Chapter 3

THEORETICAL FRAMEWORK OF CANDLESTICK CHARTS

After the extensive review of literature, this chapter gives the conceptual and background of the technicalities of the study. The study covers about 12 important candle patterns, 4 chart patterns and moving averages. It has further explained in a detailed way about candlestick charts. The details of the same is shown as follows.

- Candlestick Charts
- Construction of candlestick charts and its types
- Candlestick Positioning
- Candlestick Patterns
- Chart Patterns
- Volume of the Stock
- Price Objective
3.1 Candlestick Charting

Candlestick charting allows a quick read on changes in supply and demand. By analyzing the daily price movements of an issue using candlesticks, a trader is able to confirm evidence of trend reversal very early on. Candlesticks draw an inductive, as opposed to deductive, view of markets the facts are presented graphically, one has only to read and understand.

The candlestick graph is comprised of both black and white candle bodies, often with "wicks" at both ends. A single white candlestick body highlights that the opening price was at the bottom of the body of the candlestick. In case where the candle has wicks on either end, the bottom wick symbolizes the low prices traded during that period and the top wick points to the high of the period. Whenever a candle body is black, the opening price is the top of the candle body and the closing price is the bottom of the candle body. Again, if there are wicks, they signify intra-day highs and lows. Candlestick charts are considered to be much more visually attractive than a standard two dimensional bar chart. Similar to a standard bar chart, there are four elements needed to construct a candlestick chart, the Open, High, Low and Closing price for a given time period. Given below are the illustrations of candlesticks and a definition for each candlestick component.

![Figure 3.1 Candlestick component](image-url)
1. The body of the candlestick chart is known as the real body, and represents the range between the open and closing prices.

2. A black or filled-in body highlights that the close during that time period was lower than the open (usually considered Bearish). When the body is open or white, it shows the close was higher than the open (usually considered Bullish).

3. The slim straight line above and/or below the real body is known as the upper/lower shadow, representing the high/low price limits for the period.

Below is a list of several individual candlestick terms. It is very important to realize that many formations occur within the context of prior candlesticks.

**Long Days**

![Figure 3.2 Long Days](image)

The Long Days point towards the huge difference between the open price and the close price for a trading day. The shadow lines are a lot shorter than the real body.

**Short Days**

![Figure 3.3 Short Days](image)

The Short Days indicate little difference between the opening price and the closing price for a trading day. The body and the shadow lines are both very short.
**Doji:** Doji lines are considered to be patterns with the same open and close price. There are three special types of Doji lines.

![Doji Patterns](image)

**Long-legged Doji:** Comprised of long upper and lower shadows with the price in the middle of the range. It indicates indecision.

**Dragonfly Doji:** Comprised of a long lower shadow and no upper shadow. It is a fine indication of bearish trend reversal.

**Gravestone Doji:** Comprised of a long upper shadow and no lower shadow. It is a perfect indication of bullish trend reversal.

### 3.2 Construction of Candlesticks: Reading the Chart

Like bar charts, Japanese candlestick charts use vertical lines to display price action for a particular period. Even to the casual user, a candlestick chart gives a clear indication of the intra-day price action. Please note that the following points are illustrated in figure 3.5. Because of the emphasis placed on the Open-Close range, candlesticks are drawn with a "rectangle" around the Open-Close range. If the close is higher than the open, then the rectangle is left "Empty" which appears as a ‘White candle’. If the close is below the open, then the rectangle is drawn in, or "Filled" which appears as a ‘Black candle’. And, if the Open and Close are "Very Close" or
"Equal", a small rectangle (or horizontal line) is drawn creating a "Doji" shaped candle. A candlestick chart represents a sequence of prices plotted over a specific timeframe. In statistical terms, these charts are referred to as time series plots.

On the chart, the y-axis (vertical axis) represents the price scale and the x-axis (horizontal axis) represents the time scale. Prices are plotted from left to right across the x-axis with the most recent plot being the furthest right.

