previous gaps with respect to size and volume. After the exhaustion gap, the trend changes all of the gaps immediately get filled. After the final gap is filled, the

stock turns and continues well beyond the initial exhaustion gap. Although pretty rare, they can be very profitable if recognized early and swing traded.

CHART ANALYSIS:

Chart analysis is a technical study whose objective is to determine market trends by analyzing charts based on share price evolutions and traded volumes. The charts can be analyzed based upon few parameters and they are:

1. Overall Trend:

    The first step is to identify the overall trend. This can be accomplished with trend lines, moving averages or peak/trough analysis. As long as the price remains above its uptrend line, selected moving averages or previous lows, the trend will be considered bullish.

2. Support:

    Areas of congestion or previous lows below the current price mark support levels. A break below support would be considered bearish.

3. Resistance:

    Areas of congestion and previous highs above the current price mark the resistance levels. A break above resistance would be considered bullish.

4. Momentum:

    Momentum is usually measured with an oscillator such as MACD. If MACD is above its 9-day EMA (exponential moving average) or positive, then momentum will be considered bullish, or at least improving.

5. Buying/Selling Pressure:

    For stocks and indices with volume figures available, an indicator that uses volume is used to measure buying or selling pressure.

6. Relative Strength:

The price relative is a line formed by dividing the security by a benchmark. For stocks it is usually the price of the stock divided by the S&P 500. The plot of this line over a period of time will tell us if the stock is outperforming (rising) or under performing (falling) the major index.

The final step is to synthesize the above analysis to ascertain the following:

- Strength of the current trend.

- Maturity or stage of current trend.

- Reward to risk ratio of a new position.

- Potential entry levels for new long position.

SUPPORT & RESISTANCE:

Support and resistance represent key junctures where the forces of supply and demand meet. In the financial markets, prices are driven by excessive supply (down) and demand (up). Supply is synonymous with bearish, bears and selling. Demand is synonymous with bullish, bulls and buying. As demand increases, prices advance and as supply increases, prices decline. When supply and demand are equal, prices move sideways as bulls and bears slug it out for control.

SUPPORT:

Support is the price level at which demand is thought to be strong enough to prevent the price from declining further. The logic dictates that as the price declines towards support and gets cheaper, buyers become more inclined to buy and sellers become less inclined to sell. By the time the price reaches the support level, it is

believed that demand will overcome supply and prevent the price from falling below support.

After a support level is penetrated, it often becomes a resistance level; this is because investors want to limit their losses and will sell later, when prices approach the former level.
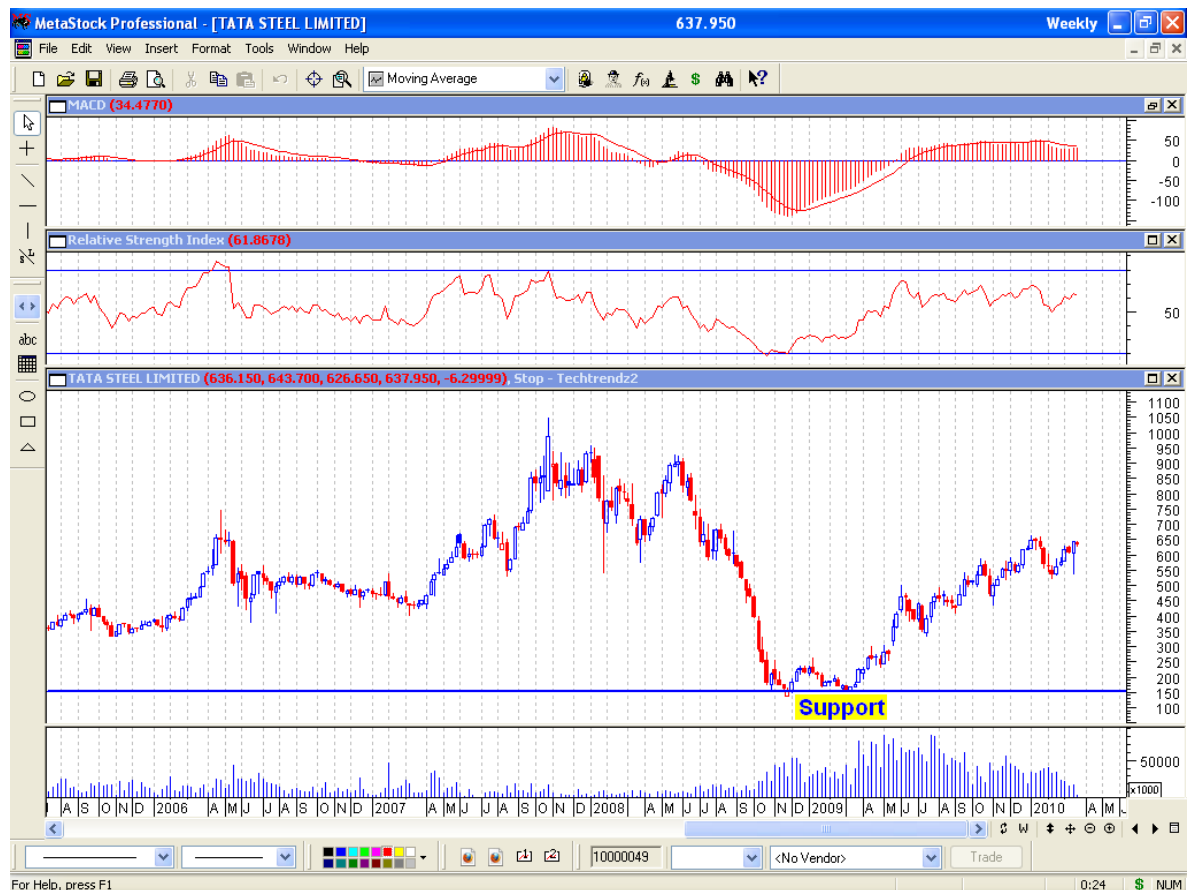
Fig: 4.17

RESISTANCE

Resistance is the price level at which selling is thought to be strong enough to prevent the price from rising further. The logic dictates that as the price advances towards resistance, sellers become more inclined to sell and buyers become less inclined to buy. By the time the price reaches the resistance level, it is believed that supply will overcome demand and prevent the price from rising above resistance.

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After a resistance level is penetrated, it often becomes a support level; this is because buyers who didn't buy at that price before it went up are now willing to buy at that price.

