Financial Market Data Analysis

For the students of B.Com II Semester
Paper: Concepts in Valuation
E-content provided by:
Dr. Mohammad Anees,
Department of Business Administration,
University of Lucknow, Lucknow
For any query the students may feel free to contact me through:
1. WhatsApp no: 9415179375 2. Email: drmohdanees@gmail.com

Learning objectives:

After studying this chapter the students should be able to know:

- ✓ Meaning and significance of financial market data
- ✓ Basic aspects of Stock Market Quote/Information
- ✓ Reading the stock Quote Published in a Financial Paper
- ✓ How to Read Bond Information/Quote
- ✓ Technical Analysis and Interpreting Stock Market Data
- ✓ Some selected capital market theories
- ✓ Fundamental analysis and limitations of financial market data

Introduction

Financial Market data refers to the live streaming of trade-related data and the financial market data published in the media sources. It encompasses a range of information such as price, bid/ask quotes and market volume. Trading venues provide reports on various assets and financial instruments which are then distributed to traders and firms. Market data is available across thousands of global markets, including stocks, indices, forex and commodities.

Market data is used by traders to assess the worth of various assets, and help to make an approach to enter and exit trades. The aim of using market data is to get as much information about the asset one is planning to trade, in order to calculate market risk and the impact of live news releases.

Meaning

Financial market data is price and trade-related data for a financial instrument reported by a trading venue such as a stock exchange. Market data allows traders and investors to know the latest price and see historical trends for instruments such as equities, fixed-income products, derivatives, and currencies.

Benefits and limitation of market data

The delivery of market data is important as prices move quickly and traders need to make timely and informed decisions about opening and closing their positions.

Benefits of market data

Some of the benefits of published financial market are listed below:

1. Real Time Data

Market data is generated in real time, which means that it can be used to make quick but informed trading decisions.

2. Creating strategy for future trade

Real time markets data can also be used to access historical prices – these historical charts are a crucial part of technical analysis, and can be useful when creating a strategy for future trades.

3. Customized Data for different use

Market data is normally found in one place under a ticker symbol, which makes it easy to access. Commonly, market pricing data is kept separate from all other information, but some market data providers will choose to deliver fundamentals as well. In equities, this can include market valuations, company performance reports and reference data.

Limitations of market data

While using online financial market data following limitations are observed:

1. **Risk of latency**
   While passing real time market data there is always the risk lags in the delivery of information known as risk of latency, especially as the information can be coming from trading venues all over the world. When choosing your data provider, it is important to ensure that they are reliable, and have the capabilities to give you high speed access to accurate market data.
2. **Subjectivity in customized data**
   Though along with the real time data availability, the data is also available in customized form such as charts, diagram and other pictorial form in order to make a better presentation of data for use. But precaution and care needs to be taken as these data may be opinion based and subjective.

Basic Aspects of Stock Market Quotes/Information

What are Stock Quotes

You must have often seen a ticker on a business news channel on the TV or on the huge bill-board outside the Bombay Stock Exchange, constantly showing a bunch of letters and numbers in green or red lettering. These are stock quotes. The bunch of letters you see is a stock symbol, while the numbers that follow signify the stock price.

What are stock symbols?

A stock symbol is a unique code given to all companies listed on the exchange. Once you know the stock code or symbol of the company, you can easily obtain information about the company. This is important for investors who wish to conduct a financial analysis before purchasing a company's shares. For example, TCS stands for Tata Consultancy Services, while INFY stands for Infosys. Often, it is not possible to write the full name of a company. It would take up a lot of

space on the ticker board or stock table. In such a case, the stock symbol comes handy and it is just 3-4 letters. For this reason, stock symbols are also referred to as ticker symbols. So, when you are searching for a stock on Kotaksecurities.com or on the exchange's site, typing the stock symbol will directly lead you to the company's page, which will give you all possible details.

Where are they Available?
Stock quotes are available very easily. Some of most accessible avenues to get stock information are the internet and business news channels. Pink papers or business newspapers and magazines, journals also regularly publish a list of stock quotes, called the stock table.

Why should you read a Stock Quote?
When you invest in a stock, you need to know the stock price as well as its historical trends. This is imperative if you wish to invest in a valuable company at the right time. This will ensure that you not only get the stock right, but also the share price. Remember, if you wish to maximize your profits in the stock market, you need to buy at lows and sell at highs. So timing is of utmost importance. A stock quote gives you the information required to make this buying/selling decision.
So, you need to track stocks continuously for a period of time before making a buying or selling decision. Tracking stocks lets you gain from the best stock opportunities available in the market. It also helps you know monitor how the stocks in your portfolio are performing. No, it is not as complicated as it sounds. It is designed to empower you with all the tools you might require to invest wisely.

You have the Portfolio Tracker Section, which lets you regularly monitor your portfolio. You can also track other stocks you wish to purchase, while keeping pace with all market activities with our Research Section that empowers you with intensive market-related research reports.

How to read Stock Quotes?
The stock table – available in financial papers and online – contains the information of all stocks. It can be a little confusing to understand. It has the following elements:

Company name and symbol:
The stock table needs space to fit in details of as many shares as possible. There is thus a space crunch. For this reason, company symbols, and not names, are used. On the internet, though, company's names too are given. This helps you identify the stock.

High/low:
During market hours, live share prices keep changing as more trades are conducted. This is because buying makes the stock more valuable, while selling makes it less valuable. This in turn affects the share price. To give an investor a basis for comparison, the stock quote mentions the highest and lowest prices the stock hit in that day. If the share price is constantly rising, the 'high' would keep climbing. In the same way, the 'low' would keep falling in a down market. Once the market closes, the difference between the highest and the lowest prices gives an idea about the volatility in the stock's price.

Net change:
The closing price also helps calculate how much the stock's price has changed. This change is written in both percentage as well as absolute value format. It is calculated by subtracting today's

price from the previous closing price, and then dividing with the closing price to get the percentage change. A positive change indicates the stock price has increased from the previous day. When the net change is positive, the stock is written in green color, while red color is used to denote share price has fallen.

Dividend details:
Companies distribute a portion of their profits to shareholders as dividends. While an investor holds the share, dividends are the primary source of income. For long-term investors, this is of great importance. This is because higher dividends mean greater returns for the investor. For this reason, many stock quotes mention the dividend yield, which helps compare the dividend with the share price. The dividend yield is calculated by dividing the dividend per share with the stock price. Higher the dividend yield, greater is the investor's income through dividends.

Stock price:
This is the price an investor or trader pays to buy a single share of the company. This fluctuates constantly during market hours, and remains constant when markets are closed for trading. It reflects the value the market has allotted to the company.

Bid Price
The highest price a buyer is currently willing to pay for a stock.

Ask Price
Ask is the lowest price at which a seller is currently willing to sell the stock at. When placing a market order, you are buying or selling a stock at the best available price.

Close:
Stock prices stop fluctuating once the market is shut for trading. The 'close' or the 'closing price' thus reflects the last price at which the stock traded. During the market hours, it represents the previous day's closing price, again giving investor a benchmark to compare against. Since the newspaper is delivered in the morning, it reflects the price at which the stock closed the previous day.

52-week high/low:
This shows the highest and lowest stock price in one year or 52-weeks. This too helps the investor understand the stock's trading range over a broader period of time.

Charts
Stock charts come in a variety of formats and have a whole investing technique based around them. They all track pricing data, usually the OHLC (open, high, low close), but they can display this information in different styles (lines, bars, candlesticks), different date ranges (day, week, month, year, 5 years, 10 years) and other information like volume, moving averages and dozens of other indicators.

PE Ratio:
Some stock tables and quotes also mention the PE ratio. This is the amount an investor pays for each rupee the company earns. It is calculated by dividing the stock price with the company's earnings per share. This is important because stock price is a market-assigned value. It largely depends on market sentiment about the stock, and hence may not be in synchronization with the

share's internal value. The PE ratio, thus, helps give perspective about the share's value in comparison to the company's financial performance. A high PE ratio means the stock is costly, while a low PE ratio means the stock is cheaply available.

Beta

Beta is used to measure the volatility of a stock as compared to the market as a whole. A beta of 1 means the stock moves up or down more quickly than the market overall; a beta between 0 and 1 means the stock does not move as much as the market, and a negative beta means the stock moves in the opposite direction of the market

Volume:

If a company has a stipulated number of shares floated on the exchange, not all of them may be traded in a single day. It depends on demand for the stock. This is understood in the 'volume' section of the stock quote, which shows how many stocks changed hands. A higher trading volume is usually followed by a significant change in the stock price.

