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Glossary of Technical Analysis Terms

Our *Glossary of Technical Analysis Terms* describes and illustrates some of the basic tenets of technical analysis. Many of these tenets are incorporated in the methodology that we use to analyze financial markets. As such, the Glossary is meant to serve as a handy reference guide for clients that can be kept in order to clarify the definition(s) of the terminology and technical concepts that we use in our research reports.

"It follows then that if everything that affects market price is ultimately reflected in market price, then the study of that market price is all that is necessary."

"One of the great strengths of technical analysis is its adaptability to virtually any trading medium and time dimension."

John J. Murphy in *Technical Analysis of the Futures Markets*, pp. 3, 7, New York Institute of Finance, c.1986.

Source: Tradermade International Ltd.

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Introduction

Although there are many approaches utilized to forecast individual asset prices in financial markets, fundamental and technical analysis are two disciplines among the most commonly used.

In this publication, we seek to provide staff and clients alike with a glossary of technical terms that are often used in our reports. Each term is accompanied by a brief definition, along with an associated chart to depict the term.

The glossary is meant to serve as a quick reference guide for readers when they require clarification of a term.

The Basic Tenets

Technical analysis is best defined as the use of charts in order to study market price activity. The ultimate objective is to use this information in order to attempt to forecast future price trends. See Table 3 for a discussion of professional designations for technicians.

Key tenets that underpin the technical approach include:

- **Market prices move in trends**
- **Market action reflects all known information that is available**
- **The past predictive value of price patterns that reflect the bullish or bearish psychology of the marketplace are assumed to apply in the future.**

Technicals Versus Fundamentals

There are often many instances when technicals are compared and contrasted with the fundamentals. Table 1 provides a brief comparative synopsis of the two disciplines.

We must also point out that neither discipline is correct at forecasting price moves 100% of the time. Table 2 addresses the pros and cons of technical analysis in this regard.

While both approaches are often used to some degree by market participants, they tend to differ at the beginning of major market moves because market prices tend to lead the known fundamentals. Even for those who tend to rely on fundamental analysis to make their trading decisions, the technicals are often employed as an **executional tool** to highlight key support and resistance levels and to establish risk/reward parameters for proposed trading strategies.

1. Comparison of Technical Versus Fundamental Analysis

Technical Analysis:
1) The study of price activity in an attempt to predict *trends*.
2) Instruments in an *uptrend* are candidates to be purchased; instruments in a *downtrend* are candidates to be sold.
3) The technician studies the anticipated *effect* of price movements.
4) Attempts to measure the projected *effects* of price moves.
Fundamental Analysis:
1) The study of supply and demand in order to determine *intrinsic value*.
2) Instruments that are below intrinsic value are deemed *undervalued* and are candidates to be purchased; instruments that are above intrinsic value are deemed *overvalued* and are candidates to be sold.
3) The fundamentalist studies the *cause* of price movements.
4) Attempts to ascertain *why* prices have moved.

Source: Technical Analysis of the Futures Markets; RBC Capital Markets

2. Technical Analysis: Pros and Cons

Pros:
• Can be applied to all instruments that are traded.
• Applicable to any time horizon (short, medium and long-term).
• Established framework allows diverse markets to be followed at once.
• Permits the focus on trending markets, as opposed to markets that are not "moving".
Cons:
• May be a "self-fulfilling prophecy".
• Chart analysis can be subjective at times.
• Not effective on consolidating or non-trending markets.
• False breakouts can produce erroneous trading signals.

Source: Technical Analysis of the Futures Markets; RBC Capital Markets

3. Professional Certifications and Designations

Chartered Market Technician (CMT):
• Administered by the Market Technicians Association (MTA).
• Candidates must demonstrate proficiency in a broad range of subjects.
• Must complete 3 levels of exams in order to be awarded the designation.
Certified Financial Technician (CFTe):
• Administered by International Federation of Technical Analysts (IFTA).
• Candidates must demonstrate proficiency in a broad range of subjects.
• Must complete 2 levels of exams in order to be awarded the designation.

Source: MTA, IFTA

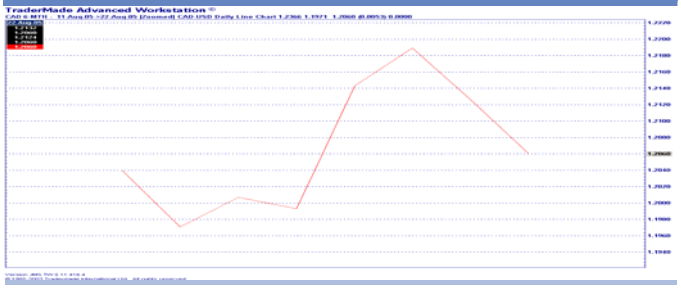
Types of Charts

Line Chart

The line chart consists of merely plotting the closing prices of an instrument over a chosen time period.

Implications: *While this most basic chart is easy to construct, the open, high and low data is not plotted for consideration.*

4. Line Chart



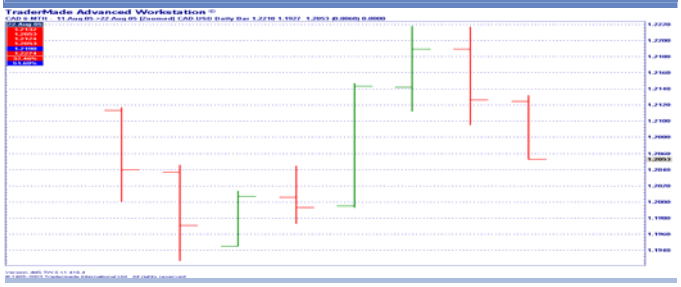
Source: Tradermade International Ltd.

Bar Chart

Vertically plotting the open, high, low and closing price of an instrument for a chosen time period will produce the bar chart.

Implications: *This is the most commonly used chart by technicians and overcomes the weaknesses of the line chart by including open, high, low and close data for scrutiny.*

5. Bar Chart



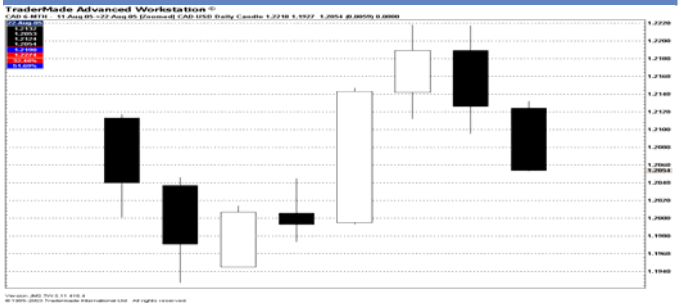
Source: Tradermade International Ltd.

Candlestick Chart

The candlestick chart consists of plotting the open, high, low and closing values for an instrument. However, the difference between the opening and closing values forms the candle and is termed the “real body”. The wicks that protrude above and below the real body are termed “upper shadows” and “lower shadows” respectively. Hollow real bodies are usually used to represent days with a positive net change in price, while solid real bodies usually represent days with a negative net change in price.