The concept of SUPPORT AND RESISTANCE is essential to understanding and interpreting the markets. Just as a ball bounces when it hits the floor or drops after being thrown to the ceiling, support and resistance define natural boundaries for rising and falling prices.

Buyers and sellers are constantly in battle mode. Support defines that level where buyers are strong enough to keep price from falling further. Resistance defines that level where sellers are too strong to allow price to rise further. Support and resistance play different roles in up trends and down trends. In an uptrend, support is where a pullback from a rally should end. In a downtrend, resistance is where a pullback from a decline should end.

Support and resistance are created because price has memory. Those prices where significant buyers or sellers entered the market in the past will tend to generate a similar mix of participants when price again returns to that level.

When price pushes above resistance, it becomes a new support level. When price falls below support, that level becomes resistance. When a level of support or resistance is penetrated, price tends to thrust forward sharply as the crowd notices the BREAKOUT and jumps in to buy or sell. When a level is penetrated but does not attract a crowd of

buyers or sellers, it often falls back below the old support or resistance. This failure is known as a FALSE BREAKOUT.

Support and resistance come in all varieties and strengths. They most often manifest as horizontal price levels. The length of time that a support or resistance level exists determines the strength or weakness of that level. The strength or

weakness determines how much buying or selling interest will be required to break the level. Also,

The greater volume traded at any level, the stronger that level will be. Support and resistance exist in all time frames and all markets. Levels in longer time frames are stronger than those in shorter time frames.

Fig: 4.18

THE IMPORTANCE OF SUPPORT AND RESISTANCE:

Support and resistance analysis is an important part of trends because it can be used to make trading decisions and identify when a trend is reversing. For example, if a trader identifies an important level of resistance that has been tested several times but never broken, he or she may decide to take profits as the security moves toward this point because it is unlikely that it will move past this level.

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Support and resistance levels both test and confirm trends and need to be monitored by anyone who uses technical analysis. As long as the price of the share remains between these levels of support and resistance, the trend is likely to continue. It is important to note, however, that a break beyond a level of support or resistance does not always have to be a reversal. For example, if prices moved above the resistance level of an up trending channel, the trend have accelerated and not reversed. This means that the price appreciation is expected to be faster than it was in the channel.

Being aware of these important support and resistance points should affect the way that you trade a stock. Traders should avoid placing orders at these major points, as the area around them is usually marked by a lot of volatility. If you feel confident about making a trade near a support or resistance level, it is important that you follow this simple rule: do not place orders directly at the support or resistance level. This is because in many cases, the price never actually reaches the whole number, but flirts with it instead. So if you are bullish on a stock that is moving toward an important support level, do not place the trade at the support level. Instead, place it above the support level, but within a few points. On the other hand, if you are placing stops or short selling, set up your trade price at or below the level of support.

Fig: 4.19

SUPPORT & RESISTANT LEVELS HELP YOU MAKE PROFITABLE TRADING DECISIONS:

Identification of key support and resistance levels is an essential ingredient to successful and profitable trading. Being aware of the support and resistant levels of stocks and indices can greatly enhance analysis and forecasting abilities.

If a security is approaching an important support level, it can serve as an alert to be extra vigilant in looking for signs of increased buying pressure and a potential reversal. If a security is approaching a resistance level, it can act as an alert to look for signs of increased selling pressure and potential reversal.

If a support or resistance level is broken, it signals that the relationship between supply and demand has changed. A resistance breakout signals that demand

(bulls) has gained the upper hand and a support break signals that supply (bears) has won the battle.

VOLUME:

Volume is simply the number of shares or contracts that trade over a given period of time, usually a day. Higher volume means the security has been more active. To determine the movement of the volume (up or down), chartists look at the volume bars that can usually be found at the bottom of any chart. Volume bars illustrate how many shares have traded per period and show trends in the same way that prices do.
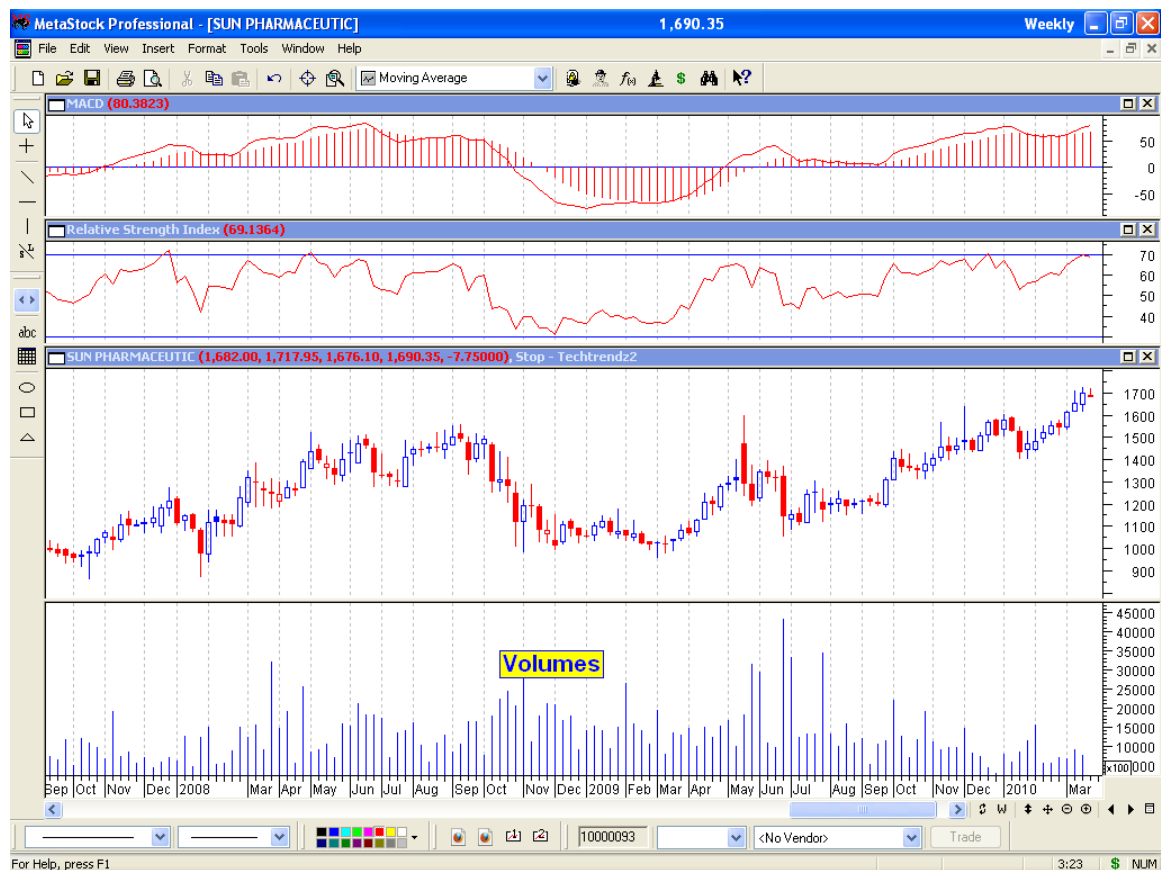
Fig: 4.20

IMPORTANCE OF VOLUME

Volume is an important aspect of technical analysis because it is used to confirm trends and chart patterns. Any price movement up or down with relatively high volume is seen as a stronger, more relevant move than a similar move with weak volume. Therefore, if we are looking at a large price movement, we should also examine the volume to see whether it tells the same story.