Reading the stock Quote Published in a Financial Paper

Any financial paper has stock quotes that will look something like the image below:

52W high	52W low	Stock	Ticker	Yield Div	Yield %	P/E	Vol 00s	High	Low	Close	Net chg
s45.39	19.75	ResMed	RMD			52.5	3831	42.00	39.51	41.50	-1.90
11.63	3.55	Revlon A	REV				162	6.09	5.90	6.09	+0.12
77.25	55.13	RioTinto	RTP	2.30	3.2		168	72.75	71.84	72.74	+0.03
31.31	16.63	RitchieBr	RBA			20.9	15	24.49	24.29	24.49	-0.01
8.44	1.75	RiteAid	RAD				31028	4.50	4.20	4.31	+0.21
s38.63	18.81	RobtHalf	RHI			26.5	6517	27.15	26.50	26.50	+0.14
51.25	27.69	Rockwell	ROK	1.02	2.1	14.5	6412	47.99	47.00	47.54	+0.24
Column 1	Column 2	Column 3	Column 4	Column 5	Column 6	Column 7	Column 8	Column 9	Column 10	Column 11	Column 12

Columns 1 & 2: 52-Week High and Low - These are the highest and lowest prices at which a stock has traded over the previous 52 weeks (one year). This typically does not include the previous day's trading.

Column 3: Company Name & Type of Stock - This column lists the name of the company. If there are no special symbols or letters following the name, it is common stock. Different symbols imply different classes of shares. For example, "pf" means the shares are preferred stock.

Column 4: Ticker Symbol - A *ticker symbol* is an arrangement of characters (usually letters) representing a particular security listed on an exchange or otherwise traded publicly. When a company issues securities to the public marketplace, it selects an available *ticker symbol* for its securities that investors use to place trade orders. This is the unique alphabetic name which identifies the stock. If you watch financial TV, you have seen the ticker tape move across the screen, quoting the latest prices alongside this symbol. If you are looking for stock quotes online,

you always search for a company by the ticker symbol. If you don't know what a particular company's ticker is? You can search for it online.

Column 5: Dividend per share - This indicates the annual dividend payment per share. If this space is blank, the company does not currently pay out dividends.

Column 6: Dividend Yield - The percentage return on the dividend, calculated as annual dividends per share divided by price per share.

Column 7: Price/Earnings Ratio - This is calculated by dividing the current stock price by earnings per share from the last four quarters.

Column 8: Trading Volume - This figure shows the total number of shares traded for the day, listed in hundreds. To get the actual number traded, add "00" to the end of the number listed.

Column 9 & 10: Day High and Low - This indicates the price range at which the stock has traded at throughout the day. In other words, these are the maximum and the minimum prices that people have paid for the stock.

Column 11: Close - The close is the last trading price recorded when the market closed on the day. If the closing price is up or down more than 5% than the previous day's close, the entire listing for that stock is bold-faced. Keep in mind, you are not guaranteed to get this price if you buy the stock the next day because the price is constantly changing (even after the exchange is closed for the day). The close is merely an indicator of past performance and except in extreme circumstances serves as a ballpark of what you should expect to pay.

Column 12: Net Change - This is the dollar value change in the stock price from the previous day's closing price. When you hear about a stock being "up for the day," it means the net change was positive.

The Bottom Line

Stock quotes consist of many data points. It's important to traders to understand the key data points such as bid, ask, high, low, open and close. Being able to analyze this pricing and trend data allows traders and investors to make better informed trading decisions.

The key is to not allow the extensive series of numbers discourage you when a quote shows information. Quotes are an excellent way to compare companies in industries that are alike. For some, these financial snapshots of numerical data for publicly traded companies can provide immediate perspective on whether or not a company is a worthwhile investment.

Some Basics about the stock market

What is a Stock Market?

The stock market is a system where shares of publicly-traded companies are issued, bought and sold. To some it is a place where people gamble. Actually, it is not a place of gambling at all. Why? Let’s say you put 100 on one roll of the dice. If you win, you win X. If you lose, you

lose the entire 100. When you invest in stocks, you will win X or lose Y. It's rare to lose it all, unless of course you invest in a company that collapses. You could say that the stock market is a group of people using their expertise against one another. This is also not correct. Stock market expertise comes when you acquire the knowledge of its working.

What Makes Stock Prices Go Up and Down?

There are many factors that determine whether stock prices rise or fall. These include the media, the opinions of well-known investors, natural disasters, political and social unrest, risk, supply and demand, and the lack of or abundance of suitable alternatives. The compilation of these factors, plus all relevant information that has been disseminated on the part of the company such as publication of financial statements, creates a certain type of sentiment (i.e. bullish and bearish) and a corresponding number of buyers and sellers. If there are more sellers than buyers, stock prices will tend to fall. Conversely, when there are more buyers than sellers, stock prices tend to rise.

Why is the Stock Market so Difficult to Predict?

Let's assume stock prices have been rising for several years. Investors realize that a correction will come and stock prices will come down. What we do not understand is when it will occur. Therefore, some investors will sit on the sidelines holding cash, waiting for the right time to get in. Those who are willing to assume the risk may jump in because the return on cash is so low and it hurts to earn zero while watching stocks move higher. This raises two key questions:

1. If you're on the sidelines, how will you know when to get in?
2. If you're already in, how will you know when to get out?

If the stock market was predictable, these questions could easily be answered. However, it is not. There are actually three issues an investor should consider:

1. To know as to which stock prices are fairly valued.
2. To know the event that will cause a downturn.
3. To understanding the human decision-making process.

Let's briefly look the answer of these issues:

Which stock is fairly valued?

The actual price of a stock is determined by market activity. When making the decision to buy or sell, the investor will often compare a stock's actual price to its fair value. For example, if a stock is trading at 300 per share and its fair value is 350, it may be worth purchasing. Conversely, if it trades at 300 but its fair value is 250, the stock would be considered overvalued and the investor would be wise to avoid it. What is a stock's fair value and how do you calculate it? Ideally, it would be based on some standardized formula. However, there are many ways to derive this figure. One method is to combine the value of a company's assets on its balance sheet, minus depreciation and liabilities. Another is to determine its intrinsic value, which is the net present value of a company's future earnings. We have briefly discussed two methods. There are a number of others. Because the methods yield a slightly different result, it's sometimes difficult to know if a stock is overvalued, undervalued, or fairly valued. And even if it is overvalued, that doesn't mean investors will suddenly sell and the price will fall. Actually, a

stock can remain overvalued for quite some time. This is also why it can be problematic to make buy/sell decisions based on where the price of the stock is in relation to some moving average.

Triggering Event
Knowing which event will cause a trend reversal is analogous to seeing around the corner of a solid brick building. There may be one or several factors along with the sentiments of traders working as a reversal of situation.

The Human Decision Process
This is the most interesting of the three. Inside every individual there is a logical and an emotional component. We may analyze a situation using our logical side but when it's time to act, we refer to our emotions. For example, when purchasing a car, we might research the engine, fuel efficiency, amenities, or other items. But when it's time to decide, we often ask other types of questions. Such as, how do I look in the driver's seat? Does the car match my image? When making investment decisions, since there is an investor on the other side ready to buy what you're selling or selling what you want to buy, you must be able to process the relevant data and make a good decision. However, it's impossible to know everything you would need to know and process it without any bias. For these and other reasons, we will make a sub-par decision at times. This will occur even with the most analytical individuals.

When is the Best Time to Buy and Sell?
The two most important decisions an investor will make are when to buy and when to sell. The best time to buy is when others are pessimistic. The best time to sell is when others are actively optimistic. When buying, remember that the prospect of a high return is greater if you buy after its price has fallen rather than after it has risen. But caution should be exercised. For example, after the stock of Company X declined by 30%, 40% or more, the first question to ask is why. Why did the stock fall as it did? Did other stocks in the same industry experience a decline? If so, was it as severe? Did the entire stock market fall? If the broader market or other stocks in the same industry/sector performed relatively well, there may be a problem specific to Company X. It's best to adopt a buy/sell discipline and adhere to it. Benjamin Graham, the father of value investing, once said, "The buyer of common stocks must assure himself that he is not making his purchase at a time when the general market level is a definitely high one, as judged by established standards of common-stock values."

How to Read Bond Information
You need to know how to read bonds in the language of corporate finance to understand their potential impact on your corporation or as an individual investor to understand the bond investment potential for your portfolio. Look in the finance portion of any newspaper and you'll see information about the bond market. This data about specific bonds is meant to help buyers and sellers make effective decisions regarding the potential to invest in bonds or issue their own.
The exact information provided depends a lot on the types of bonds being described. Following is a list of common information about bonds that may improve your awareness and make sure you know how to read bonds in the language of corporate finance:

Ask: The *ask* price is the price at which the seller is attempting to sell the bond.

Bid: The *bid* is the price at which the buyer is attempting to buy a particular bond.

Spread: The *spread* is the difference between ask and bid.