Implications: *A chart format that is increasing in popularity as the up and/or down days are more easily discernible.*

6. Candlestick Chart



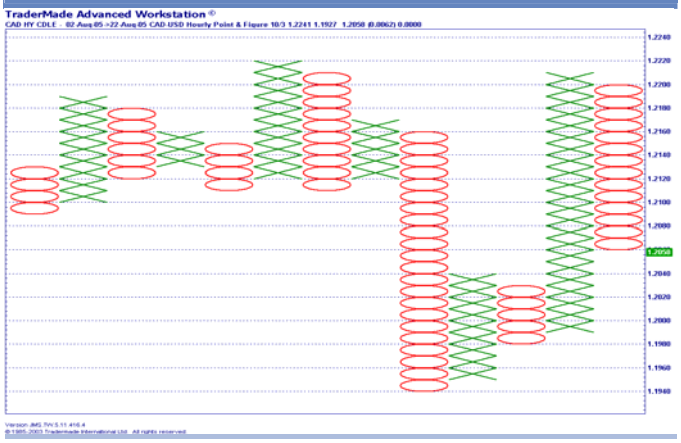
Source: Tradermade International Ltd.

Point and Figure Chart

The point and figure chart records price changes that are defined by box size criteria. While “X’s” and “O’s” denote upmoves and downmoves respectively, prices must reverse by the amount of the box size in order to be plotted. The example in Figure 7 displays a point and figure chart for USD/CAD using a box size of 10x3. Therefore, each “X” or “O” represents a price move of 10 points, and prices must reverse by a minimum of 30 points (10x3 is termed the reversal amount) in order to be plotted.

Implications: *A multidimensional chart format that disregards the time axis and concentrates on pure price movement. Periods of accumulation and distribution are easy to spot.*

7. Point and Figure Chart



Source: Tradermade International Ltd.

Ichimoku Kinko Hyo Chart

Ichimoku Kinko Hyo charts were developed just before World War II and increased in popularity in the mid-1990's, when books were published that explained this methodology in detail. This type of chart is often just referred to as an Ichimoku Chart or a Cloud Chart for short. These charts draw heavily from the use of moving averages in order to generate trading signals, using mid-point prices instead of daily closing prices.

The two main moving averages that are plotted on a candlestick chart are the following:

- **Tenkan-sen:** a nine-day moving average commonly referred to as the *Conversion Line* and
- **Kijun-sen:** a twenty-six day moving average commonly referred to as the *Base* Line (see Figure 8).

It is the crossing of the shorter moving average with the longer one that triggers buy and sell signals. These moving averages also serve as support and resistance levels (see page 7).

Three other lines are also plotted as part of a Cloud Chart:

- **Senkou Span A:** calculated by adding the Tenkan and Kijun and dividing the result by 2. Also known as *Leading Span A*, this result is shifted 26 days *ahead*.
- **Senkou Span B:** calculated by obtaining the highest price of the last 52 days and adding it to the lowest price of the last 52 days, dividing the product by 2. Also known as *Leading Span B*, this result is plotted 26 days *ahead*.

It is the shaded space between these two lines that forms the Cloud itself (see Figure 9).

The last line to add is:

- **Chikou Span:** today's closing price plotted 26 days *behind* the close (see Figure 10). If Chikou Span is above the candlestick from 26 days ago, the current market is said to be in a bullish long-term phase and vice-versa. The same can be said if Chikou Span is above or below the Cloud of 26 days prior (see Figure 10).

Implications: *If prices are above the Cloud, the trend is for higher prices and vice-versa. The top and bottom of the Cloud can be used as support or resistance levels. The thicker the Cloud, the less likely prices will be able to break through it in this regard.*

8. Ichimoku Cloud Charts: Tenkan-sen and Kijun-sen

Source: Tradermade International Ltd.

9. Senkou Span A and Senkou Span B Form Cloud

Source: Tradermade International Ltd.

10. Chikou Span Determines Bullish or Bearish Phases

Source: Tradermade International Ltd.

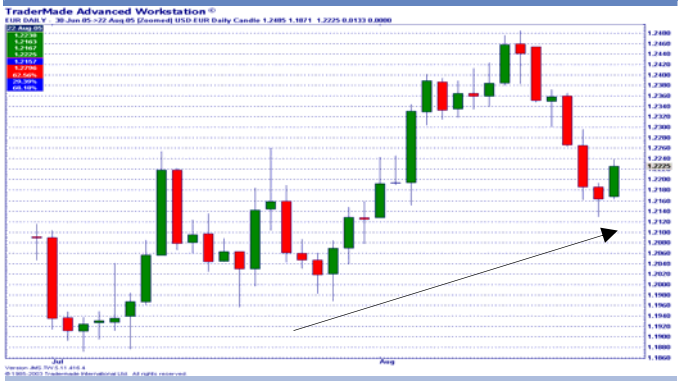
Trend Concepts

Uptrend

An uptrend consists of a series of ascending peaks and troughs that rise successively.

Implications: *Markets that display the characteristics of an uptrend are candidates to be purchased.*

11. The Uptrend



Source: Tradermade International Ltd.

Downtrend

A downtrend consists of a series of descending peaks and troughs that fall successively.

Implications: *Markets that display the characteristics of a downtrend are candidates to be sold.*

12. The Downtrend

Source: Tradermade International Ltd.

Sideways Trend

Markets that are in a sideways trend are often called “range trading” and feature a series of roughly level peaks and troughs. Markets actually spend up to 33% of time in this state.

Implications: *Markets that display the characteristics of a sideways trend are candidates to be avoided until an uptrend or downtrend develops.*

13. The Sideways Trend

Source: Tradermade International Ltd.

Trend Classifications

While trend classifications will often differ amongst technicians, Figure 14 summarizes the classifications that we use the most in our analysis.

14. Trend Classifications

Short-term or minor trends:	Up to 4 weeks in duration
Medium-term or intermediate trends:	One to six months in duration
Long-term or major trends:	Greater than six months in duration

Source: RBC Capital Markets

Support and Resistance

Support

Support is denoted by a series of reaction lows or troughs under the market where demand is sufficient enough to overcome supply.

Implications: *Support levels are expected to underpin the market and generate a rally in prices.*

15. Support

Source: Tradermade International Ltd.

Support – Role Reversal

Once a support level is penetrated, it often reverses roles and serves as resistance on pending rallies.

Implications: *After the role reversal takes place, the prior support level becomes resistance and is expected to limit pending rallies that may result.*

16. Support – Role Reversal

Source: Tradermade International Ltd.

Resistance

Resistance is denoted by a series of reaction highs or peaks above the market where supply is sufficient enough to overcome demand.

Implications: *Resistance levels are expected to halt upward price moves and generate a decline in prices.*

17. Resistance

Source: Tradermade International Ltd.

Resistance – Role Reversal

Once a resistance level is penetrated, it often reverses roles and serves as support during pending pullbacks.

Implications: *After the role reversal takes place, the prior resistance level becomes support and is expected to limit pending pullbacks that may result.*

18. Resistance – Role Reversal

Source: Tradermade International Ltd.

Trendlines

Up Trendline

An up trendline is merely a straight line drawn off a succession of reaction lows, with three points required to form a valid trendline. **The longer a trendline remains in place and the more times it is tested, the more significant it becomes.**

Implications: *Up trendlines serve as support and generate buying opportunities. Stop loss orders will likely be located below such trendlines, with a close below the trendline producing a bearish trend reversal.*

19. Up Trendline

Source: Tradermade International Ltd.

Down Trendline

A down trendline is merely a straight line drawn off a succession of reaction highs, with three points required to form a valid trendline. The longer a trendline remains in place and the more times it is tested, the more significant it becomes.

Implications: *Down trendlines serve as resistance and generate selling opportunities. Stop loss orders will likely be located above such trendlines, as a close above the trendline would produce a bullish trend reversal.*

20. Down Trendline

Source: Tradermade International Ltd.

Trendlines – Role Reversal

Similar to support and resistance levels, trendlines also reverse roles once they are penetrated. Therefore, an up trendline will become resistance and a down trendline will become support after penetration.