Say, for example, that a stock jumps 5% in one trading day after being in a long downtrend. Is this a sign of a trend reversal? This is where volume helps traders. If volume is high during the day relative to the average daily volume, it is a sign that the reversal is probably for real. On the other hand, if the volume is below average, there may not be enough conviction to support a true trend reversal. Volume should move with the trend. If prices are moving in an upward trend, volume should increase (and vice versa). If the previous relationship between volume and price movements starts to deteriorate, it is usually a sign of weakness in the trend. For example, if the uptrend but the up trading days are marked with lower volume, it is a sign that the trend is starting to lose its legs and may soon end.

When volume tells a different story, it is a case of divergence, which refers to a contradiction between two different indicators. The simplest example of divergence is a clear upward trend on declining volume.

VOLUME AND CHART PATTERNS:

The other use of volume is to confirm chart patterns. Patterns such as head and shoulders, triangles, flags and other price patterns can be confirmed with volume. In most chart patterns, there are several pivotal points that are vital to what the chart is able to convey to chartists. Basically, if the volume is not there to confirm the pivotal moments of a chart pattern, the quality of the signal formed by the pattern is weakened.

VOLUME PRECEDES PRICE:

Another important idea in technical analysis is that price is preceded by volume. Volume is closely monitored by technicians and chartists to form ideas on upcoming trend reversals. If volume is starting to decrease in an uptrend, it is usually a sign that the upward run is about to end. Now that we have a better understanding of some of the important factors of technical analysis, we can move on to charts, which help to identify trading opportunities in prices movements.

Indicators used for triggering a call:

RELATIVE STRENGTH INDEX (RSI):

The Relative Strength Index (RSI) is a trading indicator in the technical analysis of financial markets. It is intended to indicate the current and historical strength or weakness of a market based on the closing prices of completed trading periods. It assumes that prices close higher in strong market periods, and lower in weaker periods and computes this as a ratio of the number of incrementally higher closes to the incrementally lower closes.

The Relative Strength Index was developed by J. Welles Wilder and published in a 1978 book, New Concepts in Technical Trading Systems, and in Commodities magazine (now Futures magazine) in the June 1978 issue. The RSI method may be classified as a momentum oscillator measuring the velocity and magnitude of directional price movements. Momentum is the rate of the rise or fall in price.

CALCULATION:

$$RSI = 100 - \frac{100}{1+RS}$$

RS = Average Gain/ Average loss

Average Gain = [(previous Average Gain)*13 + Current Gain] /14

To simplify our explanation of the formula, the RSI has been broken down into its basic components which are the RS, the Average Gain, and the Average Loss. To calculate RSI values for a given dataset, first find the magnitude of all gains and losses for the 14 periods prior to the time where you wish to start the calculation. (Note: 14 is the standard number of periods used when calculating the RSI. If a different number is specified, just substitute that number in for "14" throughout this discussion.)

It is important to understand that the RSI is a "running" calculation and the accuracy of the calculation depends on how long ago the calculations started. The first RSI value is an estimate - subsequent values improve on that estimate. We should calculate at least 14 values prior to the start of any values that you will rely on - going back 28+ periods is even better.

To start the running calculation, the First Average Gain is calculated as the total of all gains during the past 14 periods divided by 14. Similarly, the First Average Loss is calculated as the total magnitude of all losses during the past 14 periods divided by 14. The next values for the "averages" are calculated by taking the previous value, multiplying it by 13, adding in the next Gain (or Loss), and then dividing by 14. This is Wilder's modified "smoothing" technique in action.

The RS value is simply the **Average Gain divided by the Average Loss** for each period. Finally, the RSI is simply the RS converted into an oscillator that goes between zero and 100 using this formula: 100 - (100 / RS + 1). Here's an Excel Spreadsheet that shows the start of an RSI calculation in action.

When the Average Gain is greater than the Average Loss, the RSI rises because RS will be greater than 1. Conversely, when the Average Loss is greater than the Average Gain, the RSI declines because RS will be less than 1. The last part

of the formula ensures that the indicator oscillates between 0 and 100. Note: If the Average Loss ever becomes zero, RSI becomes 100 by definition.

IMPORTANT NOTE:

The more data points that are used to calculate the RSI, the more accurate the results. The smoothing factor is a continuous calculation that - in theory - takes into account all of the closing values in the data set. If you start an RSI calculation in the middle of an existing data set, your values will only approximate the true RSI value. Sharp Charts uses at least 250 data points prior to the starting date of any chart (assuming that much data exists) when calculating its RSI values. To duplicate our RSI numbers, you'll need to use at least that much data also.

USE: OVERBOUGHT/OVERSOLD:

The overbought and oversold levels for RSI are determined by 80 and 20 respectively. Generally, if the RSI rises above 20 it is considered bullish for the underlying stock. Conversely, if the RSI falls below 80, it is a bearish signal. Some traders identify the long-term trend and then use extreme readings for entry points. If the long-term trend is bullish, then oversold readings could mark potential entry points.

DIVERGENCES:

Buy and sell signals can also be generated by looking for positive and negative divergences between the RSI and the underlying stock. For example, consider a falling stock whose RSI rises from a low point of (for example) 15 back up to say, 55. Because

of how the RSI is constructed, the underlying stock will often reverse its direction soon after such a divergence. As in that example, divergences that occur after an overbought or oversold reading usually provide more reliable signals.