Coupon/Rate: The terms *coupon* and *rate* refer to the interest rate generated on a bond. This interest rate is expressed as a percentage with up to three decimal places.

Credit Quality Ratings: When bonds are issued, the issuers are asking others to loan them money through the purchase of the bond. Just as any individual getting a mortgage or credit card must undergo a credit assessment, so too must corporations issuing bonds. The *credit quality rating* on a bond is performed by a credit rating agency, and the rating is then provided to the public in order to help prospective buyers assess the risk of the issuing corporation defaulting. Standard & Poor's (S&P) and Moody's are the two primary rating agencies in USA. Each uses a slightly different rating system, but their purpose is generally the same.

Credit Rating of Bond Instrument by American Agencies

S&P	Moody's	Interpretation
AAA	Aaa	Highest rated; lowest risk
AA	Aa	Very good; low risk
A	A	Somewhat good; low risk
BBB	Baa	Moderately rated; low risk but susceptible to troubles; may not be able to withstand economic or market fluctuations
BB	Ba	Susceptible to troubles; stable only as long as the market or economy remains stable; junk
B	B	Moderately high risk; junk
CCC	Caa	High risk; junk
CC	Ca	Very high risk; junk
C	C	No interest income bonds
D	D	Already in default

Credit Rating of Bond Instrument by Indian agencies CRISIL and ICRA

CRISIL	ICRA	Interpretation
AAA	LAAA	Highest Safety
AA	LAA	High Safety
A	LA	Adequate Safety
BBB	LBBB	Moderate Safety
BB	LBB	Inadequate Safety
B	LB	High Risk
C	LC	Substantial Risk
D	LD	Default
NM	-	Not Meaningful

Face Value/Par Value: The *face value* or *par value* is the amount of the principal repayment on the bond. If this value isn't listed, you can pretty much assume that it's 1,000 per bond.

Nevertheless, before actually taking any action, be sure to confirm the value because variations do exist and range a great deal.

Issuer: The *issuer* is the organization that is issuing the bond.

Maturity/Maturity Date: The *maturity* or *maturity date* can be listed in one of two ways: either as duration of time (for example, one year, ten years, and so forth) or a date (for example, Nov. 2020; Feb. 15, 2025; and so on). In the case of the former, the bond matures in an exact duration of time after the purchase date. In the case of the later, the bond matures on the date listed.

Price: Where a lot of people start to get confused with bonds is when they start talking about price, yield, and the relationship between them. The reason for this is that *price* isn't just listed as the nominal face value of the bond; it's actually listed as a percentage of the face value. So, if a bond is listed at 100.00, it's selling at the exact face value of the bond. If the bond is selling below face value, say, at 99.95, then it's selling at 99.95 percent of the face value. If the price is 101.01, it's selling at 101.01 percent of the face value.
A bond that sells for under face value is selling at a discount, whereas a bond selling above face value is selling at a premium. At the end, the principal repayment is still going to be the face value of the bond, but the bond itself can sell for higher or lower than the principal repayment.

Price change: *Price change* refers only to the amount the price has changed since the last period, which can be anywhere from one day to one year, depending on where you're getting your information. It can be expressed in two ways:

- In nominal terms, the price change is expressed in terms of the dollar increase or decrease.
- In ratio terms, the price change is expressed as a percentage of the previously reported price.

Volume: This term describes the volume of a particular bond being exchanged. Rather than providing information about the value of any particular bond, the *volume* describes the total value of all bonds of a particular type being sold.
So if someone were to issue and successfully sell ten bonds worth 10 each, the volume would be 100 during that time period. In the next period, if only one person who bought that bond were to resell the bond, the volume would drop to 10.

Yield: *Yield* refers to the amount of returns that a bond generates at a given price. That's why yield is related to price — because the amount of returns on a particular bond that an investor generates depends on the relationship between price and yield.
If a one-year bond yields 100 per year and the market price of the bond was 100, thenthe yield is 0 or 0 percent. On the other hand, if the price was only 50, the yield is 50 or 100 percent.
Yield, also known as *current yield*, refers specifically to the annual amount of interest paid divided by the market price of the bond (which is then multiplied by 100 to make it a percentage). This annual yield differs from yield to maturity, which is the total amount of returns generated by holding the bond to maturity rather than over the course of a single year.

Yield change: This term refers only to the amount the yield has changed since the last period, which can be anywhere from one day to one year, depending on where you're getting your information. It can be expressed in two ways:

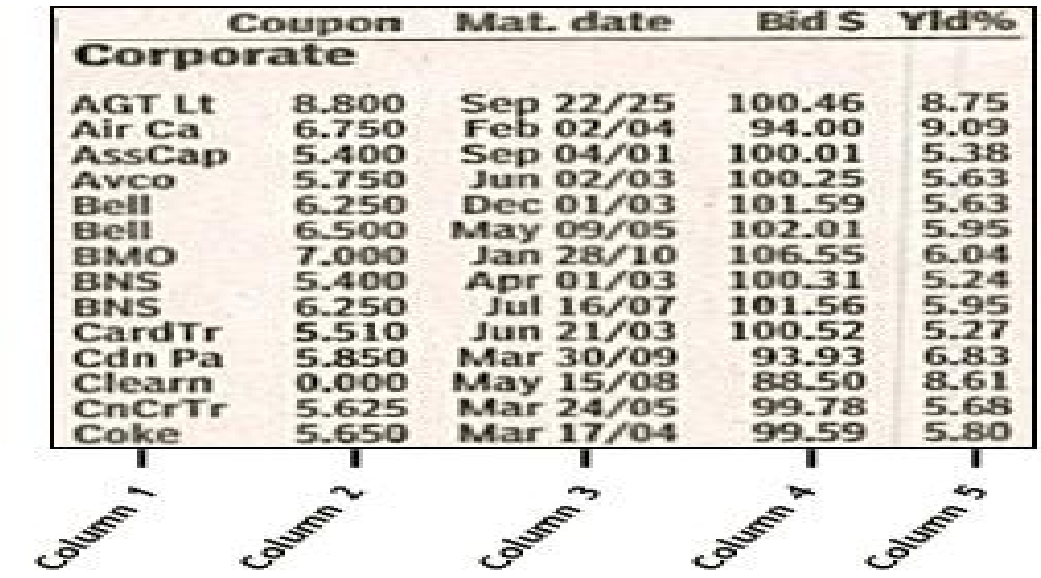
- In nominal terms, the yield change is expressed in terms of the dollar increase or decrease.
- In ratio terms, the yield change is expressed as a percentage of the previously reported price.

Yield to maturity: *Yield to maturity* (YTM) is the value of the returns on a bond if the bond is held until its maturity date, given the current price. Of course if the price is higher, the yield will be lower because the percentage returns on the investment will be a lower proportion of the price.

Conversely, the yield will be higher if the price is lower. YTM assumes not only that the bond is held to maturity but also that no coupons are collected, which allows all coupons to continue accruing interest until the maturity date.

Reading Bond quotes

Features of 7.75% Government of India Savings Bonds (www.basunivesh.com)	
Issuer	Government of India
Min Investment	Rs.1,000
Max Investment	No Limit
Interest	7.75%
Tenure	7 Yrs
Type of Bonds	Cumulative and Non-Cumulative
Nomination	Yes
Tax	Interest is taxable and also TDS is applicable
Eligible Investors	Individual and HUF



	Coupon	Mat. date	Bid $	Yld%
Corporate				
AGT Lt	8.800	Sep 22/25	100.46	8.75
Air Ca	6.750	Feb 02/04	94.00	9.09
AssCap	5.400	Sep 04/01	100.01	5.38
Avco	5.750	Jun 02/03	100.25	5.63
Bell	6.250	Dec 01/03	101.59	5.63
Bell	6.500	May 09/05	102.01	5.95
BMO	7.000	Jan 28/10	106.55	6.04
BNS	5.400	Apr 01/03	100.31	5.24
BNS	6.250	Jul 16/07	101.56	5.95
CardTr	5.510	Jun 21/03	100.52	5.27
Cdn Pa	5.850	Mar 30/09	93.93	6.83
Clearn	0.000	May 15/08	88.50	8.61
CnCrTr	5.625	Mar 24/05	99.78	5.68
Coke	5.650	Mar 17/04	99.59	5.80

Column 1: Issuer
This is the company, province (or state), or country that is issuing the bond.

Column 2: Coupon
The coupon refers to the fixed interest rate that the issuer pays to the lender.

Column 3: Maturity Date
This is the date on which the borrower will pay the investors their principal back. Typically only the last two digits of the year are quoted, 25 means 2025, 09 is 2009, etc.

Column 4: Bid Price
This is the price someone is willing to pay for the bond. It is quoted in relation to 100, no matter what the par value is. Think of the bid price as a percentage: a bond with a bid of 93 means it is trading at 93% of its par value.