Implications: *Figure 21 illustrates the role reversal technique for a support trendline once it has been penetrated.*

21. Trendlines – Role Reversal

Source: Tradermade International Ltd.

The Channel Line

A channel starts out either in the form of a support or resistance trendline. Subsequent price action allows a parallel line to be drawn. These two parallel lines guide prices either higher or lower.

Ascending Channel

A channel that is rising as an uptrend remains in effect is referred to as an ascending channel.

Implications: *The channel pattern will constrain price action to a rising range. Pullbacks to support can be used to initiate long positions, while the channel line can be used to take profit. Once the boundaries of the channel are penetrated, the price objective is the width of the channel measured from the point of penetration.*

22. Ascending Channel and Bearish Trend Reversal

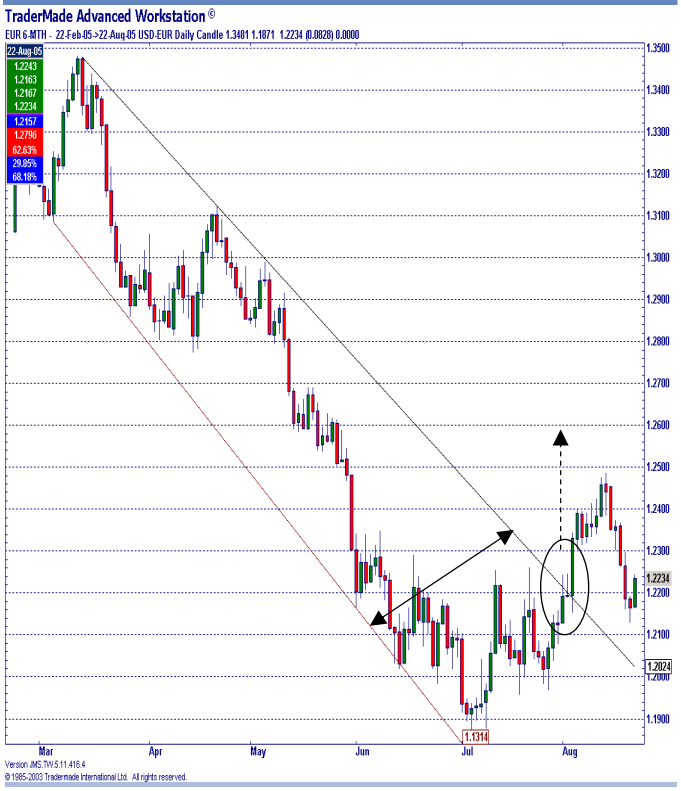
Source: Tradermade International Ltd.

Descending Channel

A channel that is falling as a downtrend remains in effect is referred to as a descending channel.

Implications: *The channel pattern will constrain price action to a falling range. Rallies to resistance can be used to initiate short positions, while the channel line can be used to take profit. Once the boundaries of the channel are penetrated, the price objective is the width of the channel measured from the point of penetration.*

23. Descending Channel and Bullish Trend Reversal



Source: Tradermade International Ltd.

Moving Averages

A moving average is the average of a number of data points over a chosen time period. The data is smoothed and is used to identify the beginning or termination of a trend. **The moving average does not anticipate price movement; rather, it reacts to price movement.**

Types of Moving Averages

- The **simple moving average** is commonly referred to as the arithmetic mean: it is the sum of all values for a chosen period divided by the number of observations.
- The **linear moving average** is an average of observations for a specified time period, with each observation assigned a weighting.
- The **exponential moving average** is not only a weighted average that assigns a greater weight to more recent observations, but it also includes all data in a given sample.

Implications: *Important moving averages such as the 40, 55 and 200-day moving average often become support and resistance areas and are also used to identify trend reversals.*

24. Plot of 40-Day Simple, Linear and Exponential Moving Averages

Source: Tradermade International Ltd.

40-day simple = blue line

40-day weighted = red line

40-day exponential = green line

Single Moving Average Crossover

A buy signal is generated in the context of a single moving average crossover when the closing price of an instrument moves above the selected moving average. Conversely, a sell signal is generated when the closing price moves below the moving average.

Implications: *A bullish crossover can be used to implement long positions, while a bearish crossover can be used to reverse positions and to initiate a short position.*

25. Single Moving Average Crossover

Source: Tradermade International Ltd.

Double Crossover Method

A buy signal is generated as part of the double crossover method when the shorter moving average closes above the longer moving average. This is often referred to as "the *golden cross*". Conversely, a sell signal is generated when the shorter moving average closes below the longer moving average. This is often referred to as "the *death cross*".

Implications: *The "golden cross" can be used to implement long positions, while a "death cross" can be used as a take profit and to initiate a short position.*

26. Double Crossover Method

Source: Tradermade International Ltd.

Bollinger Bands

Bollinger Bands were developed by John Bollinger in the early 1980s with the aim of providing a relative definition of high and low values for a security. They do not provide absolute buy and sell signals based on prices touching the bands per se and should therefore be used in conjunction with other indicators. The bands themselves are plotted as a standard deviation above and below a chosen moving average value. This way the bands are able to measure and depict increases and decreases in volatility in a dynamic fashion. Notably, the bands widen when volatility increases and narrow when volatility decreases.

The most common use of Bollinger Bands consists of a 20-day simple moving average, with the upper and lower bands placed 2 standard deviations above and below the moving average.

Implications: *(1) Prices near the lower band may indicate an oversold condition and vice-versa. (2) These oversold or overbought readings should always be used in conjunction with indicators and oscillators – where divergences can be used to issue buy or sell signals. (3) A significant narrowing in the bands can be used to anticipate more volatile trading conditions, when markets can be expected to develop a pronounced trend. The direction of the trend is not known, but other technical indicators can be used to help determine the anticipated directional bias.*

27. Bollinger Bands Depict Volatility

Source: Tradermade International Ltd.

Continuation Patterns

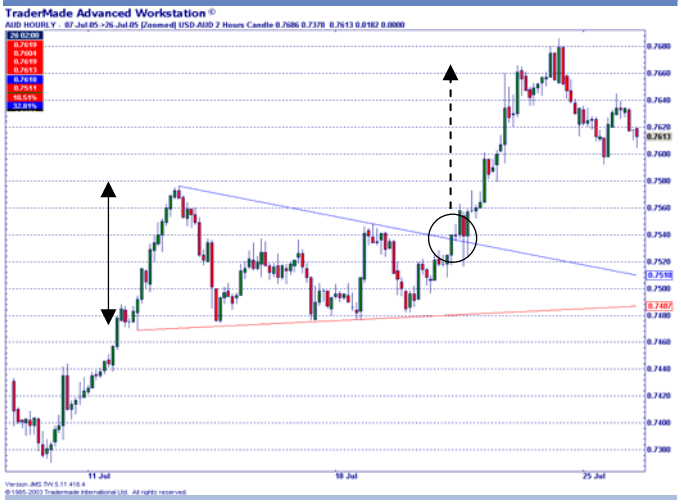
Continuation patterns usually indicate that consolidative price activity will resolve in the *same* direction as the trend that was in effect before the pattern formed.

Symmetrical Triangle

The symmetrical triangle is a continuation pattern that is formed by an ascending lower trendline and a descending upper trendline that converge. While this pattern can be bullish in an uptrend or bearish in a downtrend, a price breakout must occur before the three-quarter point of the triangle apex in order for this pattern to remain valid.