CENTERLINE CROSSOVER:

The centerline for RSI is 50. Readings above and below can give the indicator a bullish or bearish tilt. On the whole, a reading above 50 indicates that average gains are higher than average losses and a reading below 50 indicates that losses are winning the battle. Some traders look for a move above 50 to confirm bullish signals or a move below 50 to confirm bearish signals.

EXAMPLE:

In the below graph it is clearly shown that on 5th March RSI has crossed the 80 level from above to below, so the selling opportunity exist. Therefore sell signal can be generated at this level. And on the other hand 11th March the RSI has reached to over sell i.e., 20 level, so the buying opportunity has created. Therefore buy signal can be given at this level.

Fig: 4.21

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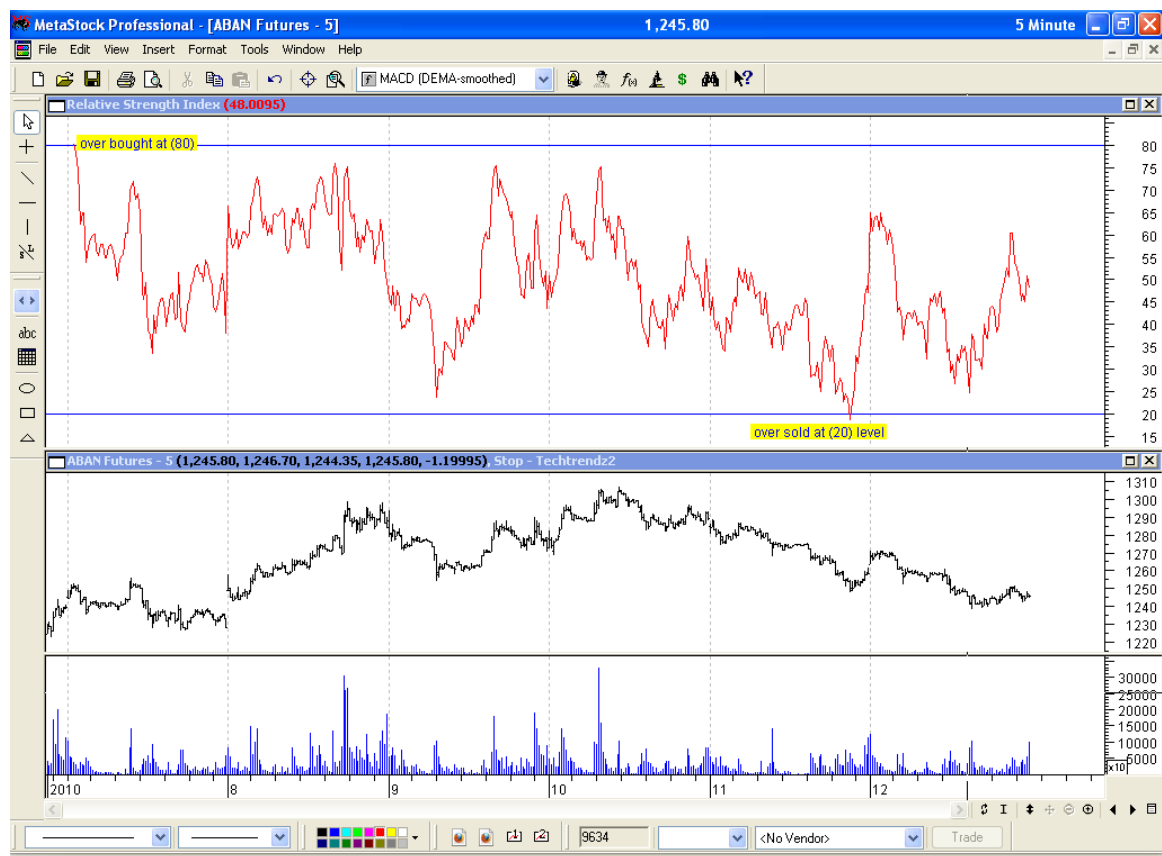
INTERPRETATION:

The RSI is presented in a graph below the price chart of a market. It is usually plotted as lines along with two moving averages connecting the relevant values for each period.

Wilder recommended a smoothing period of 14. This is by his reckoning of EMA smoothing, i.e. $\alpha = 1/14$ or $N = 27$.

Wilder posited that when price moves up very rapidly, at some point it is considered overbought. Likewise, when price falls very rapidly, at some point it is considered oversold. In either case, Wilder felt a reaction or reversal is imminent. The slope of the RSI is directly proportional to the velocity of the move. The distance traveled by the RSI is proportional to the magnitude of the move.

As a result, Wilder believed that tops and bottoms are indicated when RSI goes above 70 or drops below 30. Traditionally, RSI readings greater than the 70 level are considered to be in overbought territory, and RSI readings lower than the 30 level are considered to be in oversold territory. In between the 30 and 70 level is considered neutral.

As such traders will look for opportunities to go long when the RSI is below 30 and opportunities to go short when it is above 70. As with all indicators however this is best done when other parts of a trader's analysis line up with the indicator.

Wilder further believed that divergence between RSI and price action is a very strong indication that a market turning point is imminent. Bearish divergence occurs when price makes a new high but the RSI makes a lower high, thus failing to confirm. Bullish divergence occurs when price makes a new low but RSI makes a higher low.

Wilder thought that "failure swings" above 70 and below 30 on the RSI are strong indications of market reversals. For example, assume the RSI hits 76, pulls

back to 72, and then rises to 77. If it falls below 72, Wilder would consider this a "failure swing" above 70.

Finally, Wilder wrote that chart formations and areas of support and resistance could sometimes be more easily seen on the RSI chart as opposed to the price chart. The center line for the relative strength index is 50, which is often seen as both the support and resistance line for the indicator.

If the relative strength index is below 50, it generally means that the stock's losses are greater than the gains. When the relative strength index is above 50, it generally means that the gains are greater than the losses.

DIVERGENCE:

Fig: 4.22

MOVING AVERGE CONVERGENCE/DIVERGENCE (MACD):

Fig: 4.23

MACD is a technical analysis indicator created by Gerald Appel in the late 1970s.

MACD shows the difference between a fast and slow exponential moving average (EMA) of closing prices. Since it is based on moving averages, MACD is inherently a lagging indicator. MACD is a form of Absolute Price Oscillator (APO), meaning that it takes the difference of two price EMAs. An alternate form of price oscillator is the Percentage Price Oscillator (PPO) which is computed by dividing the difference between two moving averages of price by the longer moving average value. The relative values generated by a PPO will differ from an APO (or MACD) in subtle but significant ways, and are preferred when (a) comparing the oscillator values between

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different securities, especially of widely different prices, or (b) comparing oscillator values for the same security at significantly different times, especially for a security whose value has changed greatly. The APO (and hence the MACD) will show greater oscillator extremes for higher priced securities, unlike the percentage price oscillator. The final member of the price oscillator family is the Detrended price oscillator. Thomas Aspray added a histogram to the MACD indicator in 1986, as a means to anticipate MACD crossovers, and thereby not miss important moves in a security.