Column 5: Yield
The yield indicates annual return until the bond matures. Usually this is the yield to maturity, not current yield. If the bond is callable it will have a "c--" where the "--" is the year the bond can be called. For example "c25" means the bond can be called as early as 2025.

Technical Analysis and Interpreting Stock Market Data

Technical analysis is all about interpreting stock price movement and trade volumes. Information about these is widely available. However, it needs to be converted into a form that can be easily understood and used for trading.
In technical analysis, this process begins with the construction of stock price charts. After this, you need to interpret these charts. You may use tools like momentum indicators, chart patterns and trend lines for this. We have taken a look at these tools in previous sections.
In this section, we will explore some chart patterns that are used for interpreting these charts.

Technical Analysis: Types of Charts

There are four primary types of charts used by investors and traders depending on the type of information they are seeking and their desired goals. These chart types include line charts, bar charts, candlestick charts, and point and figure charts. In the following sections, we will focus on the S&P 500 over the same period to illustrate the differences between the charts when the underlying data set is the same.

Line Charts
Line charts are the most basic type of chart because it represents only the closing prices over a set period. The line is formed by connecting the closing prices for each period over the timeframe. While this type of chart does not provide much insight into intraday price movements, many investors consider the closing price to be more important than the open, high, or low price within a given period. These charts also make it easier to spot trends since there is less ‘noise’ happening compared to other chart types.

(Figure 5.1 – Line Chart Example – Source: StockCharts.com)

Bar Charts

Bar charts expand upon the line chart by adding the open, high, low, and close – or the daily price range, in other words – to the mix. The chart is made up of a series of vertical lines that represent the price range for a given period with a horizontal dash on each side that represents the open and closing prices. The opening price is the horizontal dash on the left side of the horizontal line and the closing price is located on the right side of the line. If the opening price is lower than the closing price, the line is often shaded black to represent a rising period. The opposite is true for a falling period, which is represented by a red shade.

(Figure 5.2 – Bar Chart Example – Source: StockCharts.com)

Candlestick Charts

Candlestick charts originated in Japan over 300 years ago, but have since become extremely popular among traders and investors. Like a bar chart, candlestick charts have a thin vertical line showing the price range for a given period that's shaded different colors based on whether the stock ended higher or lower. The difference is a wider bar or rectangle that represents the difference between the opening and closing prices.

Falling periods will typically have a red or black candlestick body, while rising periods will have a white or clear candlestick body. Days where the open and closing prices are the same will not have any wide body or rectangle at all.

(Figure 5.3 – Candlestick Chart Example – Source: StockCharts.com)

Point and Figure Charts

Point and figure charts are not very well known or used by the average investor, but they have a long history of use dating back to the first technical traders. The chart reflects price movements without time or volume concerns, which helps remove noise – or insignificant price movements – that can distort a trader's view of the overall trend. These charts also try to eliminate the skewing effect that time has on chart analysis.

(Figure 5.4 – Point and Figure Chart Example – Source: StockCharts.com)

Point and figure charts are characterized by a series of Xs and Os. The Xs represent upward price trends and the Os represent downward price trends. There are also numbers and letters in the chart that represent months and given investors a rough idea of dates. Each box on the chart represents the price scale, which adjusts depending on the price of the stock: The higher the stock's price the more each box represents. On most charts, a box represents 1 point.
Another key point to remember is that point and figure charts have reversal criteria that must be set by the technical analyst – although it's usually set to three. The reversal criteria represents how much the price has to move away from the higher or low in the price to create a new trend, or in other words, how much the price has to move in order for a column of Xs to become a column of Os, or vice versa. When the price trend has moved from one trend to another, it shifts to the right, signaling a trend change.

Charts are the most fundamental aspect of technical analysis. It's important for traders to understand what's being shown on a chart and the information it provides. Now that we have a clear idea of how charts are constructed, we can move on to the different types of chart patterns.

Understanding Stock Chart-Patterns

The next logical step after knowing different types of technical charts is to understand the stock charts-patterns. In this segment, we will review some basic stock chart patterns that are used for stock chart analysis and drawing important conclusions. Chart patterns are divided into reversal patterns and continuation patterns. Note that these patterns can be used for all types of charts, except for point and figure charts.

Reversal patterns

Reversal patterns indicate that the present trend of price movements is going to reverse. In other words, if the price of a stock is currently increasing, it will start falling and if it is decreasing, it will start rising. There are two important reversal patterns:

Head and shoulders and inverse head and shoulders:
The head and shoulders pattern is created when three consecutive waves appear on a stock price chart. It has been illustrated below.

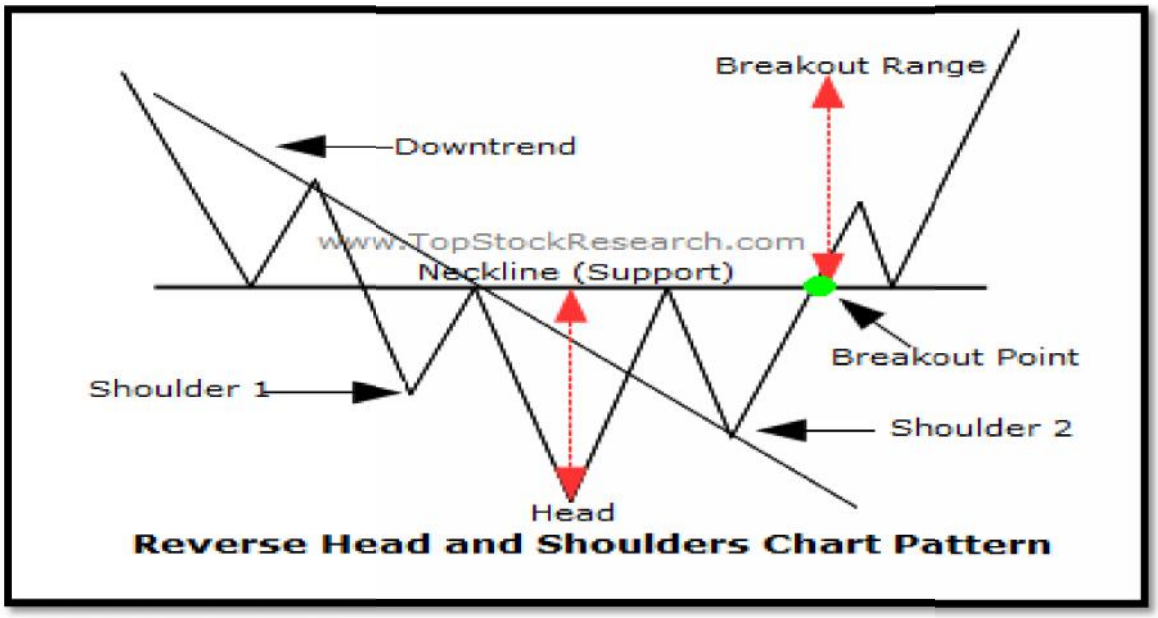
Look at how the middle wave has a higher peak than the other two. It is therefore called the head. The other two are known as the left and the right shoulder respectively. A head and shoulders pattern normally forms after a strong upward pattern. The peak of the first (left) shoulder is higher than that of the rally that preceded it. It is marked by very high market volumes. The fall that follows this is sharp and takes the price close to the point from where the shoulder began. It is marked by low volumes. The next move in the pattern is the creation of a head by another, bigger up-move. It is again marked by low volumes. This move is followed by another fall that takes the price back to where it rose from on the last two occasions. It is called the neckline. The third move is the creation of the left shoulder and a subsequent collapse. Thereon, the price doesn't rise and a long term price fall starts. In other words, the reversal sets

in.

(Figure 5.5: Head and Shoulders Pattern)

The price target for the reversal, i.e., the price at which the fall will end is given by the following formula**:**
Price target = Neckline price - (Price at the head – Neckline price)
OR
Price target = Neckline price – Price at the head + Neckline price

The head and shoulder patterns mark the reversal of an uptrend. However, being a reversal pattern, it should also mark the reversal of a downtrend, i.e. the end of a period of constantly falling prices. Such a reversal is indicated by the head and shoulders pattern when it is formed in an upside down fashion. It is then called the inverse head and shoulders pattern. It is exactly the image of a head and shoulders pattern in water. In this case, there are three inverse waves, with the middle one, having the lowest bottom. It is displayed below using an illustration. It announces the coming in a period of rising stock prices.