Implications: *Once a bullish or bearish breakout materializes, the price objective is the vertical height of the triangle from its widest point, projected from the breakout point. Figure 28 illustrates a bullish symmetrical triangle.*

28. Symmetrical Triangle Pattern - Bullish



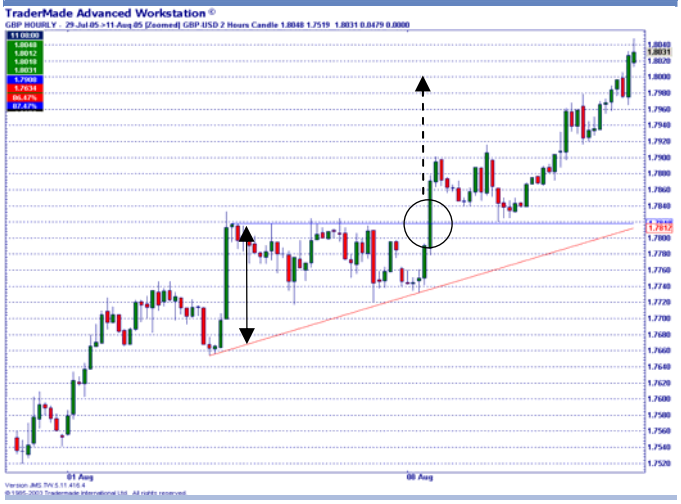
Source: Tradermade International Ltd.

Ascending Triangle

An ascending triangle is formed by a flat upper resistance line and an ascending lower support trendline that converge. With price action indicating that buyers are more aggressive than sellers (thus the rising support line), this pattern is bullish in nature.

Implications: *Once a bullish breakout materializes, the price objective is the vertical height of the triangle from its widest point, projected up from the breakout point.*

29. Ascending Triangle Pattern



Source: Tradermade International Ltd.

Descending Triangle

A descending triangle is formed by a declining upper resistance line and a flat lower support trendline that converge. With price action indicating that sellers are more aggressive than buyers (thus the declining resistance line), this pattern is bearish in nature.

Implications: *Once a bearish breakout materializes, the price objective is the vertical height of the triangle from its widest point, projected down from the breakout point.*

30. Descending Triangle Pattern

Source: Tradermade International Ltd.

Flags

A flag pattern is formed when prices pause during a very sharp market move. The period of consolidation is denoted by price activity that slopes against the previous trend before resuming in the same direction of the trend. The counter-trend pause results in the formation of parallel support and resistance trendlines. These patterns are normally short-term in nature and can be bullish or bearish.

Implications: *Once the flag pattern has broken out, the price objective is said to be equal to the "flagpole" – which is the previous sharp advance or decline that took place. Figure 31 presents an example of a bearish flag pattern.*

31. Flag Pattern - Bearish

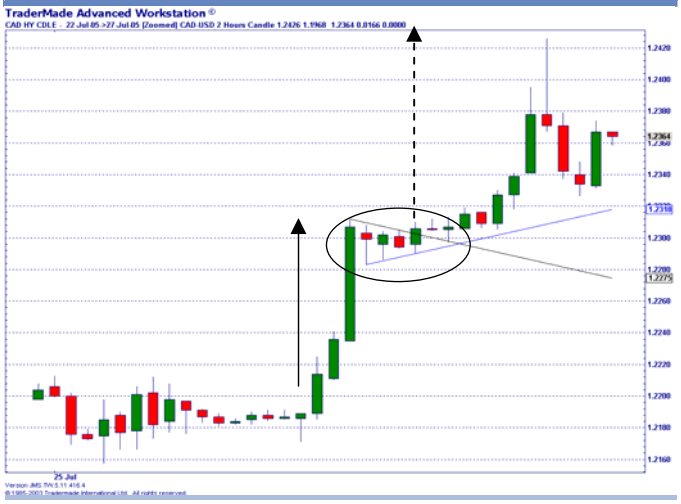
Source: Tradermade International Ltd.

Pennants

A pennant pattern is also formed when prices pause during a very sharp market move. While the period of consolidation slopes against the previous trend before resuming in the same direction as the trend, the resulting support and resistance trendlines converge (as opposed to being parallel as in the case of the flag). Pennants are often short-term in nature and can be bullish or bearish.

Implications: *Once the pennant pattern has broken out, the price objective is said to be equal to the "flagpole" – which is the previous sharp advance or decline that took place. Figure 32 presents an example of a bullish pennant pattern.*

32. Pennant Pattern - Bullish



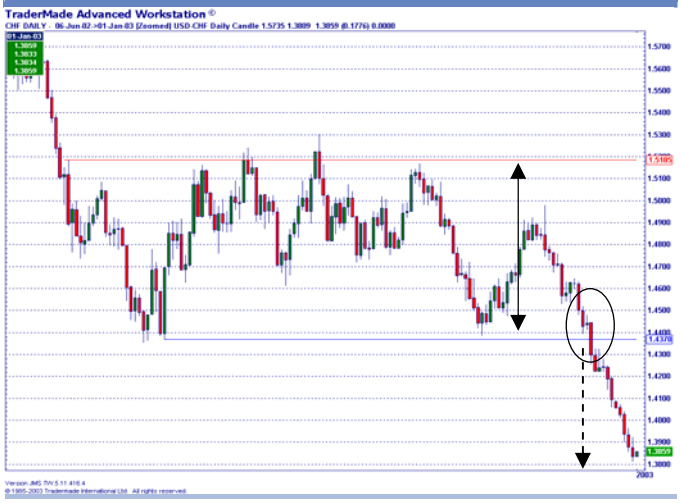
Source: Tradermade International Ltd.

Rectangle

A rectangle pattern denotes a period of price consolidation that represents a pause in the current trend. Although the resolution of the pattern is usually in the direction of the preceding trend, *care must be taken to ensure that it does not turn into a reversal pattern* (reversal patterns are covered in the next section).

Implications: *While the range of the rectangle pattern may present a trading opportunity while prices consolidate, once prices break out of the rectangle pattern, the measured move objective is the vertical height of the rectangle projected from the breakout point.*

33. Rectangle Pattern



Source: Tradermade International Ltd.

Rising Wedge

Although similar to a triangle pattern in shape, the rising wedge pattern differs by virtue of the rising slant of the pattern: the pattern slants *against* the prior *downtrend* as a series of narrowing higher lows and highs forms during a period of consolidation. In addition, while prices usually resolve the pattern two-thirds of the way to the apex, they may still move to the apex before breaking out. Price action is expected to resolve in the direction of the prior downtrend as part of the continuation theme.

Implications:

The rising wedge pattern is considered a bearish pattern in the context of a downtrend. The price objective is the height of the wedge from its widest point, projected from the breakout point.

34. Rising Wedge Pattern

Source: Tradermade International Ltd.

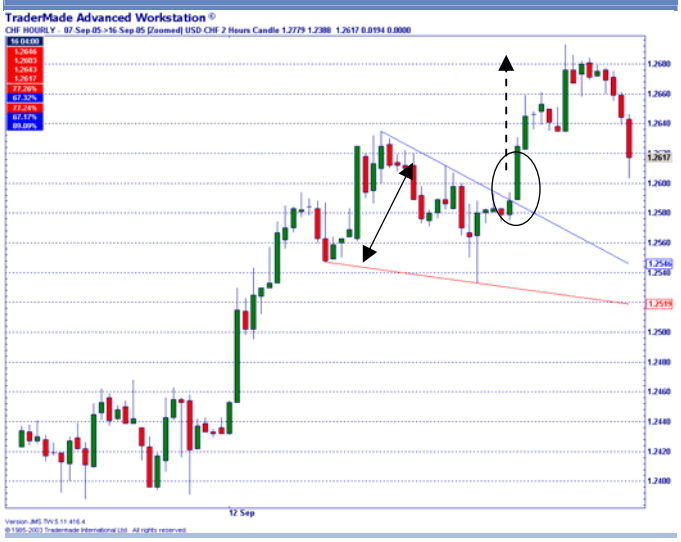
Falling Wedge

The falling wedge pattern is simply a mirror image of the rising wedge. The pattern slants *against* the prior *uptrend* as a series of narrowing lower lows and highs form during a period of consolidation. Price action is expected to resolve in the direction of the prior uptrend as part of the continuation theme.