Like a bar chart, the daily candlestick line contains the open, high, low, and close for the market for a specific day. The broad part of the candlestick line in the exhibit is called the real body as has been mentioned previously also. The thin lines above and below the real body are the shadows. These are the session’s price extremes. The shadow above the real body is called the upper shadow and the peak of the upper shadow is the high of the session. The shadow under the real body is the lower shadow and the bottom of the lower shadow is the session’s low.

Candle lines can depict information for all time frames: intraday, daily, weekly, monthly, quarterly or annual data. The less compressed the data is, the more detail is displayed. For example, a 60-minute candle line uses the open, high, low and close for the day. On a weekly chart the candle would be based on Monday’s open, the high and low of the week and Friday’s close.
One very apparent indicator is the colour of the candlestick’s real body and the length of the candle lines real body and shadow. It conveys an instant x-ray into who’s winning the battle between the bulls and the bears. For instance, when the real body is black, this means that the stock closed below its opening price. This gives a reader an instant picture of a positive or a negative closing. Those who stare at charts for hours at a time can find candlesticks are not only easy on the eyes, but also that they convey strong visual signals sometimes missed on bar charts.

3.3 Candlestick Charting Types

Candlesticks contain the same data as a normal bar chart, but in addition they highlight the relationship between opening and closing prices. It depicts the battle between Bulls (buyers) and Bears (sellers) over a given period of time. The narrow stick represents the range of prices traded during the period (high to low) while the broad mid-section represents the opening and closing prices for the period. The interpretation of candlestick charts is based primarily on patterns. The patterns are classified as Bullish, Bearish, trend reversal and neutral patterns. The bottom (intra-session low) of the candlestick represents a win for the Bears and the top (intra-session high) a win for the Bulls. The closer the close is to the high, the closer the Bulls are to winning the session. The closer the close is to the low, the closer the Bears are to winning. A candlestick chart is a good representation of a stock’s momentum. On a candlestick chart, one can easily see the succession of up days, down days and sudden changes in the stock pattern. The advantage of candlesticks is the ability to highlight trend weakness and reversal signals that may not be apparent on a normal bar chart.
3.4 Candlestick Positioning

**Long Black Line – Long White Line:** The long white line is a sign that buyers are firmly in control - a bullish symbol. A long black line shows that sellers are in control - definitely bearish sign.

![Candlestick Symbols](image)

**Figure 3.6 Candlestick Symbols**

**Doji:** The Doji occurs when the open and close occur at the same price. This signals indecision when open and close occur in the middle of the trading range. The dragonfly is a Doji where the open and close occur near the top of the trading range. This signals a reversal after a downtrend; control has shifted from sellers to buyers.

![Candlestick Doji](image)

**Figure 3.7 Doji**

**Star Position:** A candlestick that gaps away from the previous candlestick is said to be in star position. The first candlestick usually has a large real body, but not always, and the second candlestick in star position has a small real body. Depending on the previous candlestick, the star position candlestick gaps up or down and appears isolated from previous price action. The two candlesticks can be any combination of white and black.

Doji, hammers, shooting stars and spinning tops have small real bodies and can form in the star position. Later we will examine 2 and 3 candlestick patterns that utilize the star position.
**Harami Position:** A candlestick that forms within the real body of the previous candlestick is in Harami position. Harami means ‘pregnant’ in Japanese and the second candlestick is nestled inside the first. The first candlestick usually has a large real body and the second a smaller real body than the first. The shadows (high/low) of the second candlestick do not have to be contained within the first, though it's preferable if they are. Doji and spinning tops have small real bodies and can form in the Harami position as well.

**Reversal Signals:** The hammer signals a reversal after a downtrend control has shifted from sellers to buyers. The shadow should be at least twice the height of the body. If it occurs after an uptrend, it is called a 'Hanging man' and is a bearish signal. A gravestone is identified by open and close near the bottom of the trading range. This is really the converse of a hammer and signals a reversal when it occurs after an up-trend.
**Dark Cloud Pattern**: A Dark Cloud pattern encountered after an Uptrend is a reversal signal warning of "rainy days" ahead.

![Dark Cloud Pattern Diagram](image)

**Figure 3.11 Dark Cloud Pattern**

**Piercing Line**: The Piercing Line is the opposite of the Dark Cloud pattern and is a reversal signal if it appears after a downtrend.