(Figure 5.6: Inverse Head and Shoulders Pattern)

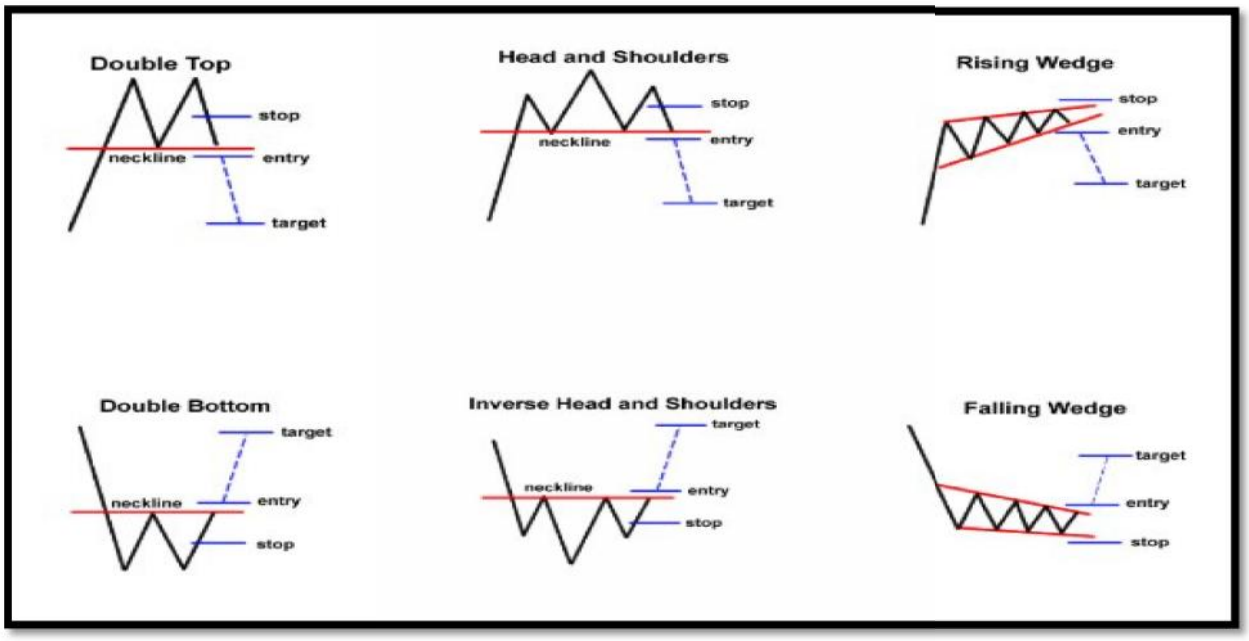
Double tops and double bottoms:

A double top also occurs after a significant uptrend. However, it contains two waves instead of three. Unlike head and shoulders, the price at both the peaks is the same. Larger the duration and the fall between the two waves, larger will be the fall when the trend eventually reverses. The formula for calculating target price in the case of double tops is the same as the one for head and shoulders. Following is a figure of the double tops pattern:

(Figure 5.7: Double Tops Pattern)

A version of the double top pattern is also used to mark the reversal of a down trend. It is called the double bottom pattern. It follows a spell of constantly falling prices and looks like a water-image of the double top pattern. Following is a figure of the double bottoms pattern:

(Figure 5.8: Double Bottoms Pattern)



(Figure 5.9: Various Forms of head and shoulders pattern)

Reversal patterns are those chart formations that signal that the ongoing trend is about to change course. If a reversal charts pattern forms during an uptrend, it hints that the trend will reverse and that the price will head down soon.

Triple Patterns
Another variant of the double tops and bottoms pattern is the triple tops and triple bottoms pattern. It looks similar to the head and shoulders pattern, but instead of shoulders, it just has three heads. In other words, the shape of the peak and all three waves is roughly the same.

Continuation patterns

Continuation patterns offer confirmation that the trend that was reflected by a stock chart before the emergence of the pattern will continue in future. So if the price was heading higher, it will continue to do so. If it was heading lower, again, it will continue to do so. Three continuation patterns are common:

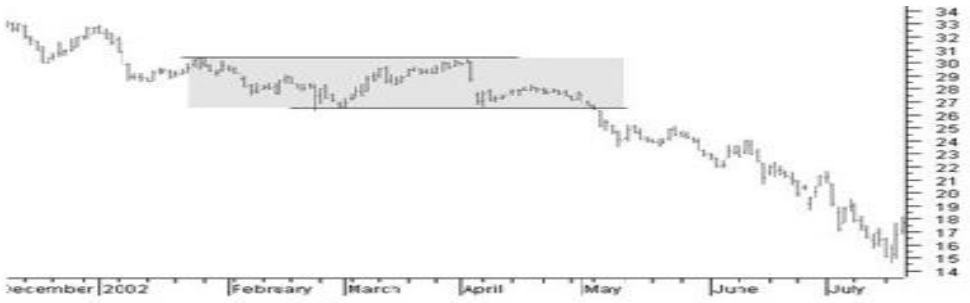
Triangle pattern
A triangle pattern is formed when the difference between the tops and bottoms on a stock chart is constantly reducing. As a result, if trend lines are inserted for tops and bottoms respectively, they will converge. This will give the pattern the appearance of a triangle. The difference between tops and bottoms reduces because of one of three reasons- bottoms are increasing while the tops are constant, tops are falling while the bottoms are constant and; both tops and bottoms are

converging. These patterns lead to ascending, descending and symmetrical triangles respectively. All these trends indicate the continuation of the current trend in a technical chart
In an ascending triangle, highs are constant, but the lows are increasing. Increasing lows means that investors are interested in buying the stock despite the high price. This means prices could move up further as more and more investors buy. The trend therefore, is the same as it was before the pattern emerged. Similarly, in a descending triangle, tops fall while bottoms are constant. This means investors are not interested in the stock despite its falling price. This indicates a further fall in prices as selling increases but there is little buying. In a symmetrical pattern, tops keep falling and bottoms keep increasing. This means existing sellers are keen on selling and existing buyers on buying more. Eventually, the two arrive at a consensus price. From thereon, prices continue heading in the same direction as before the emergence of the pattern. The figure of a symmetrical triangle is given below:

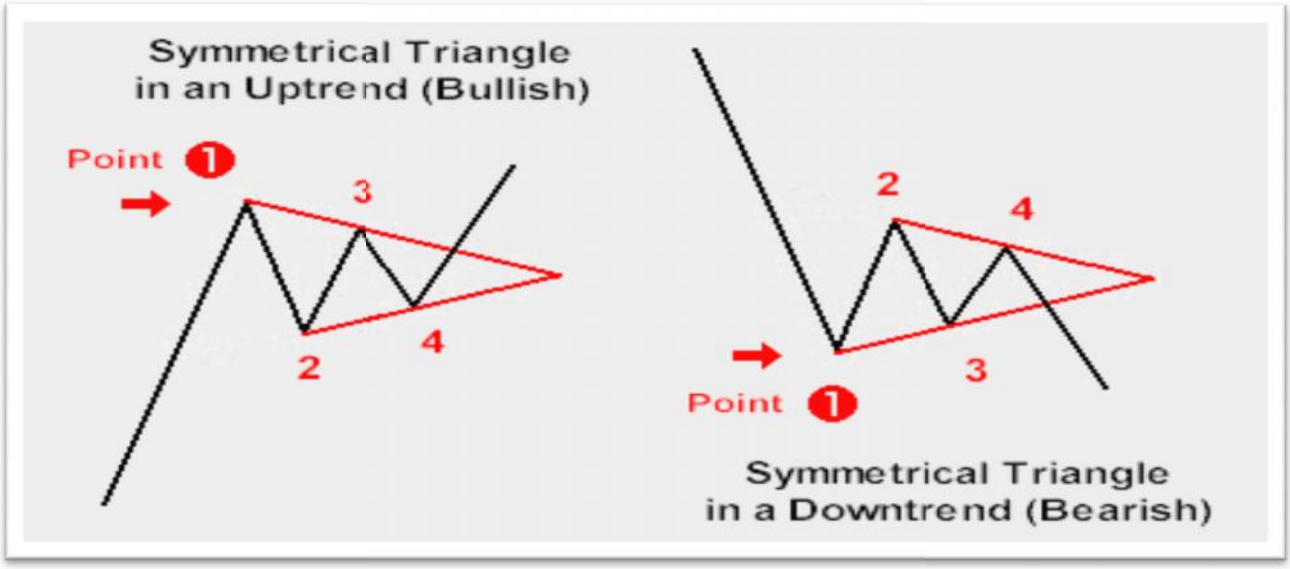
(Figure 5.10: Symmetrical Triangle Pattern)

Rectangle pattern

A rectangular pattern is formed when a stock's price has been moving within a range. Every up-move ends at the same top and every down-move ends at the same bottom. In other words, there is no change in the top and bottom prices for a long period of time. If you construct a channel, you will find that the resulting trend lines are parallel. Together, they give the appearance of a rectangle. This signifies that investors are constantly buying the stock at a specific price and then constantly selling it at another specific price. This leads to the formation of clear support and resistance levels. Since neither buyers nor sellers of the stock are able to make up their minds about its price, the stock chart will continue heading in the same direction as before. A rectangle that appears after a long bull run is called a bullish triangle. It indicates a continued upward momentum. A rectangle that appears after a long bear-run is called a bearish triangle. It indicates a continued downward momentum. The figure of such a triangle is given below:



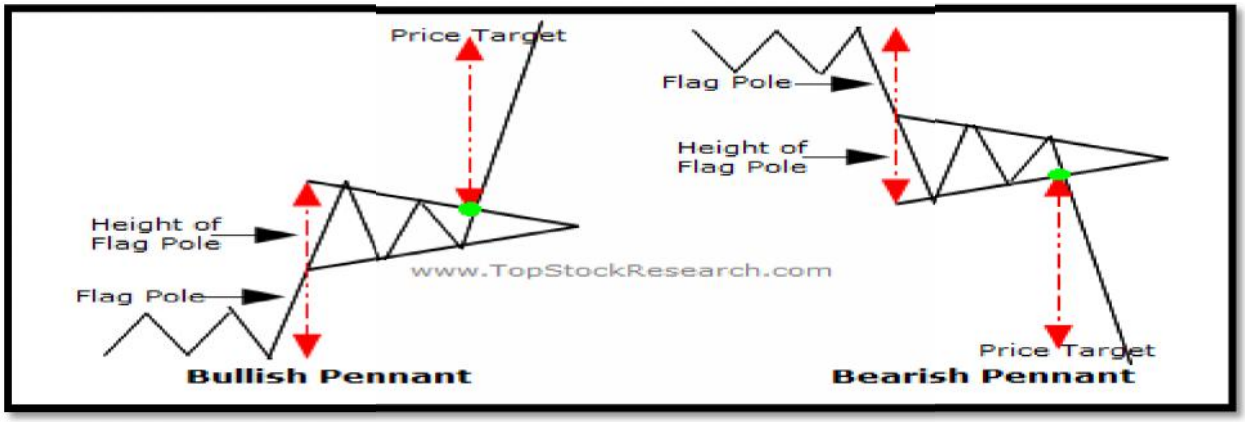
(Figure 5.11: Bearish Triangle Pattern)



(Figure 5.12: Bullish and Bearish Triangle Pattern)

Flags and pennants

Flags and pennants are similar to rectangles and triangles respectively. However, they are only noticeable over a shorter period of time. Rectangles and triangles are usually noticed in technical charts for long durations. They also bring about long-term price changes. Flags and pennants, in contrast, are noticed only in intraday charts, usually over a week to ten days period. A flag formation is yielded by two parallel trend lines, caused by tops and bottoms that are increasing/ decreasing at the same rate. A flag formation usually occurs in the opposite direction as the current chart trend. For example, if the price has increased in the lead up to the formation, the parallel flag formation will trend downwards. However, it will indicate a continuation of the upward pattern, just as before. If the price has trended downwards, the flag will be upward-bound. However, it will indicate a continuation of the downward trend in the intraday chart.



(Figure 5.13: Flags and Pennants)

Pennants are almost identical to triangles. The only difference is that triangles advise about the continuation of long term trends, while pennants advise about short term trends.

Continuation patterns, which include triangles, flags, pennants and rectangles, provide some logic on what the market may potentially do. Often these patterns are seen mid-trend and indicate a continuation of that trend, once the pattern is complete. In order for the trend to continue, the pattern must break out in the correct direction. While continuation patterns can help traders make trading decisions, the patterns are not always reliable. Potential problems include a reversal in a trend instead of a continuation and multiple false breakouts once the pattern is beginning to be established.

Some Selected Capital Market Theories

For the purpose of successfully and logically analysis and interpretation of financial market data, it is very necessary to understand the prevailing capital market environment and traders sentiments. We are discussing some selected capital market theories for this purpose. These capital market theories which we are discussing over here are Odd Lot Theory, Dow Theory and Efficient Market Hypotheses (EMH).

Odd Lot Theory

The odd lot theory is a technical analysis theory based on the assumption that the small individual investor trading odd lots is usually wrong. Therefore, if odd lot sales are up and small investors are selling a stock, it is probably a good time to buy. Vice versa, when odd lot buys are up the odd lot theory would indicate a good time to sell.

The odd lot theory focuses on following activities of individual investors trading in odd lots. The theory was broadly considered in the 1950s and 1960s. It has since become less popular, after individual investors began investing more heavily in mutual funds and data studies in the 1990s showed little effectiveness in the implementation of the theory.

Odd Lot Trades

Technical analysts have the ability to follow the volume of odd lot trades through technical analysis charting software programs. Odd lot trades are trade orders made by investors that include less than 100 shares in the transaction or are not a multiple of 100. These trade orders generally encompass individual investors which the theory believes are less educated and influential in the market overall.
Round lots are the opposite of odd lots. They begin at 100 shares and are divisible by 100. These trade orders are seen to be more compelling as an indicator as they are typically made by professional traders or institutional investors. The odd lot theory infers that these investors can be more important to follow for trade signals since they are typically more educated with greater amounts of available insight for investment decisions.

Odd Lot Theory Assumptions
The odd lot theory uses the analysis of odd lot trades as its basis. It primarily focuses on trade orders of less than 100 shares. Its premise is built on the notion that odd lot trades can be counter-intuitive to market trends. Therefore, believers in the odd lot theory seek to trade against the direction of odd lot trades. Thus, when odd lot traders are buying shares the theory would indicate a signal to sell shares and vice versa.
Analysis of the odd lot theory, culminating in the 1990s, generally disproved its effectiveness, discovering that individual investors are not generally prone to making bad investing decisions. Overall, the theory is no longer valid as many researchers and academics have stated that the individual investor, also known as the odd lotter, is generally not as uninformed or as incorrect as the theory has stated.
In the current day environment many individual investors have moved to investing more heavily in mutual funds which alleviates the volumes of odd lot trades. Previous followers of the theory have become more indifferent to odd lot trades with most technical analysts placing more emphasis on overall volume indicators such as the Positive and Negative Volume Indexes that can be used to help spotlight institutional trading sentiment.

Dow Theory
In the current day and age, a technical analyst can use different tools such as charts and graphs in order to analyze the market. His thought process and decision-making are based on different theories that have been developed over the years. But if you go back in the history of technical analysis, the foundation of this branch of stock investing can be traced back to Charles Dow and his writings. Dow Theory was first introduced by Charles Dow, who was the founder of Dow Jones and Company and the first editor of the Wall Street Journal. This theory is based on the many editorials he had written between the years of 1900-1902.

What is Dow Theory?
The theory explains how the stock market can be used by investors to understand the health of the business environment. It was the first theory to explain that the market moves in trends. And while a lot has changed in the stock markets over the years, the basic tenets of Dow Theory still hold water.

Six tenets of Dow Theory:
1. The market discover all news
2. The market has three trends

3. Trends have three phases
4. Indices confirm each other
5. Trends are confirmed by volume
6. Trends continue until definitive signals indicate otherwise

The market discounts all news

This principle explains that any information available in the market is already reflected in the price of stocks and indices. This includes all data such as earnings announcements by companies, rise (or fall) in inflation or even sentiments of investors. As a result, it is better to analyze price movements instead of studying earnings reports or balance sheets of companies.

The market has three trends

This theory was the first to propound that the market moves in trends. The trends are:

Primary trend is the major trend for the market. It indicates how the market moves in the long-term. A primary trend could span many years.

Secondary trends are considered to be corrections to a primary trend. This is like an opposite movement to the primary trend. For example, if the primary trend is upward (bullish), the secondary trend(s) is downward. These trends could last anywhere between a few weeks to a few months.

Minor trends are fluctuations to the market movement on a daily basis. These trends last for less than three weeks and go against the movement of the secondary trend. Some analysts consider minor trends to mirror market chatter.

Trends have three phases

The theory says that there are three phases to each primary trend: accumulation phase, public participation phase and panic phase. The beginning of a primary upward (or downward) trend in a bull (or bear) market is known as the accumulation phase. Here, traders enter the market to buy (or sell) stocks against common market opinions.

In the public participation phase, more investors enter the market as business conditions improve and positive sentiments become evident. This results in higher (or lower) prices in the market.

The panic phase is marked by excessive buying by investors. This could result in great speculation. At this stage, it is ideal for investors to book profits and exit.

(Figure 5.14: Three Trends of Dow Theory)

Indices confirm each other

A trend in the market cannot be verified by a single index. All indices should reflect the same opinion. For example, in case of a bullish trend in India, the Nifty, Sensex, Nifty Midcap, Nifty Small-cap and other indices should move in the upward direction. Similarly, for a bearish trend, all indices should move in a downward direction.