Implications:

The falling wedge pattern is considered a bullish pattern in the context of an uptrend. The price objective is the height of the wedge from its widest point, projected from the breakout point.

35. Falling Wedge Pattern



Source: Tradermade International Ltd.

Reversal Patterns

Reversal patterns usually indicate that consolidative price activity will resolve in the *opposite* direction as the trend that was in effect before the pattern formed.

Double Tops and Double Bottoms

A double top (bottom) pattern features two price peaks (troughs) that occur at approximately the same level. This bearish (bullish) pattern is completed when prices break below the intervening lows (highs) that formed the pattern.

Implications: *Once a breakout has materialized, the price objective of the double top (bottom) is the difference between the price peaks (troughs) and the intervening lows (highs), projected from the breakout point. Figure 36 illustrates a bearish double top pattern.*

36. Double Top Pattern

Source: Tradermade International Ltd.

Triple Tops and Triple Bottoms

While less common than the double top or double bottom pattern, a triple top (bottom) features three price peaks (troughs) that occur at approximately the same level. This bearish (bullish) pattern is completed when prices break below the intervening lows (highs) that formed the pattern.

Implications: *Once a breakout has materialized, the price objective of the triple top (bottom) is the difference between the price peaks (troughs) and the intervening lows (highs), projected from the breakout point. Figure 37 illustrates a bullish triple bottom pattern.*

37. Triple Bottom Pattern

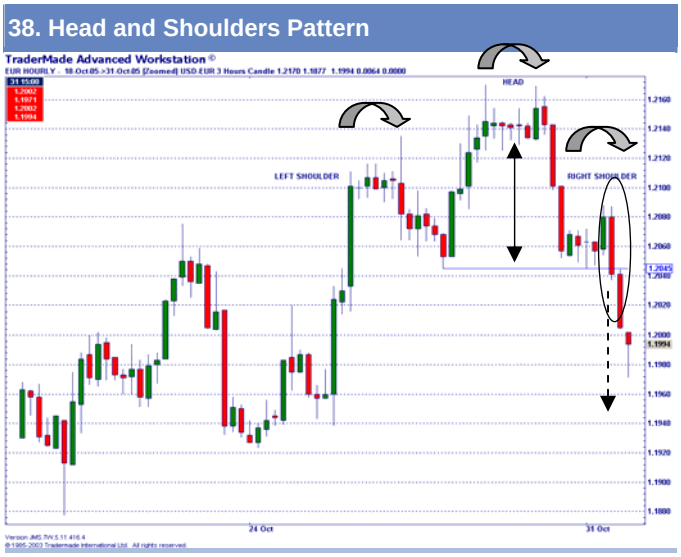
Source: Tradermade International Ltd.

Head and Shoulders/Inverted Head and Shoulders

The head and shoulders pattern is one of the more popular and reliable technical price patterns. In an uptrend, prices experience a correction before rallying to new highs. This is followed by another retreat that stalls near the previous correction point. An ensuing, but feeble rally allows a support trendline to be drawn. This line is called the *neckline.* The penetration of the neckline produces the *bearish* resolution of the head and shoulders pattern – and a return price move fails against the neckline. The inverted head and shoulders pattern is merely the mirror image of the head and shoulders pattern – with *bullish* implications.

Implications: *Once the neckline is penetrated, the measured move objective is the distance from the head to the neckline, projected from the breakdown point. Figure 38 illustrates a bearish head and shoulders pattern.*

38. Head and Shoulders Pattern



Source: Tradermade International Ltd.

Rising Wedge

As a *continuation pattern*, a rising wedge slopes *against* the prevailing trend (see page 14). However, in some instances, a rising wedge pattern may slope in the *same* direction as the prevailing trend. *In this case, the rising wedge is considered as a bearish reversal pattern in the context of an uptrend.* Prices may reach the apex of the wedge before resolving the pattern.

Implications:

The price objective is the height of the wedge from its widest point, projected from the breakout point.

39. Rising Wedge Pattern

Source: Tradermade International Ltd.

Falling Wedge

As a reversal pattern, the falling wedge is simply a mirror image of the rising wedge. The pattern slants in the same direction as the prevailing trend. *In this case, the falling wedge is considered as a bullish reversal pattern in the context of a downtrend.* Prices may reach the apex of the wedge before resolving the pattern.

Implications:

The price objective is the height of the wedge from its widest point, projected from the breakout point.

40. Falling Wedge Pattern

Source: Tradermade International Ltd.

Bullish/Bearish Key Reversal Day

A key reversal day can take place in an uptrend or in a downtrend. A bullish key reversal day occurs in a downtrend when prices form a lower low than the previous day, a higher high, and close *above* the previous day's close. Conversely, a bearish key reversal day occurs in an uptrend when prices form a higher high than the previous day, a lower low, and close *below* the previous day's close.

Implications:

Although a bullish (bearish) key reversal day has the most predictive value when it takes place at the low (high) of a move, it has no measured move objective per se. It just warns of a potential price reversal and can be confirmed by the break of a key trendline.

41. Bullish Key Reversal Day

Source: Tradermade International Ltd.

Diamond

This relatively rare pattern is the combination of expanding and symmetrical triangles and normally appears as price action forms a market top.

Implications:

This pattern is often a reversal pattern and is completed when the lower support trendline is broken. The measured move objective is the height of the pattern from its widest point, projected from the breakout point.

42. Diamond Pattern

Source: Tradermade International Ltd.

Fibonacci Retracement Ratios

Once a reversal pattern is confirmed, technicians often apply Fibonacci retracement ratios in order to assess how far a potential retracement may progress. These ratios utilize mathematical relationships that deal with a numerical sequence.

Implications:

The most common ratios to watch for are: 38.2% retracement, 50% retracement, 61.8% retracement and 100% retracement. Other retracement levels sometimes used include 23.6%, 76.4%, 138.2%, 161.8% and 200% retracement.

43. Common Fibonacci Retracement Ratios

Source: Tradermade International Ltd.

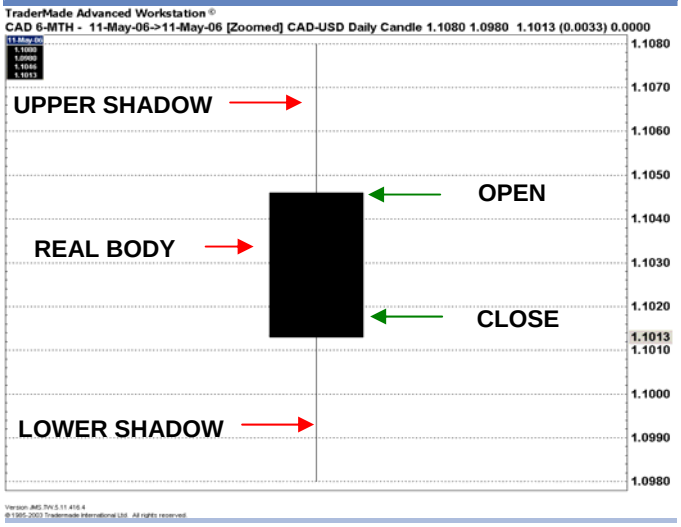
Candlestick Patterns

Candlestick Chart

As discussed on page 4, the candlestick chart consists of plotting the open, high, low and closing values for an instrument – with special emphasis given to the *opening* and *closing* values. The difference between the opening and closing values forms the candle and is termed the "real body", with up days representing a hollow real body (green in our charts) and down days representing a black solid body (red in our charts). The wicks that protrude above and below the real body are termed "upper shadows" and "lower shadows" respectively and these price extremes represent the high and low prices for the period in question.