![Piercing Line Diagram](image)

**Figure 3.12 Piercing Line**

**Engulfing Patterns**: Engulfing patterns consist of two bodies without any shadows and where the second body 'engulfs' the first. These signals are only significant after a prolonged trend.

![Engulfing Patterns Diagram](image)

**Figure 3.13 Engulfing Patterns**

**Stars**: Stars are made up of a long body followed by a short body with a much smaller shadow (trading range). The bodies of the two must not overlap, though the shadows may.

![Star Formation Diagram](image)

**Figure 3.14 Star Formation**
**Morning Star:** The Morning Star pattern is a bullish reversal signal after a downtrend. The first bar has a long black body, the second body gaps down from the first (the shadows may still overlap) and may be filled or hollow. This is followed by a long white body, which closes in the top half of the body of the first bar.

![Figure 3.15 Morning Star](image)

**Evening Star Pattern:** The Evening star pattern is opposite to Morning Star and is a reversal signal at the end of an up-trend. Evening stars is a three-candle pattern that comes after a rally. The first candle has a tall white real body, the second has a small real body that gaps higher to form a star, and the third is a black candle that closes well into the first session’s white real body.

![Figure 3.16 Evening Star](image)

**Doji Star:** A Doji Star formation is weaker than the Morning or Evening Star - the Doji represents indecision. With a Shooting Star the body on the second bar must be near the low - at the bottom end of the trading range. The upper shadow must be longer. This is also a weaker reversal signal after a trend. Both of these patterns require confirmation - by the next bar closing below halfway on the first bar.

![Figure 3.17 Doji Star](image)
3.5 Detecting the 'Right' Candlestick Signals

As one learns to interpret the different candlestick patterns, one should always keep in mind the following rules to assist in detecting patterns and determining possible actions to be taken. There are three simple rules to interpreting candlestick patterns.

**Size:** Larger candles play an important role when identifying patterns. They represent accumulation or distribution within the market or stock. When you begin to see an increase in size of the candles, the trend is accelerating and accumulation is occurring. When you begin to see a decrease in the size of the candles, the trend is decelerating and distribution is occurring.

**Shape:** The shape of the candlestick, or pattern, determines the type of pattern generated the possible trading signal, and the potential direction of trend. Shape and size work hand-in-hand. A very small Engulfing Bullish pattern would indicate the potential for a market rally, yet the small size indicates that the trend has not yet begun to accelerate.

**Location:** The location of a candlestick pattern will assist in determining the possible trading signal. A Shooting Star found after a defined up trend strongly indicates a potential bearish correction or top. A Piercing Line found after a defined down trend indicates a potential for a bullish reversal. Either of these two patterns found within a consolidated sideways trend, do not indicate as strong a potential for a trend reversal, and one should wait for confirmation of the candlestick pattern before taking action.

**Visual Insight:** When a chartist looks at a bar graph, accumulations of highs and lows are often seen as key market levels. Breaking through these points signals important changes in the expected direction of prices. Candlestick real bodies, however, may turn out to be better for this task. Much like highs and lows are on bar
charts, an accumulation of real-body highs or lows at a given level is significant. Here’s an example of real body resistance levels. The real-body high from the first day provides the initial resistance point. Note how the second day's action takes prices above that resistance, but the market ends lower on the day. The situation is similar after the sixth day. Twice the market rallies above real-body resistance, only to fall back. Real-body support levels work in a similar, but opposite manner. The last candlestick is what would be considered a breakout if it were able to close above the real body resistance of the fourth and sixth day. So in effect, there must be a real-body penetration of the support or resistance point before one considers the action to be significant.