The example graph above right shows the MACD line, its signal line, and its histogram. The lower graph is the prices. The upper graph has the MACD line in red. The signal line, which is another EMA of the MACD, values them selves. The difference between the MACD line and its signal line is plotted histogram style along with the two MACD lines.

The set of periods for the averages can be varied. Appel and others have experimented with different combinations. The usual set of parameters is written as 12,26,9 for the fast EMA, slow EMA and signal line periods respectively.

MACD CALCULATION:

The standard periods originally published by Gerald Appel are 12 and 26 days:

MACD = EMA [12] OF PRICE − EMA [26] OF PRICE

A signal line (or trigger line) is then formed by smoothing this with a further EMA. The standard period for this is 9 days,

SIGNAL = EMA [9] OF MACD

The difference between the MACD and the signal line is often calculated and shown not as a line, but a solid block histogram style. This construction was made by Thomas Aspray in 1986. The calculation is simply

HISTOGRAM = MACD − SIGNAL

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INTERPRETATION:

MACD lines are often regarded as a trend following indicator designed to identify trend changes. The MACD histogram as drawn above is sometimes used as an oscillator. Three types of trading signals are generated:

- MACD line crossing the signal line.

- MACD line crossing 0.

- Divergence between price and histogram, or between MACD line and price.

The signal line crossing is the usual trading rule. The standard interpretation is to buy when the MACD crosses up through the signal line, or sell when it crosses down through the signal line. These crossings may occur too frequently, and other tests may have to be applied.

The histogram shows when a crossing occurs. When the MACD line crosses through zero on the histogram it is said that the MACD line has crossed the signal line.

The histogram can also help visualizing when the two lines are coming together. Both may still be rising, but coming together, so a falling histogram suggests a crossover may be approaching.

A crossing of the MACD line up through zero is interpreted as bullish, or down through zero as bearish. These crossings are of course simply the original EMA(12) line crossing up or down through the slower EMA(26) line.

Positive divergence between MACD and price arises when price makes a new sell off low, but the MACD doesn't make a new low (i.e. it remains above where it fell to on that previous price low). This is interpreted as bullish, suggesting the downtrend may be nearly over. Negative divergence is the same thing when rising

(i.e. price makes a new rally high, but MACD doesn't rise as high as before), this is interpreted as bearish.

THE DIFFERENT DAYS OF MACD:

20 days - choppy line. It isn't the most accurate, but is probably the most useful for short term traders.

30 day - similar to 20 day but provides a bit more certainty for the trend.

50 day - moving averages provide a much less volatile, smooth line. This can be used to detect somewhat longer term trends

100 day - similar to the 50 day, it is less volatile, and one of the most widely used for long term trends.

200 day - even less volatile, more of a rolling chart or smooth line. It doesn't react to quick movements in the stock price therefore it is rarely used.

CONVERGENCE AND DIVERGENCE:

Fig: 4.24

The MACD indicator generates Convergence and Divergence signals. If MACD crosses up through the signal line divergence has been generated and it is a buy signal. If MACD crosses down through the signal line convergence has been generated and it is a sell signal for the particular stock.

In the above Nifty one month futures from 10th March to 11th March, 2010 there are 3 divergence (buy) signals and 3 convergence (sell) signals has been generated.

MACD BENEFITS:

One of the primary benefits of MACD is that it incorporates aspects of both momentum and trend in one indicator. As a trend-following indicator, it will not be wrong for very long. The use of moving averages ensures that the indicator will eventually follow the movements of the underlying security. By using Exponential Moving Averages (EMAs), as opposed to Simple Moving Averages (SMAs), some of the lag has been taken out.

As a momentum indicator, MACD has the ability to foreshadow moves in the underlying security. MACD divergences can be key factors in predicting a trend change. A Negative Divergence signals that bullish momentum is waning, and there could be a potential change in trend from bullish to bearish. This can serve as an alert for traders to take some profits in long positions, or for aggressive traders to consider initiating a short position.

MACD can be applied to daily, weekly or monthly charts. MACD represents the convergence and divergence of two moving averages. The standard setting for MACD is the difference between the 12 and 26-period EMA. However, any combination of moving averages can be used. The set of moving averages used in MACD can be tailored for each individual security. For weekly charts, a faster set of moving averages may be appropriate. For volatile stocks, slower moving averages

may be needed to help smooth the data. Given that level of flexibility, each individual should adjust the MACD to suit his or her own trading style, objectives and risk tolerance.

TREND ANALYSIS OF KEERTHI INDUSTRIES LTD:

Table showing stock price and percentage change of keerthi industries ltd.

From 01st Feb,2019 to 30thApril,2019.

Date	Close Price		% Change
01-Feb-19	65.35		
04-Feb-19	65.3		-0.07651
05-Feb-19	64		-1.99081
06-Feb-19	64.1		0.15625
07-Feb-19	64		-0.15601
11-Feb-19	60.8		-5
12-Feb-19	60		-1.31579
13-Feb-19	57		-5
14-Feb-19	55.45		-2.7193
15-Feb-19	52.7		-4.95942
18-Feb-19	50.1		-4.93359
19-Feb-19	47.6		-4.99002
20-Feb-19	45.25		-4.93697
21-Feb-19	43		-4.97238
22-Feb-19	43		0
25-Feb-19	43.95		2.209302
26-Feb-19	43		-2.16155
27-Feb-19	41.9		-2.55814
28-Feb-19	43.9		4.77327
01-Mar-19	44.4		1.138952
05-Mar-19	46.6		4.954955
06-Mar-19	48.9		4.935622
07-Mar-19	51.3		4.907975
08-Mar-19	53.85		4.97076
11-Mar-19	56.5		4.921077
12-Mar-19	58.55		3.628319
13-Mar-19	61.45		4.953032
14-Mar-19	64.5		4.963385
15-Mar-19	67.7		4.96124
18-Mar-19	70.8		4.579025
19-Mar-19	71		0.282486
20-Mar-19	73		2.816901
22-Mar-19	69.5		-4.79452