Implications: *A different chart format that is gaining in popularity. Single or multiple candlesticks can be used in order to identify reversal or continuation patterns.*

44. Candlestick Chart



Source: Tradermade International Ltd.

Reversal Patterns

Doji

A doji pattern is formed when the open and closing prices occur at roughly the same level. Hence this candlestick pattern does not feature a significant real body per se.

Implications: *The lack of a real body indicates market indecision in a bullish or bearish trend. As such, the doji pattern can serve as a bearish reversal pattern in an uptrend, or a bullish reversal pattern in a downtrend. Figure 45 presents an example of a bearish doji pattern in an uptrend – as the indecision produces a pronounced trend change.*

45. Doji Pattern - Bearish

Source: Tradermade International Ltd.

Gravestone Doji

A doji pattern that is formed when the open and closing prices occur at roughly the same level at the *low* for the period in question. The longer the upper shadow, the more bearish the signal. Note that this pattern is only *bearish* in nature.

Implications: *Indicates not only market indecision in an uptrend but also a more pronounced bearish reversal pattern. The sharp rejection of a new high, coupled with the inability of prices to close clearly higher on the day amplifies the bearish undertones of this pattern.*

46. Gravestone Doji Pattern

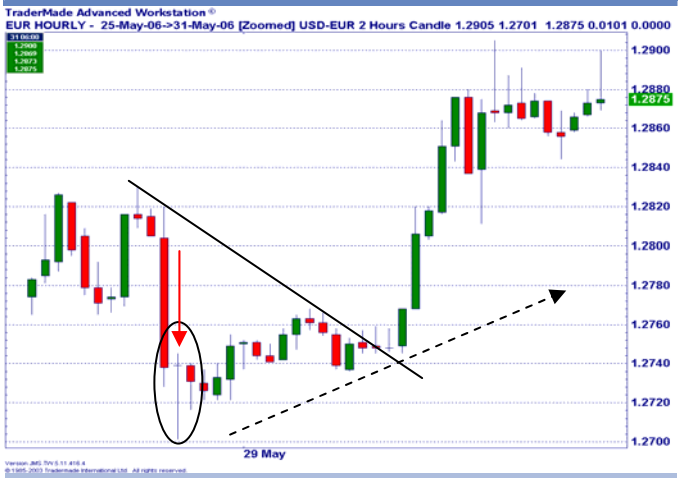
Source: Tradermade International Ltd.

Dragonfly Doji

A doji pattern that is formed when the open and closing prices occur at roughly the same level but the doji occurs at the *upper end* of the trading range. Hence, the low is significantly below the level where the doji forms. Note that this pattern is only *bullish* in nature.

Implications: *Indicates not only market indecision in a downtrend but also a more pronounced bullish reversal pattern. The sharp rejection of a new low, coupled with the inability of prices to close clearly lower on the day amplifies the bullish undertone of this pattern.*

47. Dragonfly Doji Pattern



Source: Tradermade International Ltd.

Shooting Star

A candle pattern that develops after an uptrend and features a long upper shadow along with a small (or no) lower shadow. The pattern is also comprised of a very small real body that forms near the low for that time period.

Implications: *The sharp rejection of a new cyclical high and the close near the bottom end of the trading range indicates that a shift in market sentiment has taken place. Often the subsequent penetration of a support level will affirm the bearish implications of this pattern.*

48. Shooting Star Pattern

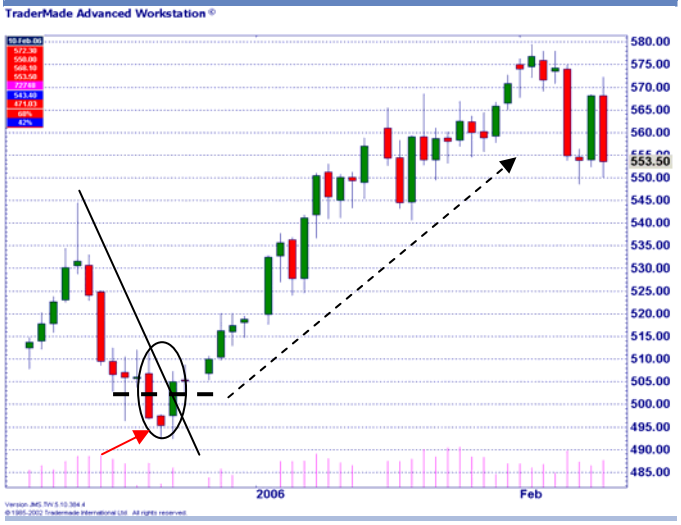
Source: Tradermade International Ltd.

Morning Star

A pattern that comprises three candlesticks. The first features a long bearish real body as prices accelerate lower in a downtrend. The second features a very small real body that gaps lower, followed by the third candle that features a strong rally that closes above the mid-point of the first candle.

Implications: *The first day of price action reinforces the overall bearish trend. However, the formation of a star on the second day, with a small real body, indicates a potential change in sentiment. This is magnified by the third candle, which produces a strong countertrend rally and closes above the mid-point of the first day. The penetration of a resistance level will often confirm the bullish implications of this pattern. If the star is a doji, this pattern is termed a morning doji star.*

49. Morning Star Pattern



Source: Tradermade International Ltd.

Evening Star

The opposite of the morning star pattern. A pattern that also features three candles, with the first representing a long bullish real body as prices accelerate higher in an uptrend. The second day features a small real body that gaps higher, followed by a third candle that features a strong selloff that closes below the mid-point of the first candle.

Implications: *The first day of price action reinforces the overall bullish trend. However, the formation of a star on the second day, with a small real body, indicates a potential change in sentiment. This is magnified by the third candle, which produces a strong countertrend selloff and closes below the mid-point of the first day. The penetration of a support level will often confirm the bullish implications of this pattern. If the star is a doji, this pattern is termed an evening doji star.*

50. Evening Star Pattern

Source: Tradermade International Ltd.

Hammer

A hammer pattern features a small real body with a very long lower shadow. The real body forms at the top of the trading range and can be solid or hollow (red or green).

Implications: *This is a bullish pattern if it occurs after a pronounced downtrend. The lower shadow should be 2 to 3 times the height of the real body in order to increase the accuracy of the pattern. Note that the sharp rejection of the new low indicates a potential change in market sentiment that is later confirmed by the penetration of resistance. The opposite of the hammer pattern is the hanging man pattern (see below).*

51. Hammer Pattern

Source: Tradermade International Ltd.

Hanging Man

A hanging man pattern also features a small real body with a long lower shadow. The real body forms at the top of the trading range and can be solid or hollow (red or green).

Implications: *However, this is a bearish pattern if it occurs after an uptrend has been in place. Note that the small real body suggests the possible loss of upward price momentum that is later confirmed as prices pierce a support level. Ideally, the lower shadow should be 2 to 3 times the height of the real body. The opposite of the hanging man pattern is the hammer pattern (see above).*

52. Hanging Man Pattern

Source: Tradermade International Ltd.