Reversals: Candle charts reveal reversal signals earlier. Where on a bar chart it may take weeks, with a candle chart a reversal can be confirmed in one or two sessions. Candlestick charts are an effective way of visualizing price movements. There are two basic candlesticks:

**Bullish Candle:** When the close is higher than the open (usually green or white)

**Bearish Candle:** When the close is lower than the open (usually red or black)
There are three main parts to a candlestick:

**Upper Shadow**: The vertical line between the high of the day and the close (Bullish candle) or open (Bearish candle).

**Real Body**: The difference between the open and close; coloured portion of the candlestick.

**Lower Shadow**: The vertical line between the low of the day and the open (bullish candle) or close (bearish candle).

### 3.6 Candlestick Patterns

The power of Candlestick Charts is with multiple candlesticks forming reversal and continuation patterns. There are many candle pattern in the technical analysis. This study covers detailed explanation of some of important candlestick patterns are given below:
3.6.1 Doji Candlestick Pattern: The Doji is a powerful Candlestick formation, signifying indecision between bulls and bears. A Doji is quite often found at the bottom and top of trends and thus is considered as a sign of possible reversal of price direction, but the Doji can be viewed as a continuation pattern as well.

A Doji is formed when the opening price and the closing price are equal. After the open, bulls push prices higher only for prices to be rejected and pushed lower by the bears. However, bears are unable to keep prices lower, and bulls then push prices back to the opening price. The chart shows two examples of Doji's:

In a Doji pattern, the market explores its options both upward and downward, but cannot commit either way. It is important to emphasize that the Doji pattern does not mean reversal, it means indecision. Doji's are often found during periods of resting after a significant move higher or lower; the market, after resting, then continues on its way.
3.6.2 Dragonfly Doji Pattern: The Dragonfly Doji is a significant Bullish Reversal candlestick pattern that mainly occurs at the bottom of downtrends.

![Dragonfly Doji Diagram]

The Dragonfly Doji is created when the open, high, and close are the same or about the same price (Where the open, high, and close are exactly the same price is quite rare). The most important part of the Dragonfly Doji is the long lower shadow. Figure 3.23 illustrates a Dragonfly Doji occurring at the bottom of a downtrend:

![Figure 3.23 Example of Dragonfly Doji Pattern]

Figure 3.23 which is a day, so much support and subsequent buying pressure, that prices were able to close the day approximately where they started the day. The Dragonfly Doji is an extremely helpful Candlestick pattern to help traders visually see where support and demand is located. After a downtrend, the Dragonfly Doji can signal to traders that the downtrend could be over and that short positions should probably be covered.
3.6.3 Gravestone Doji: The Gravestone Doji is a significant bearish reversal candlestick pattern that mainly occurs at the top of up trends.

The Gravestone Doji is created when the open, low, and close are the same or about the same. The most important part of the Gravestone Doji is the long upper shadow. The long upper shadow is generally interpreted by technicians as meaning that the market is testing to find where supply and potential resistance is located. The construction of the Gravestone Doji pattern occurs when bulls are able to press prices upward. Figure 3.25 shows the example of Gravestone Doji.

The Gravestone Doji is an extremely helpful Candlestick reversal pattern to help traders visually see where resistance and supply is likely located. After an uptrend, the Gravestone Doji can signal to traders that the uptrend could be over and that long positions should probably be exited.
3.6.4 **Dark Cloud Cover**: Dark Cloud Cover is a bearish candlestick reversal pattern, similar to the Bearish Engulfing Pattern. There are two components of a Dark Cloud Cover formation:

A Dark Cloud Cover Pattern occurs when a bearish candle on Day 2 closes below the middle of Day 1's candle. In addition, price gaps up on Day 2 only to fill the gap and close significantly into the gains made by Day 1's bullish candlestick. The rejection of the gap up is a bearish sign in and of itself, but the retracement into the gains of the previous day's gains adds even more bearish sentiment.

Traders usually suggest not selling exactly when one sees the Dark Cloud Cover Pattern (Day 1 & Day 2) until other confirming signals are given such as a break of an upward trend line or other technical indicators. One reason for waiting for confirmation is that the Dark Cloud Cover Pattern is a bearish pattern, but not as bearish as it could be: parts of the gains from Day 1 have still been preserved.
3.6.5 Bearish Engulfing Pattern: The Bearish Engulfing Candlestick Pattern is a bearish reversal pattern, usually occurring at the top of an uptrend. The pattern consists of two Candlesticks:

![Bearish Engulfing Pattern](image1)

Figure 3.28

Generally, the Bullish candle real body of Day 1 is contained within the real body of the bearish candle of Day 2. There is an incredible change of sentiment from the bullish gap up at the open, to the large bearish real body candle that closed at the lows of the day. Bears have successfully overtaken bulls for the day and possibly for the next few periods.