25-Mar-19	66.1		-4.89209
26-Mar-19	62.8		-4.99244
27-Mar-19	60.75		-3.26433
28-Mar-19	63.55		4.609053
29-Mar-19	60.65		-4.56334
01-Apr-19	61.05		0.659522
02-Apr-19	61.5		0.737101
03-Apr-19	60.05		-2.35772
04-Apr-19	59		-1.74854
08-Apr-19	57.5		-2.54237
09-Apr-19	60.35		4.956522
10-Apr-19	63.2		4.722452
11-Apr-19	64.95		2.768987
12-Apr-19	63		-3.00231
15-Apr-19	63		0
16-Apr-19	65.45		3.888889
18-Apr-19	65.95		0.763942
22-Apr-19	63		-4.47309
25-Apr-19	63		0
26-Apr-19	65		3.174603
30-Apr-19	65.95		1.461538

Table :4.1
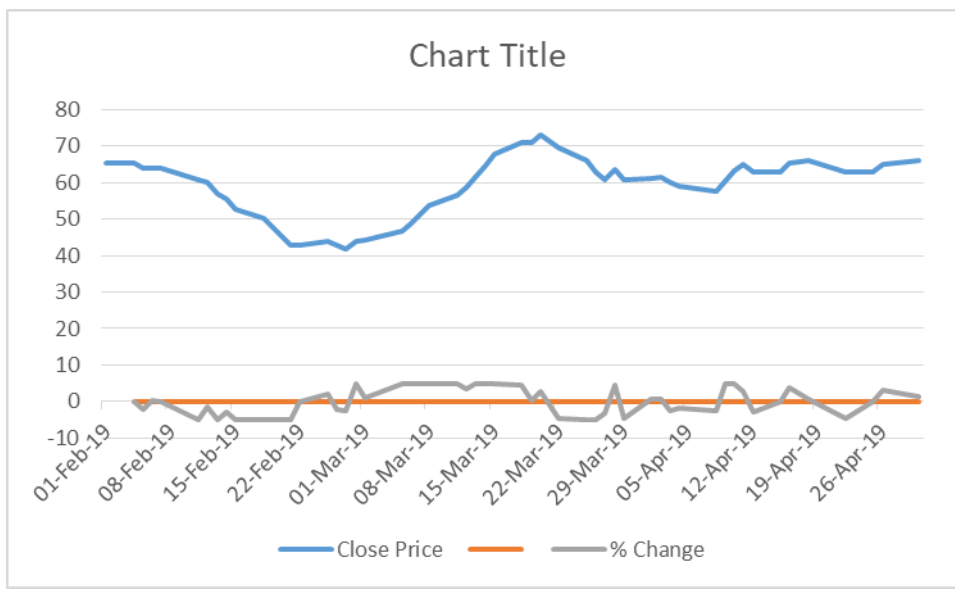
Fig :4.25

INTREPRETATION:

From the above chart it is clear that the percentage line is declining indicating

that there is a buy signal period from 22 feb to 1st march,19 , 29th march to

12nd april,19.

During the period 1st feb,19 to 10th feb,19, 10^{th}feb,19 to 22nd feb, 15^{th}march,19 to 22^{nd}march,19, 19^{th}april,19 to 26th april, the line is moving upward indicating sell signal period.

MOVING AVERAGES:

Moving averages are one of the most popular and easy to use tools available to the technical analyst. They smooth a data series and make it easier to spot trends, something that is especially helpful in volatile markets. They also form the building blocks for many other technical indicators and overlays. The two most popular types of moving averages are:

- **Simple Moving Average (SMA)**

- **Exponential Moving Average (EMA)**

SIMPLE MOVING AVERAGE (SMA):

A simple moving average is formed by computing the average (mean) price of a security over a specified number of periods. While it is possible to create moving averages from the Open, the High, and the Low data points, most moving averages are created using the closing price. For example: a 10-day simple moving average is calculated by adding the closing prices for the last 10 days and dividing the total by 10.

EXPONENTIAL MOVING AVERAGE (EMA):

In order to reduce the lag in simple moving averages, technicians often use exponential moving averages (also called exponentially weighted moving averages).

EMA's reduce the lag by applying more weight to recent prices relative to older prices. The weighting applied to the most recent price depends on the specified

period of the moving average. The shorter the EMA's period, the more weight that will be applied to the most recent price. For example: a 10-period exponential moving average weighs the most recent price 18.18% while a 20-period EMA weighs the most recent price 9.52%. As we'll see, the calculating and EMA is much harder than calculating an SMA. The important thing to remember is that the exponential moving average puts more weight on recent prices. As such, it will react quicker to recent price changes than a simple moving average. Here's the calculation formula.

EXPONENTIAL MOVING AVERAGE CALCULATION:

Exponential Moving Averages can be specified in two ways - as a percent-based EMA or as a period-based EMA. A percent-based EMA has a percentage as it's single parameter while a period-based EMA has a parameter that represents the duration of the EMA.

THE FORMULA FOR AN EXPONENTIAL MOVING AVERAGE:

EMA (current) = ((Price (current) – EMA (prev.)) x Multiplier) + EMA(prev.)

For a percentage-based EMA, "Multiplier" is equal to the EMA's specified percentage. For a period-based EMA, "Multiplier" is equal to $2 / (1 + N)$ where N is the specified number of periods.

Example: a 10-period EMA's Multiplier is calculated like this:

$(2 / (\text{Time periods} + 1)) = (2 / (10 + 1)) = 0.1818 (18.18\%)$

This means that a 10-period EMA is equivalent to an 18.18% EMA.