Bullish Engulfing Line

A bullish engulfing pattern is comprised of two candlestick lines – a small solid line (red) followed by a large hollow line (green). The hollow body is contained entirely within the solid one – hence the term "engulfing".

Implications: *This is a bullish pattern if it occurs after an identifiable downtrend has been in place. Note that the large hollow real body of the engulfing pattern is bullish in nature – as it denotes a bullish shift in sentiment at the low for the move. The opposite of the bullish engulfing line is the bearish engulfing line (see below).*

53. Bullish Engulfing Pattern

Source: Tradermade International Ltd.

Bearish Engulfing Line

A bearish engulfing pattern is comprised of two candlestick lines – a small hollow line (green) followed by a large solid (red) line. The hollow body is contained entirely within the solid one – hence the term "engulfing".

Implications: *This is a bearish pattern if it occurs after an identifiable uptrend has been in place. Note that the large solid real body of the engulfing pattern is bearish in nature – as it denotes a bearish shift in sentiment at the high for the move. The opposite of the bearish engulfing line is the bullish engulfing line (see above).*

54. Bearish Engulfing Pattern

Source: Tradermade International Ltd.

Piercing Line

A piercing line pattern is also comprised of two candlestick lines – a long solid line (red) followed by a large hollow (green) line. The second candle features an open that is below the low of the prior day – but the close is more that half way above the prior day's real body.

Implications: *This is a bullish pattern in a downtrend, as prices are not able to sustain the downward price momentum despite opening below the prior day's low. As such, a change in market sentiment may be underway. The opposite of the piercing line is the ominous sounding dark cloud cover (see page 22).*

55. Piercing Line Pattern

Source: Tradermade International Ltd.

Dark Cloud Cover

A dark cloud cover pattern is comprised of two candlestick lines – a long hollow line (green) followed by a solid (red) line. The second candle features an open that is above the high of the prior day – but the close is below the mid-point the prior day's real body.

Implications: *This is a bearish pattern in an uptrend, as prices are not able to sustain the upward price momentum despite opening above the prior day's high. As such, a change in market sentiment may be underway. The opposite of the dark cloud cover pattern is the piercing line (see page 21).*

56. Dark Cloud Cover Pattern

Source: Tradermade International Ltd.

Bullish Harami/Harami Cross

A bullish harami pattern is comprised of a long solid line (red) followed by a smaller hollow (green) line that falls within the real body of the prior day. The harami cross pattern features the same characteristics as above, except that a doji pattern forms on the second day – with the doji falling within the real body of the prior day.

Implications: *This is a bullish pattern in a downtrend, as the second day's price action signals a sharp decline in downward price momentum. The Harami cross pattern is considered as a bullish reversal pattern as market indecision later leads to a trend change.*

57. Bullish Harami Pattern

Source: Tradermade International Ltd.

Bearish Harami/Harami Cross

A bearish harami pattern is comprised of a long hollow line (green) followed by a smaller solid (red) line that falls within the real body of the prior day. The harami cross pattern features the same characteristics as above, except that a doji pattern forms on the second day – with the doji falling within the real body of the prior day.

Implications: *This is a bearish pattern in an uptrend, as the second day's price action signals a sharp decline in upward price momentum. The Harami cross pattern is considered as a bearish reversal pattern as market indecision later leads to a trend change.*

58. Bearish Harami Pattern

Source: Tradermade International Ltd.

Tweezer Bottoms

A tweezer bottom takes place when two (or more) candlesticks form price bottoms at the same level. The real bodies can be hollow (greed) or solid (red) and the candlesticks do not necessarily have to form on consecutive days.

Implications: *Although only a minor reversal pattern, the formation of two price lows at roughly the same level indicates an area of support in the market (where demand overcomes supply). Therefore, this area is likely to trigger a rally in prices.*

59. Tweezer Bottom Pattern

Source: Tradermade International Ltd.

Tweezer Tops

A tweezer top takes place when two (or more) candlesticks form a price top at the same level. The real bodies can be hollow (greed) or solid (red) and the candlesticks do not necessarily have to form on consecutive days.

Implications: *Although only a minor reversal pattern, the formation of two price highs at roughly the same level indicates an area of resistance in the market (where supply is greater than demand). This area is likely to trigger a selloff in prices.*

60. Tweezer Top Pattern

Source: Tradermade International Ltd.

Three River Bottom

A candlestick pattern of a longer duration that features three price bottoms that form at approximately the same level. This pattern is similar in form to the triple bottom pattern in traditional technical analysis methodology.

Implications: *With demand overcoming supply near the same price level each time, a strong level of support is formed where the market feels comfortable accumulating long positions. This support indicates bullish market sentiment and warns of the potential building of a base and eventual reversal of a downtrend.*

61. Three River Bottom Pattern

Source: Tradermade International Ltd.

Three Mountain Top

A candlestick pattern of a longer duration that features three price tops that form at approximately the same price level. This pattern is similar in form to the triple top pattern in traditional technical analysis methodology.

Implications: *With supply overcoming demand near the same price level each time, a strong level of resistance is formed where the market feels comfortable accumulating short positions. This resistance indicates bearish market sentiment and warns of the potential building of a top and eventual reversal of an uptrend.*

62. Three Mountain Top Pattern

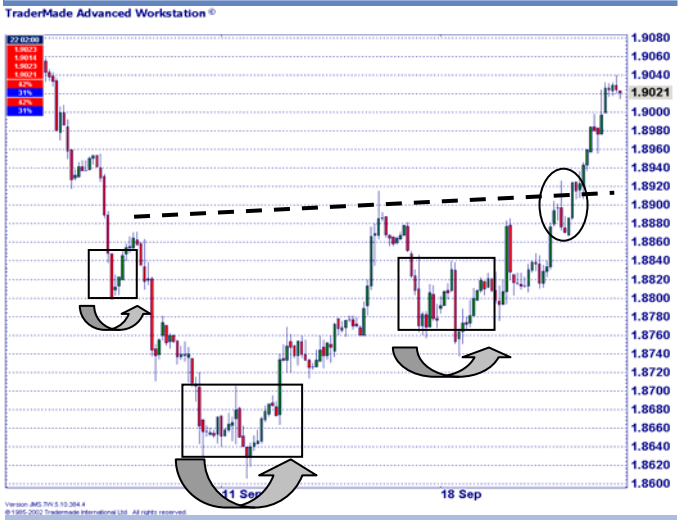
Source: Tradermade International Ltd.

Inverted Three Buddha

A variation of the three river bottom pattern (see page 23) – where the middle river is the lowest of the three price troughs. This pattern is similar in form to the inverted head and shoulders pattern in traditional technical analysis methodology.

Implications: *With demand overcoming supply as a downtrend loses momentum, the failure to establish a new low at the third price trough demonstrates an erosion of bearish market sentiment or psychology. The subsequent break above an important resistance level confirms the bearish implications of this pattern.*

63. Inverted Three Buddha Pattern



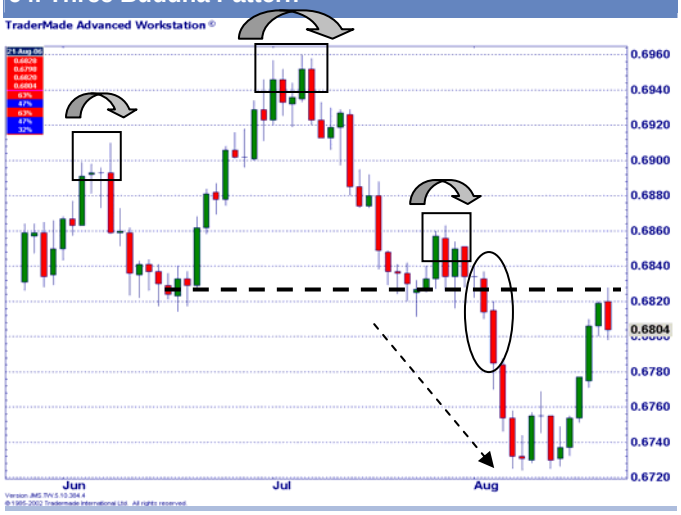
Source: Tradermade International Ltd.