![Bearish Engulfing Pattern](image2)

Figure 3.29 Example of Bearish Engulfing Pattern

Methodologies for selling 1) Sell at the close of Day 2 an even stronger indication to sell is given when there is a substantial increase in volume 2) Sell on the day after the Bearish Engulfing Pattern occurs; by waiting until the next day to sell 3) Usually trader's wait for other signals, such as a price break below the upward support line before entering a sell order.

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3.6.6 Bullish Engulfing Pattern: The Bullish Engulfing Candlestick Pattern is a Bullish reversal pattern, usually occurring at the bottom of a downtrend.

The Bearish candle real body of Day 1 is usually contained within the real body of the bullish candle of Day 2. The power of the Bullish Engulfing Pattern comes from the incredible change of sentiment from a bearish gap down in the morning, to a large Bullish real body candle that closes at the highs of the day. Bears have overstayed their welcome and bulls have taken control of the market.

There are three main times to buy using 1) Buy at the close of Day 2 when prices rallied upwards from the gap down in the morning. 2) Buy on the day after the Bullish Engulfing Pattern occurs; by waiting until the next day to buy. 3) After a trader sees the Bullish Engulfing Pattern, the trader would wait for another signal, mainly a price break above the downward resistance line before entering a buy order.
3.6.7 **Hammer Pattern:** The Hammer candlestick formation is a significant Bullish reversal candlestick pattern that mainly occurs at the bottom of downtrends.

![Hammer Pattern Diagram](image)

**Figure 3.32 Hammer Pattern**

The Hammer formation is created when the open, high, and close are roughly the same price. Also, there is a long lower shadow, twice the length as the real body. When the high and the close are the same, a Bullish Hammer candlestick is formed and it is considered a stronger formation because the bulls were able to reject the bears completely plus the bulls were able to push price even more past the opening price.

![Hammer Example Chart](image)

**Figure 3.33 Example of Hammer**

The Hammer is an extremely helpful candlestick pattern to help traders visually see where support and demand is located. After a downtrend, the Hammer can signal to traders that the downtrend could be over and that short positions should probably be covered. However, other indicators should be used in conjunction with the Hammer candlestick pattern to determine buy signals.
3.6.8 **Hanging Man Pattern:** The Hanging Man candlestick formation, as one could predict from the name, is a bearish sign. This pattern occurs mainly at the top of up trends and is a warning of a potential reversal downward. It is important to emphasize that the Hanging Man pattern is a warning of potential price change, not a signal, in and of itself, to go short.

![Figure 3.34](image-url)  

The Hanging Man formation, just like the Hammer, is created when the open, high, and close are roughly the same price. Also, there is a long lower shadow, which should be at least twice the length of the real body.

![Figure 3.35 Example Hanging Man Pattern](image-url)  

The bears' excursion downward was halted and prices ended the day slightly above the close. It is important to repeat, that the Hanging Man formation is not the sign to go short; other indicators such as a trend line break or confirmation candle should be used to generate sell signals.
3.6.9 Harami Pattern: The Harami (meaning "pregnant" in Japanese) Candlestick Pattern is a reversal pattern. The pattern consists of two Candlesticks:

![Harami Pattern Diagram](image)

**Figure 3.36 Harami Pattern**

A Bearish Harami occurs when there is a large Bullish green candle on Day 1 followed by a smaller Bearish or Bullish candle on Day 2. The most important aspect of the bearish Harami is that prices gapped down on Day 2 and were unable to move higher back to the close of Day 1. Bullish Harami is opposite to the Bearish Harami in formation.