Below is a table with the results of an exponential moving average calculation for Eastman Kodak. For the first period's exponential moving average, the simple moving average was used as the previous period's exponential moving average (yellow highlight for the 10th period). From period 11 onward, the previous period's EMA was used. The calculation in period 11 breaks down as follows:

(C - P) = (87.75 – 86.705) = 1.045

(C - P) x K = 1.045 x .181818 = 0.189999

((C - P) x K) + P = 0.189999 + 86.705 = 86.895

SMA OF KEERTHI INDUSTRIES LTD

period	Date	closing price	5Days Total of closing price	5Days SMA
1	01-Feb-19	65.35		
2	04-Feb-19	65.3		
3	05-Feb-19	64		
4	06-Feb-19	64.1		
5	07-Feb-19	64	322.75	64.55
6	11-Feb-19	60.8	318.2	63.64
7	12-Feb-19	60	312.9	62.58
8	13-Feb-19	57	305.9	61.18
9	14-Feb-19	55.45	297.25	59.45
10	15-Feb-19	52.7	285.95	57.19
11	18-Feb-19	50.1	275.25	55.05
12	19-Feb-19	47.6	262.85	52.57
13	20-Feb-19	45.25	251.1	50.22
14	21-Feb-19	43	238.65	47.73
15	22-Feb-19	43	228.95	45.79
16	25-Feb-19	43.95	222.8	44.56
17	26-Feb-19	43	218.2	43.64
18	27-Feb-19	41.9	214.85	42.97
19	28-Feb-19	43.9	215.75	43.15
20	01-Mar-19	44.4	217.15	43.43
21	05-Mar-19	46.6	219.8	43.96
22	06-Mar-19	48.9	225.7	45.14
23	07-Mar-19	51.3	235.1	47.02
24	08-Mar-19	53.85	245.05	49.01
25	11-Mar-19	56.5	257.15	51.43
26	12-Mar-19	58.55	269.1	53.82
27	13-Mar-19	61.45	281.65	56.33
28	14-Mar-19	64.5	294.85	58.97
29	15-Mar-19	67.7	308.7	61.74
30	18-Mar-19	70.8	323	64.6
31	19-Mar-19	71	335.45	67.09
32	20-Mar-19	73	347	69.4
33	22-Mar-19	69.5	352	70.4
34	25-Mar-19	66.1	350.4	70.08

35	26-Mar-19	62.8	342.4	68.48
36	27-Mar-19	60.75	332.15	66.43
37	28-Mar-19	63.55	322.7	64.54
38	29-Mar-19	60.65	313.85	62.77
39	01-Apr-19	61.05	308.8	61.76
40	02-Apr-19	61.5	307.5	61.5
41	03-Apr-19	60.05	306.8	61.36
42	04-Apr-19	59	302.25	60.45
43	08-Apr-19	57.5	299.1	59.82
44	09-Apr-19	60.35	298.4	59.68
45	10-Apr-19	63.2	300.1	60.02
46	11-Apr-19	64.95	305	61
47	12-Apr-19	63	309	61.8
48	15-Apr-19	63	314.5	62.9
49	16-Apr-19	65.45	319.6	63.92
50	18-Apr-19	65.95	322.35	64.47
51	22-Apr-19	63	320.4	64.08
52	25-Apr-19	63	320.4	64.08
53	26-Apr-19	65	322.4	64.48
54	30-Apr-19	65.95	322.9	64.58

Table : 4.2

Fig :4.26

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The stock price curve is below the simple moving average curve during the period 01jan to 15jan,19, 1st feb to 1st march 19 and 20 march to 1st april shows the sell signal.

During the period 15th jan to 1st feb19 , 1st march to 20th april,19 stock price curve is above the simple moving average curve indicating buy signal.

EMA OF KEERTHI INDUSTRIES LTD

period	Date	closing price	Previous period EMA	5Days EMA
1	01-Feb-19	65.35		
2	04-Feb-19	65.3		
3	05-Feb-19	64		
4	06-Feb-19	64.1		
5	07-Feb-19	64		38.13
6	11-Feb-19	60.8	38.13	36.32
7	12-Feb-19	60	36.32	34.58
8	13-Feb-19	57	34.58	32.90
9	14-Feb-19	55.45	32.90	31.32
10	15-Feb-19	52.7	31.32	31.19
11	18-Feb-19	50.1	31.19	31.11
12	19-Feb-19	47.6	31.11	31.55
13	20-Feb-19	45.25	31.55	32.37
14	21-Feb-19	43	32.37	32.36
15	22-Feb-19	43	32.36	31.83
16	25-Feb-19	43.95	31.83	31.86
17	26-Feb-19	43	31.86	31.41
18	27-Feb-19	41.9	31.41	30.64
19	28-Feb-19	43.9	30.64	30.11
20	01-Mar-19	44.4	30.11	30.09
21	05-Mar-19	46.6	30.09	29.73
22	06-Mar-19	48.9	29.73	29.03
23	07-Mar-19	51.3	29.03	28.11
24	08-Mar-19	53.85	28.11	27.06
25	11-Mar-19	56.5	27.06	25.96
26	12-Mar-19	58.55	25.96	24.95
27	13-Mar-19	61.45	24.95	23.93
28	14-Mar-19	64.5	23.93	23.59
29	15-Mar-19	67.7	23.59	23.72
30	18-Mar-19	70.8	23.72	24.20
31	19-Mar-19	71	24.20	24.94

32	20-Mar-19	73	24.94	25.85
33	22-Mar-19	69.5	25.85	26.56
34	25-Mar-19	66.1	26.56	26.87
35	26-Mar-19	62.8	26.87	26.63
36	27-Mar-19	60.75	26.63	26.04
37	28-Mar-19	63.55	26.04	25.27
38	29-Mar-19	60.65	25.27	24.50
39	01-Apr-19	61.05	24.50	23.64
40	02-Apr-19	61.5	23.64	22.93
41	03-Apr-19	60.05	22.93	22.80
42	04-Apr-19	59	22.80	23.08
43	08-Apr-19	57.5	23.08	23.65

Table 4.3

Fig : 4.27

INTREPRETATION:

The stock price curve is below the Exponential moving average curve during the period 01jan to 15jan,19, 1st feb to 1st march 19 and 20 march to 1st april   11 shows the sell signal.

During the period 15th jan to 1st feb19 , 1st march to 20th april,19 stock price curve is above the Exponential moving average curve indicating buy signal.