Three Buddha

A variation of the three mountain top pattern (see above) – where the middle mountain is the tallest (highest) of the three peaks. This pattern is similar in form to the head and shoulders pattern in traditional technical analysis methodology.

Implications: *With supply overcoming demand as an uptrend loses momentum, the failure to establish a new high at the third price top demonstrates an erosion of bullish market sentiment or psychology. The subsequent break below an important support level confirms the bearish implications of this pattern.*

64. Three Buddha Pattern



Source: Tradermade International Ltd.

Continuation Patterns

Rising Window

A rising window pattern is similar to the gap in Western technical terminology. A rising window occurs when prices open above the prior day's high and continue to trade higher.

Implications: *This pattern is a continuation pattern, as a window that opens to the upside is a bullish signal. In addition, the window area should serve as support under such circumstances.*

65. Rising Window Pattern

Source: Tradermade International Ltd.

Falling Window

A falling window pattern is also similar to the gap in Western technical terminology. This pattern occurs when prices close below the prior day's low and continue to trade lower.

Implications: *This pattern is a continuation pattern, as a window that opens to the downside is a bearish signal. In addition, the window area should serve as resistance under such circumstances.*

66. Falling Window Pattern

Source: Tradermade International Ltd.

Valuation Analysis

While most technical approaches are trend following in nature, some tools can be applied in non-trending markets as well. These tools are known as *oscillators* or *indicators* and they are usually plotted in the lower portion of a chart, below price.

Oscillator and Indicator Application

The usefulness of oscillators and indicators is not just limited to non-trending markets though. In fact, they can be applied in conjunction with the prevailing trend in order to provide a trader with valuable information.

The three most important uses for an oscillator or indicator are the following:

- **Provision of trading signals**
- **Identification of overbought or oversold markets**
- **Isolation of bullish or bearish divergences**

67. Oscillator/Indicator Plotted on a Chart

Source: Tradermade International Ltd.

Provision of Trading Signals

Some indicators are plotted within a range of +1 to -1, with the crossing of the zero line used to generate a buy or sell signal. In Figure 68, the momentum indicator is used to illustrate this concept. Note that a *buy signal* was generated in late June with the crossing of the zero line from below, while late July saw the long position closed out profitably after a *sell signal* was generated by the crossing of the zero line from above as the indicator resolved an extremely overbought condition.

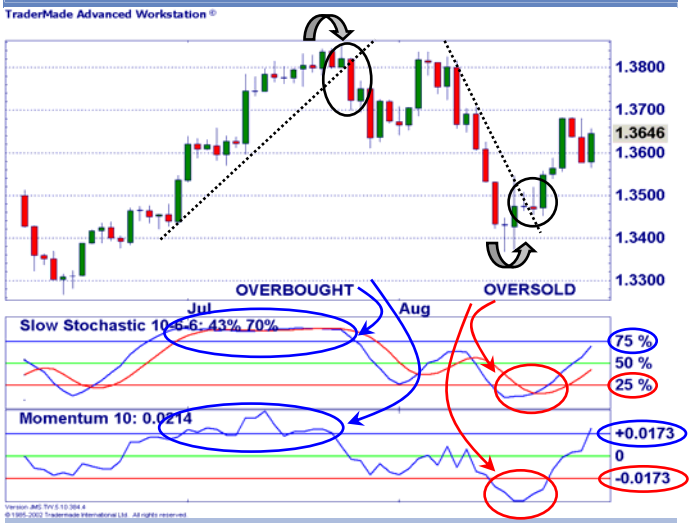
68. Indicator Buy and Sell Signals

Source: Tradermade International Ltd.

Identification of Overbought or Oversold Markets

When indicators move to historical extremes, markets are said to be "overextended" or "ahead of themselves" and vulnerable to a price correction. Hence, when the indicator is testing its upper boundary the instrument under consideration is said to be *overbought*. When the indicator is testing the lower boundary, it is said to be *oversold*. Some indicators, such as the momentum study in Figure 68 do not have fixed boundaries, so the overbought (above the blue line) and oversold (below the red line) levels will vary from instrument to instrument. Other indicators, such as the RSI or stochastic oscillator feature fixed boundaries, with readings above 75-80% generally considered overbought and readings below 25-30% considered oversold (see Figures 67 and 69).

69. Indicator Overbought and Oversold Readings



Source: Tradermade International Ltd.

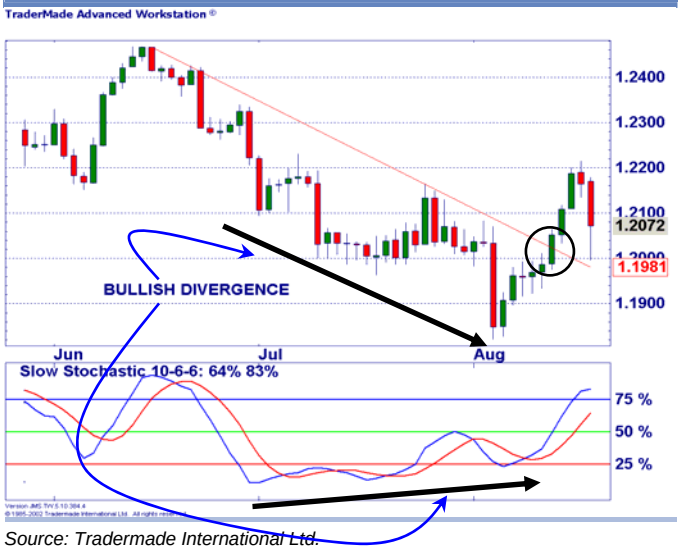
Isolation of Bullish and Bearish Divergences

A *divergence* takes place when *price* and the *oscillator* move in *opposite directions*. A *bearish divergence* takes place when prices move to new highs, while the indicator fails to confirm and turns lower. Conversely, a *bullish divergence* takes place when prices move to new lows, yet the indicator fails to confirm and turns upward. Figure 70 illustrates a bearish divergence, while Figure 71 illustrates a bullish divergence. Again, divergences serve as a warning sign as they often coincide with or precede a change in trend.

70. Bearish Divergence

Source: Tradermade International Ltd.

71. Bullish Divergence



Source: Tradermade International Ltd.

A Very Powerful Signal

When a bearish divergence forms from overbought levels (or a bullish divergence forms from oversold levels), a powerful signal is often provided to the market. In the case of a bearish divergence from overbought levels, traders are warned that the probability of a downward price retracement or correction has increased dramatically (see Figure 72). This would cause those who are long to take profit or at least tighten (raise) their stop loss levels in order to limit risk. Alternatively, more aggressive traders might even consider implementing short positions. In Figure 72, note that the bearish divergence forms from overbought levels for 3 weeks, causing prices to eventually generate a bearish trend change and sell off from 78.28 to 68.63 – or 12.33% - in just 3 weeks.

72. Bearish Divergence From Overbought Levels

Source: Tradermade International Ltd.

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