![Harami Example Diagram](image)

**Figure 3.37 Example of Harami Pattern**

A buy signal could be triggered when the day after the Bullish Harami occurred, price rose higher, closing above the downward resistance trend line. A Bullish Harami pattern and a trend line break is a potent combination resulting in a strong buy signal. The second Harami pattern shows Bearish reversal Harami. The first candle was a long Bullish green candle. On the second candle, the market gapped down at the open.
3.6.10 **Inverted Hammer:** The Inverted Hammer candlestick formation occurs mainly at the bottom of downtrends and is a warning of a potential reversal upward.

![Inverted Hammer Diagram](image)

**Figure 3.38 Inverted Hammer**

After a long downtrend, the formation of an Inverted Hammer is Bullish because prices hesitated their move downward by increasing significantly during the day. Nevertheless, sellers came back into the stock, future, or currency and pushed prices back near the open, but the fact that prices were able to increase significantly shows that bulls are testing the power of the bears. The next day after the Inverted Hammer pattern is what gives traders an idea as to whether or not prices will go higher or lower.

![Example of Inverted Hammer](image)

**Figure 3.39 Example of Inverted Hammer**

In Figure 3.39, the market began the day by gapping down. Prices moved higher, until resistance and supply was found at the high of the day. The bulls’ excursion upward was halted and prices ended the day below the open. It is important to repeat, that the Inverted Hammer formation is not the signal to go long.
3.6.11 **Shooting Star Pattern:** The Shooting Star candlestick formation is a significant Bearish reversal candlestick pattern that mainly occurs at the top of up trends.

![Shooting Star Pattern Diagram](image)

The Shooting formation is created when the open, low, and close are roughly the same price. Also, there is a long upper shadow. When the low and the close are the same, a bearish Shooting Star candlestick is formed and it is considered a stronger formation because the bears were able to reject the bulls completely plus the bears were able to push prices even more by closing below the opening price.

![Example of Shooting Star Pattern](image)

There was so much resistance and subsequent selling pressure, that prices were able to close the day significantly lower than the open, a very bearish sign. The Shooting Star is an extremely helpful candlestick pattern to help traders visually see where resistance and supply is located. After an uptrend, the Shooting Star pattern can signal to traders that the uptrend could be over and that long positions should probably be reduced or completely exited.
3.6.12 Piercing Line Pattern: The Piercing Pattern is a bullish candlestick reversal pattern, there are two components of a Piercing Pattern formation:

![Figure 3.42 Piercing Pattern](image)

A Piercing Pattern occurs when a bullish candle on Day 2 closes above the middle of Day 1's bearish candle. Moreover, price gaps down on Day 2 only for the gap to be filled and closes significantly into the losses made previously in Day 1's bearish candlestick. The rejection of the gap up by the bulls is a major bullish sign.

![Figure 3.43 Example of Piercing Pattern](image)

The Piercing Pattern means that bulls were unable to completely reverse the losses of Day 1, more bullish movement should be expected before an outright buy signal is given. Also, more volume than usual on the bullish advance on Day 2 is a stronger indicator that bulls have taken charge and that the prior downtrend is likely ending. A more bullish reversal pattern is the Bullish Engulfing Pattern that completely reverses the losses of Day 1 and adds new gains and the bearish equivalent of the Piercing Pattern is the Dark Cloud Cover Pattern.
3.7 Chart Patterns

A chart pattern is a distinct formation on a stock chart that creates a trading signal, or a sign of future price movements. Chartists use these patterns to identify current trends and trend reversals and to trigger buy and sell signals.

Technical analysis have three assumptions, the third of which was that in technical analysis, history repeats itself. The theory behind chart patterns is based on this assumption. The idea is that certain patterns are seen many times, and that these patterns signal a certain high probability move in a stock. Based on the historic trend of a chart pattern setting up a certain price movement, chartists look for these patterns to identify trading opportunities. While there are general ideas and components to every chart pattern, there is no chart pattern that will tell you with 100% certainty where a security is headed. This creates some leeway and debate as to what a good pattern looks like, and is a major reason why charting is often seen as more of an art than a science.