Trends are confirmed by volume

The trend in the market should be supported by trading volumes. For instance, in an upward trend, the volume rises with increase in price and falls with decrease in price. And in a downward trend, the volume increases with fall in price and decreases with price rise.

Trends continue until definitive signals indicate otherwise

The theory says that market trends exist despite any noise in the market. That is, during an upward trend, a temporary trend reversal is possible but the market continues to move in the upward direction. In addition, the status quo remains until a clear reversal happens in the market.

Even though it is more than a hundred years old, the Dow Theory is still relevant in the current trading market. This is because by understanding Dow Theory, traders can benefit from spotting and exploiting trends in the market.

Random Walk Theory

The Random Walk Theory or Hypothesis is a mathematical model of the stock market. Proponents of the theory believe that the prices of securities in the stock market evolve according to a random walk.
A "random walk" is a statistical phenomenon where a variable follows no discernible trend and moves seemingly at random. The random walk theory as applied to trading, most clearly laid out by Burton Malkiel, an economics professor at Princeton University, posits that the price of securities moves randomly (hence the name of the theory), and that, therefore, any attempt to predict future price movement, either through fundamental or technical analysis, is futile.
The implication for traders is that it is impossible to outperform the overall market average other than by sheer chance. Those who subscribe to the random walk theory recommend using a "buy and hold" strategy, investing in a selection of stocks that represent the overall market.

(Figure 5.15: Random movement of stock)

Basic Assumptions of the Random Walk Theory

1. The Random Walk Theory assumes that the price of each security in the stock market follow a random walk.
2. The Random Walk Theory also assumes that the movement in the price of one security is independent of the movement in the price of another security.

Efficient Market Hypothesis

The Efficient Markets Hypothesis is an investment theory primarily derived from concepts attributed to Eugene Fama's research work as detailed in his 1970 book, "Efficient Capital Markets: A Review of Theory and Empirical Work". Fama put forth the basic idea that it is virtually impossible to consistently "beat the market" – to make investment returns that outperform the overall market average as reflected by major stock indexes such as the S&P 500 Index. According to Fama's theory, while an investor might get lucky and buy a stock that brings him huge short-term profits, over the long term he cannot realistically hope to achieve a return on investment that is substantially higher than the market average.

Fama's investment theory – which carries essentially the same implication for investors as the Random Walk Theory – is based on a number of assumptions about securities markets and how they function. These assumptions are given below:

1. Free availability of all the relevant information
Efficient markets hypothesis believe that all information relevant to stock prices is freely and widely available and universally shared among all investors.

2. Large number of buyers and sellers
As there are always a large number of both buyers and sellers in the market, price movements always occur efficiently (i.e., in a timely, up-to-date manner). Thus, stocks are always trading at their current fair market value.

3. Stock prices should reflect all available information
All the information which are available in the market, are fully incorporated and reflected in the securities market price.

4. Absence of transaction cost
It is assumed that the securities are freely transacted without any transaction cost charged from the buyers or sellers. So any number of transactions can take place without a burden of transferability cost of securities.

The major conclusion of the theory is that since stocks ***always trade at their fair market value***, then it is virtually impossible to either buy undervalued stocks at a bargain or sell overvalued stocks for extra profits. Neither expert stock analysis nor carefully implemented market timing strategies can hope to average doing any better than the performance of the overall market. If that's true, then the only way investors can generate superior returns is by taking on much greater risk.

Three Forms of Market Efficiency
There are three variations of the hypothesis – the weak, semi-strong, and strong forms – which represent three different assumed levels of market efficiency.

Weak Form Efficient Markets Hypothesis
The weak form of the EMH assumes that the prices of securities reflect all available public market information but may not reflect new information that is not yet publicly available. It additionally assumes that past information regarding price, volume, and returns is independent of future prices. It implies that technical trading strategies cannot provide consistent excess returns because past price performance can't predict future price action that will be based on new information. This form of the EMH, while it discounts technical analysis, leaves open the possibility that superior fundamental analysis may provide a means of outperforming the overall market average return on investment.

Semi-strong Form Efficient Markets Hypothesis
The semi-strong form of the theory dismisses the usefulness of both technical and fundamental analysis. The semi-strong form of the EMH incorporates the weak form assumptions and expands on this by assuming that prices adjust quickly to any new public information that becomes available, therefore rendering fundamental analysis incapable of having any predictive power about future price movements.

Strong Form Efficient Markets Hypothesis

The strong form of the EMH holds that prices always reflect the entirety of both public and private information. This includes all publicly available information, both historical and new, or current, as well as insider information. Even information not publicly available to investors, such as private information known only to a company's CEO, is assumed to be always already factored into the company's current stock price. So according the strong form of the EMH, not even insider knowledge can give investors a predictive edge that will enable them to consistently generate returns that outperform the overall market average.

Different forms of market efficiency: Distinction

Basis of difference	Weak form of efficiency	Semi-strong form of efficiency	Strong form of efficiency
1. Information incorporated in securities	Only the past price and volume information	Only the past and present price and volume information	All the information be it past, present (public) information or insider (private) price and volume information
2. Possibility for investors to outperform	High	Low	Not possible
3. Behavior of stock prices	Random	As per intrinsic value	Fair pricing

Arguments for and against the Efficient Markets Hypothesis

Supporters and opponents of the efficient markets hypothesis can both make a case to support their views. Supporters of the EMH often argue their case based either on the basic logic of the theory, or on a number of studies that have been done seem to support it. A long-term study by Morningstar found that, over a 10-year span of time, the only types of actively managed funds that were able to outperform index funds even *half* of the time were U.S. small growth funds and emerging markets funds. Other studies have revealed that less than one in four of even the best-performing active fund managers prove capable of outperforming index funds on a consistent basis.

Note that such data calls into question the whole investment advisory business model that has investment companies paying out huge amounts of money to top fund managers, based on the belief that those money managers will be able to generate returns well above the average overall market return.

Opponents of the efficient markets hypothesis tout the simple fact that there are traders and investors – people such as John Templeton, Peter Lynch, and Paul Tudor Jones – who do consistently, year in and year out, generate returns on investment that dwarf the performance of the overall market. According to the EMH, that should be impossible other than by blind luck. But blind luck can't explain the *same* people beating the market by a wide margin, over and over again, over a long span of time. Further, those who argue that the EMH theory is not a valid one point out that there are indeed times when excessive optimism or pessimism in the markets drives prices to trade at excessively high or low prices, clearly showing that securities, in fact, do *not* always trade at their fair market value.

Impact of the Efficient Markets Hypothesis

The significant rise in the popularity of index funds that track major market indexes – both mutual funds and ETFs -is due at least in part to widespread popular acceptance of the efficient markets hypothesis. Investors who subscribe to the EMH are more inclined to invest in passive index funds that are designed to mirror the market's overall performance and less inclined to be willing to pay high fees for expert fund management when they don't expect even the best of fund managers to significantly outperform average market returns.

On the other hand, because research in support of the EMH has shown just how rare money managers who can consistently outperform the market are, the few individuals who *have* developed such a skill are ever more sought after and respected.

Limitations of Financial Market data based and Technical Analysis

Technical analysis based on financial market data is an important approach of security valuation, as it helps to identify the timing of buy and sell securities. It is based on variety of tools, techniques and trends. Technical analysis is based financial market data relating to past price and volume data analysis. However, it suffers from following limitations:

1. Requirement of interpretational skills

Various charts and patterns of technical analysis require careful interpretation by skilled analysts. Hence technical tools and indicators may not be used widely by common investors.

2. Subjective analysis and behavioral biases

Technical analysts are subject to many behavioral biases while interpreting various chart patterns and predicting future stock prices based on the analysis of past price data. Some of these behavioral biases are over-confidence, preconceived ideas, and inclinations towards some specific methods or toots and so on.

3. Late response to a chart pattern

Once a chart pattern is detected, it needs to be acted upon immediately. Hence the technical analysts must be a quick identifier of a chart pattern to make gains out of it. In practice, such promptness is hardly observed.

4. Short term perspective

The perspective of a chartist is short term and hence long term predictions are generally not based on technical tools and techniques. For long term analysis, fundamental analysis is a better approach to find out the real value of securities.

Fundamental or Technical Analysis: which one is superior?

There has always been a debate between fundamental and technical analysts as to which one is superior. It must be noted that fundamental and technical analysis are not mutually exclusive. They are complementary. Technical analysis complements fundamental analysis to identify the right time to buy and sell security which is suggested by fundamental analysis. While fundamental analysis calculates the intrinsic value of a share using economy, industry and company framework, technical analysis predicts future price movements using past price and volume data. The perspective in case of fundamental analysis is long term and in case of

technical analysis, short term. Therefore, fundamental analysis is considered superior to technical analysis. Technical analysis on the other hand is preferred by short term traders and speculators.