JAPANESE CANDLESTICK METHOD OF KEERTHI INDUSTRIES LTD

Date	Open Price	High Price	Low Price	Close Price
01-Feb-19	66	66	65.35	65.35
04-Feb-19	65.3	65.3	65.3	65.3
05-Feb-19	64.6	64.6	64	64
06-Feb-19	64.1	64.1	64.1	64.1
07-Feb-19	64	64	64	64
11-Feb-19	60.8	60.8	60.8	60.8
12-Feb-19	60.7	60.7	60	60
13-Feb-19	59.9	59.9	57	57
14-Feb-19	56	56	55.4	55.45
15-Feb-19	53	53	52.7	52.7
18-Feb-19	50.2	50.25	50.1	50.1
19-Feb-19	48	48	47.6	47.6
20-Feb-19	46	46	45.25	45.25
21-Feb-19	43	46.8	43	43
22-Feb-19	41	44	40.85	43
25-Feb-19	41.9	43.95	40.85	43.95
26-Feb-19	43	43	43	43
27-Feb-19	40.85	44	40.85	41.9
28-Feb-19	40.85	43.95	39.85	43.9
01-Mar-19	44	46.05	42	44.4
05-Mar-19	46.6	46.6	46.6	46.6
06-Mar-19	48.9	48.9	48.9	48.9
07-Mar-19	51.3	51.3	49.5	51.3
08-Mar-19	53.85	53.85	49	53.85
11-Mar-19	55	56.5	55	56.5
12-Mar-19	59.3	59.3	58.1	58.55
13-Mar-19	60	61.45	60	61.45
14-Mar-19	64.5	64.5	64.5	64.5
15-Mar-19	67.7	67.7	67.7	67.7
18-Mar-19	70	70.8	67	70.8
19-Mar-19	73.95	73.95	67.4	71
20-Mar-19	71.3	73.95	67.5	73
22-Mar-19	73	73	69.35	69.5
25-Mar-19	66.15	66.15	66.1	66.1
26-Mar-19	65	65	62.8	62.8
27-Mar-19	65	65	59.7	60.75
28-Mar-19	58.05	63.55	58.05	63.55
29-Mar-19	62.75	64.9	60.4	60.65
01-Apr-19	61.6	61.7	60	61.05
02-Apr-19	61.05	63	61.05	61.5
03-Apr-19	63	63	60.05	60.05
04-Apr-19	60.05	62	59	59

08-Apr-19	57	57.5	57	57.5
09-Apr-19	57.5	60.35	55.05	60.35
10-Apr-19	63.35	63.35	63	63.2
11-Apr-19	60.5	64.95	60.5	64.95
12-Apr-19	66.95	67	63	63
15-Apr-19	66	66	61	63
16-Apr-19	64	65.45	61	65.45
18-Apr-19	65.45	68	63.05	65.95
22-Apr-19	68.45	68.5	63	63
25-Apr-19	63	65.95	63	63
26-Apr-19	65.95	66	61.1	65
30-Apr-19	62	65.95	62	65.95

Table : 4.4

Fig : 4.28

<u>INTREPRETATION:</u>

From the above graph stochostic line is falling from 1st jan 19. it gives sell signal from 1stjan to 14th jan. again on 1st march it reached previous lower. So it has support on that price. It form buy signal on 1st march to 18thmarch. on 18st march it crossed the resistance. So it will form sell signal is formed from 18th march19 to 30th april 19.

CHAPTER -5

FINDINGS

From the trend analysis chart it is clear that the percentage line is declining indicating that there is a buy signal period from 22 feb to 1st march,19 , 29th march to 12nd april,19.

During the period 1st feb,19 to 10th feb,19, 10^{th}feb,19 to 22nd feb, 15^{th}march,19 to 22^{nd}march,19, 19^{th}april,19 to 26th april, the line is moving upward indicating sell signal period.

From the SMA analysis The stock price curve is below the simple moving average curve during the period 01jan to 15jan,19, 1st feb to 1st march 19 and 20 march to 1st april shows the sell signal.

During the period 15th jan to 1st feb19 , 1st march to 20th april,19 stock price curve is above the simple moving average curve indicating buy signal.

From the EMA analysis The stock price curve is below the Exponential moving average curve during the period 01jan to 15jan,19, 1st feb to 1st march 19 and 20 march to 1st april 11 shows the sell signal.

During the period 15th jan to 1st feb19 , 1st march to 20th april,19 stock price curve is above the Exponential moving average curve indicating buy signal.

From the Japanese Candle stick analysis From the above graph stochostic line is falling from 1st jan 19. it gives sell signal from 1^{st}jan to 14th jan. again on 1st march it reached previous lower. So it has support on that price. It form buy signal on 1st march to 18^{th}march. on 18st march it crossed the resistance. So it will form sell signal is formed from 18th march19 to 30th april 19.

SUGGESTIONS

Technical Analysis generates calls for each and every day. It is suggested to trade in small quantities. So we can bear losses if market collapses suddenly.

It is better to follow strict stop losses if we trade in large quantities.

It is better to invest short term rather than long term investment in keerthi industries ltd.

While trading consider the foreign markets conditions and new Govt. policies.

CONCLUSIONS

The relevance of Technical Analysis tool in forecasting future prices of Keerthi Industries Ltd.

In Technical Analysis, by using various technical indicators depicts the future price of a stock.

Impact external factors are less.

This study depicts the fluctuations in the market because it has low volume.

In Technical Analysis by observing chart patterns and technical indicators I gave calls to the investors.

This has been done with daily closing price of stock and moving average of their price.

Technical Analysis is mostly useful for intraday investors only.

Investor has to follow strict stop loss in weak form market.

SUMMARY

The study is about Technical Analysis of the stock futures and to find out when to buy and sell the stock futures and which situation may be beneficial to the trader.

The stock futures of this company are for a period of 45 days is taken for the calculation purpose.

Moving Average Method, Trend Analysis Method and Japanese Candlestick Method are applicable for the Technical Analysis using the closing stock price at the end of each day for a period of 45 days.

LIMITATIONS

- The study is limited for keerthi industries ltd only.

- The study is limited for a short period, due to which the study may not be detailed in all respects.

- There are many tools in Technical Analysis but I have incorporated my study using three of them, which are important and widely used by technical analysts.

Due to time constrain all aspects are not covered in the study

BIBLIOGRAPHY

TEXTBOOKS

1) Investments, William F. Sharpe & Gordon J. Alexander, Sixth edition, Prentice hall of India pvt. ltd

2) Security analysis & portfolio management by Donald E. Fisher & Ronald J. Jordon, Prentice hall of India pvt. ltd.

3) Investment analysis and management by Charles P. Jones, Ninth edition, prentice hall of India pvt ltd.

4) Derivatives valuation & risk management by Dubofsky Miller. Oxford University press.

5) Investment analysis and portfolio management, second edition, Prasanna Chandra, Tata Mc Graw- Hill publishing company.

JOURNALS

- Journal of Finance
- Journal of Portfolio Management
- Portfolio Organizer
- ANDERSEN, J.V., S. GLUZMAN and D. SORNETTE, 2000. Fundamental framework for "technical analysis" of market prices.
- BAILEY, E.L., 1975. Marketing-cost Ratios of US Manufacturers: A Technical Analysis

WEBSITES

- www.nseindia.com
- www.bseindia.com
- www.keerthiindustries.com
- www.bloomberg.com