There are two types of patterns within this area of technical analysis, reversal and continuation. A reversal pattern signals that a prior trend will reverse upon completion of the pattern. A continuation pattern, on the other hand, signals that a trend will continue once the pattern is complete. These patterns can be found over charts of any timeframe.
3.7.1 Head and Shoulders Pattern

The head-and-shoulders pattern is one of the most popular and reliable chart patterns in technical analysis. And as one might imagine from the name, the pattern looks like a head with two shoulders. Head and shoulders is a reversal pattern that, when formed, signals the security is likely to move against the previous trend.

![Figure 3.44](image)

This pattern has four main steps for it to complete itself and signal the reversal. The first step is the formation of the left shoulder, which is formed when the security reaches a new high and retraces to a new low. The second step is the formation of the head, which occurs when the security reaches a higher high, then retraces back near the low formed in the left shoulder. The third step is the formation of the right shoulder, which is formed with a high that is lower than the high formed in the head but is again followed by a retracement back to the low of the left shoulder. The pattern is complete once the price falls below the neckline, which is a support line formed at the level of the lows reached at each of the three retracements mentioned above.
3.7.2 Inverted Head and Shoulders Patterns

The inverted head-and-shoulders pattern is the exact opposite of the head-and-shoulders, as it signals that the security is set to make an upward move. Often coming at the end of a downtrend, the inverted head and shoulders is considered to be a reversal pattern, as the security typically heads higher after the completion of the pattern.

![Inverted Head and Shoulders Pattern Diagram](image)

Figure 3.45

Again, there are four steps to this pattern, starting with the formation of the left shoulder, which occurs when the price falls to a new low and rallies to a high. The formation of the head, which is the second step, occurs when the price moves to a low that is below the previous low, followed by a return to the previous high. This move back to the previous high creates the neckline for this chart pattern. The third step is the formation of the right shoulder, which sees a sell-off, but to a low that is higher than the previous one, followed by a return to the neckline. The pattern is complete when the price breaks above the neckline.
3.7.3 The Breaking of the Neckline and the Potential Return Move

As seen from the above, the head-and-shoulders pattern is complete when the neckline is broken; the trend is then considered reversed, and the security should be heading in a new direction. The point of breakout is when most traders following the pattern would enter the security. However, the security will not always just continue in the direction suggested by the pattern after the breakout. For this reason it's important to be aware of what is known as a "throwback" move. This situation occurs when the price breaks through the neckline, setting a new high or low (depending on the pattern), followed by a retreat back to the neckline.

This move back to the neckline is considered to be a test of the pattern and the newly reversed support or resistance. Remember that when a trend shifts (or a reversal pattern is confirmed), what was once support now become resistance, and vice versa. In the case of an inverted head-and-shoulders pattern (as shown in the chart above), the neckline represented a level of resistance for the security before it broke out. Upon the security moving above the neckline to confirm the pattern, the restrictive neckline becomes support for any move back up.
While it can be alarming to see a security move in the opposite direction of the trend suggested by the pattern, it isn't all that bad. The reason being that the successful test of this new level of support or resistance helps to strengthen the pattern and its suggested new direction. So, it's important to wait for the pattern to test out and not sell out too quickly - before the pattern makes its bigger moves.

### 3.8 Volume

In technical analysis and chart-pattern analysis, volume plays an important role as it is used as a secondary indicator. Volume indicates activity and money movement. When volume is high, there is a lot of activity and money changing hands - making it an important indicator to follow.

For the head-and-shoulders pattern, volume is used mainly at the point of breakout to help confirm the pattern. At this point, it's important that the breakout happens on a large-volume move. For a Head & Shoulders, when the price breaks below the neckline (in a downward direction), it's best when this occurs during a large volume increase, which signals heavy selling. This strongly indicates that the underlying supply and demand in the market is moving in the same direction the chart pattern is predicting.

Volume can also be used as a secondary indicator during the formation of the pattern, well before the breakout, to gain an idea of the pattern's strength.

For head-and-shoulders, the left shoulder should show heavy volume as it hits its new peak. Low volume should take the left shoulder down to the neckline. The run towards the peak in the head should be on lighter volume compared to the peak formed in the left shoulder.
This should be a warning, as volume should move with trends - not against them. The peak formed in the right shoulder should be seen with even lighter volume than in either the head or the left shoulder. And again, the volume should be high when the neckline is broken, which is by far the most important area to watch in terms of volume. If the volume is lighter on the neckline break, the chances of the price moving back to the neckline after breaking is greater than if the neckline break was accompanied by large volume. This interaction of volume and price movement in forming the reversal signal is not set in stone. However, it is the general tendency in the chart pattern.