Summary

Financial Market data refers to the live streaming of trade-related data. Financial market data is price and trade-related data for a financial instrument reported by a trading venue such as a stock exchange. Market data allows traders and investors to know the latest price and see historical trends for instruments so that traders and investors can make informed decisions.

The pros of market data are that the market data are real time, data are used as a strategy for future trade and customized data are available for different use. The cons of data are risk of latency and subjectivity in data. Basic aspects of stock market information are stock market quotes and symbol. When you read stock market information, you are able to make informed investment decision.

Stock market information include company name and symbol, stock prices, their high-lows, opening-closing prices, ask bid, P/E ratio, dividends, charts, diagrams, beta, trading volume etc. All these financial information help an investor reading and interpreting a stock quote published in a news paper.

Some basics of stock market focus to what is stock market, what makes stock prices go up and down, why is stock market prices are so difficult to predict, which stock is fairly value, what is triggering event and what is the human nature of decision making and what is the best time to buy and sell a stock. Reading a bond information include ask, bid, yield, coupon rate, spread, credit rating symbols etc.

Technical analysis and stock market data mainly focus on market information relating to demand and supply of securities. A number of charts are prepared depicting various types of trends of securities movements. These charts show various types of trends such as upward, downward, and reversal movements. There are four primary types of charts used by investors and traders depending on the type of information they are seeking and their desired goals. These chart types include line charts, bar charts, candlestick charts, and point and figure charts. The next logical step after knowing different types of technical charts is to understand the stock charts-patterns. Chart patterns are divided into reversal patterns and continuation patterns. Note that these patterns can be used for all types of charts, except for point and figure charts.

In order to understand well the financial market data and information, it is necessary to understand the back drop of capital market in terms of some important capital market theories for investors. For this purpose three theories have been elaborate namely Odd Lot Theory, Dow Theory and Efficient Market Hypotheses.

Financial market data based on technical analysis has certain limitations such as requirement of interpretational skill of analysts, subjective and behavioral biases, late response to chart pattern by technical analyst and short term perspective. For the question of superiority of fundamental or technical analysis, we found that though both fundamental and technical analysis are complementary to each other and both are required simultaneously but fundamental analysis is superior for its long term perspective.

Objective Type Questions

1. Which of the following terms represent an upper price limit for a stock, based on the quantity of willing sellers:
    a. Resistance

b. Channel
c. Trend line
d. Support

2. Which of the following do technical analysts believe is a lower bound on a stock's price?
    a. Shadow
    b. Trend line
    c. Resistance
    d. Support

3. Which of the following is a sentiment indicator?
    a. Trend line
    b. Relative strength ratio
    c. Advance decline ratio
    d. Odd lot trading

4. Which of the following is a breadth indicator?
    a. Put/call ratio
    b. Advance decline line
    c. Channel
    d. Odd-lot trading

5. The number o f stocks hitting new 52-week highs is a/an:
    a. Breadth indicator
    b. Intermediate indicator
    c. Sentiment indicator
    d. Primary trend indicator

6. Which of the following charts include daily high price, low price, opening price, and closing price?
    a. Bar chart
    b. Moving average chart
    c. Point and figure chart
    d. Candlestick chart

7. Which of the following contains a real body?
    a. Bar chart
    b. Moving average chart
    c. Candlestick chart
    d. Point and figure chart

8. Which of the following charts has time horizon?
    a. Moving average chart
    b. Candlestick chart
    c. Bar chart

d. Point and figure chart

9. Which of the following charts is formed using only closing data?
    a. Bar chart
    b. Point and figure chart
    c. Advance decline chart
    d. Candlestick chart
10. Which of the following is most closely associated with the terms “primary trend”, “intermediary trend”, and “short term trend”?
    a. Bar chart
    b. Dow theory
    c. Candlestick chart
    d. Channel

11. When technical analysts say that a stock has “good relative strength”, they mean that
    a. The ratio of the price of the stock to a market index has trended upward.
    b. The recent trading volume in the stock has exceeded the normal trading volume.
    c. The total return on the stock has exceeded the total return on the other stocks in the same industry.
    d. The stock has outperformed well compared with other stocks in the same risk category as measured by beta.

12. One of the most popular tools used by technical analysts is:
    a. P/E ratio
    b. Book to market value ratio
    c. Growth rate of dividend
    d. Moving averages

13. A bar chart is used to illustrate:
    a. Reversal in the direction of stock prices without consideration of time
    b. High, low, opening and closing price on a daily basis
    c. The candlestick line
    d. Advances and declines of stock prices

14. According to the Dow Theory, daily fluctuations and secondary movements in the stock market are used to identify the:
    a. Seasonal pattern
    b. Intermediate trend
    c. Primary trend
    d. Moving average

15. When odd selling exceeds odd lot buying this is considered a:
    a. Bearish signal
    b. Bullish signal
    c. Neutral signal
    d. Signal to switch from stock to bond

16. Which of the following is not a part of the bar chart?
    a. Closing price
    b. Opening price
    c. High price
    d. Low price

17. The central issue of efficient markets concerns
    a. Regulation
    b. Information
    c. Participants
    d. Structure

18. An efficient market hypothesis states all public information which is reflected in current market prices is classified as
    a. weak form efficiency
    b. strong form efficiency
    c. market efficiency
    d. semi strong form efficiency

19. An efficient market hypothesis state in which all public or private information is reflected in current market prices is classified as
    a. market efficiency
    b. semi strong efficiency
    c. weak form efficiency
    d. strong form efficiency

20. Present value of dividends which is expected to be provided in future is classified as an
    a. intrinsic value of stock
    b. extrinsic value of stock
    c. intrinsic bonds
    d. extrinsic bonds
21. Which version of the Efficient Market Hypotheses states that only past price information is reflected in prices
    a. weak form
    b. strong form
    c. semi-strong form
    d. none of the above

22. What is the Head and Shoulders pattern?
    a. A frequent pattern in the academic publication process.
    b. A synonym for a Random Walk process.
    c. A pattern from the technical analysis of stock prices predicting a sharp price downturn, which does however not prove to be a powerful, short-run opportunity.

d. It is the pattern that is the core of the most profitable stock market investment strategy, which has consistently outperformed every other investment strategy during the past 50 years.

23. The highest price someone is willing to pay for a bond is known as:
    a. Ask price
    b. Bid price
    c. Spread
    d. Ticker

24. The difference between ask price and bid price is known as:
    a. Ask price
    b. Bid price
    c. Spread
    d. Ticker

25. An arrangement of characters representing a particular security listed on an exchange is known as
    a. Ticker
    b. Spread
    c. Quote
    d. Chart

26. _____is used to measure the volatility of a stock as compared to the market as a whole.
    a. Beta
    b. Bar Chart
    c. Quote
    d. Spread

27. It is impossible to consistently outperform in the market when the market is:
    a. inefficient
    b. Semi-efficient
    c. Efficient
    d. In any form

28. An investor can outperform in semi-efficient form of market on the basis of
    a. Publicly available information
    b. Private/insider information
    c. Announcement of dividend by the company
    d. Past and present public information

29. According to random walk theory stock prices
    a. Can be predicted with the help of fundamental analysis
    b. Can be predicted with the help of technical analysis
    c. Can be predicted with help of both fundamental and technical analysis
    d. Cannot be predicted

30. The head and shoulders pattern is created when _____ consecutive waves appear on a stock price chart.
    a. Two
    b. Three
    c. Four
    d. Five

[Answers :*1-a,2-d,3-d,4-b,5-a,6-d,7-c,8-d,9-b,10-b,11-a,12-d,13-b,14-c,15-b,16-b,17-b,18-d,19-d,20-a, 21-a, 22-c, 23-b, 24-c, 25-a, 26-a,27-c, 28-b,29-d, 30-b]*

True/False
Indicate the following statements True (T) or False (F):

1. Market data is generated in real time to make quick decisions.
2. Ask is the highest price a buyer is currently willing to pay for a stock.
3. There is no difference between fundamental and technical analysis.
4. Technical analysis used past price data to predict future prices.
5. When stock price approaches support price, it is a good opportunity to buy.
6. Fundamental analysis finds out intrinsic value of security.
7. Technical analysis has long term perspective and fundamental analysis has short term.
8. The head and shoulder patterns mark the reversal of an uptrend.
9. It is impossible to predict the stock prices in efficient form of market.
10. Security prices reflect only past and present information in the weak form of market efficiency.
11. Stock prices according to random walk theory can be predicted.
12. Technical analysis is used primarily by short traders and speculators in stock market.

*[**Answers**: 1-T, 2-F, 3-F, 4-T, 5-T, 6-T, 7-F, 8-T, 9-T, 10-F, 11-F, 12-T]*