3.9 Slope of the Neckline

Another key factor in the head-and-shoulders pattern is the formation of the neckline. The reason being that the neckline acts as support or resistance during the formation of the pattern, along with being the entry point at which the pattern confirms itself. In most of the above examples, the neckline is flat, but this need not be the case for the pattern to provide a potential trade. In most cases, the neckline will in fact be slanted either up or down. In general, technically strong head-and-shoulders should have a flat or slightly upward-trending neckline. For a inverted head-and-shoulders, it should be flat or slightly downward.
3.10 Price Objective

An important, but often overlooked, factor in technical analysis and chart patterns is the calculation of price objectives. This is a measure of where the price is considered to be headed, based on a confirmed pattern. While the price's direction is already known, based on the signal, what needs to be calculated is the projected price movement. This is done so that targets can be set, protective stops can be instituted and the worth of a trade can be evaluated.

Figure 3.47 Head and Shoulders

This is measured based on the height of the chart pattern, which is essentially the distance in price between the peak of the head and the neckline. For example, let's say that in Head & Shoulders, the peak of the head is formed at Rs.50 and the neckline was established at Rs. 40 a difference is of Rs 10.

The price objective is calculated by subtracting the price at which the pattern breaks the neckline (Rs.40) by the difference between the head and the neckline (Rs.10). Based on this example, the price objective is Rs 30 (Rs 40 - Rs 10).

This price objective is not an absolute and is used as a guideline to the attractiveness of a trade. The larger the difference between the objective and the price at the neckline, the more worth the trade has, as it will yield greater returns.
3.11 Triangles

Triangles are some of the most well known chart patterns used in technical analysis. The three types of triangles, which vary in construct and implication, are the symmetrical triangle, ascending and descending triangle.

![Figure 3.48 Triangles](image)

The symmetrical triangle in Figure 3.48 is a pattern in which two trend lines converge toward each other. This pattern is neutral in that a breakout to the upside or downside is a confirmation of a trend in that direction. In an ascending triangle, the upper trend line is flat, while the bottom trend line is upward sloping. This is generally seen as a bearish pattern where chartists look for a downside breakout.

3.12 Flag and Pennant: These two short-term chart patterns are continuation patterns that are formed when there is a sharp price movement followed by a generally sideways price movement. This pattern is then completed upon another sharp price movement in the same direction as the move that started the trend. The patterns are generally thought to last from one to three weeks.

![Figure 3.49 Flag and Pennant](image)
As you can see in Figure 3.49, there is little difference between a pennant and a flag. The main difference between these price movements can be seen in the middle section of the chart pattern. In a pennant, the middle section is characterized by converging trend lines, much like what is seen in a symmetrical triangle. The middle section on the flag pattern, on the other hand, shows a channel pattern, with no convergence between the trend lines. In both cases, the trend is expected to continue when the price moves above the upper trend line.

### 3.13 Wedge

The wedge chart pattern can be either a continuation or reversal pattern. It is similar to a symmetrical triangle except that the wedge pattern slants in an upward or downward direction, while the symmetrical triangle generally shows a sideways movement. The other difference is that wedges tend to form over longer periods, usually between three and six months.

![Falling Wedge](image)

**Figure 3.50 Wedge**

The fact that wedges are classified as both continuation and reversal patterns can make reading signals confusing. However, at the most basic level, a falling wedge is bullish and a rising wedge is bearish. In Figure 3.50, we have a falling wedge in which two trend lines are converging in a downward direction. If the price was to rise above the upper trend line, it would form a continuation pattern, while a move below the lower trend line would signal a reversal pattern.
Conclusion:

This chapter provided in detail introduction about the theoretical framework of candlestick charts and construction of Candle Patterns, Chart Patterns, establishing Moving Averages in Charts and Volumes of the equity traded on daily basis with various examples.