Online Tutorial

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I. Forex Online Trading

1. What is Forex ?

The Foreign Exchange market, also referred to as the "Forex" or "FX" market, is the largest financial market in the world, with a daily average turnover of well over US$1 trillion -- 30 times larger than the combined volume of all U.S. equity markets. Unlike other financial markets, the forex market has no physical location or central exchange. It is an over-the-counter market where buyers and sellers including banks, corporations, and private investors conduct business. A true 24-hour market, Forex trading begins each day in Sydney, and moves around the globe as the business day begins in each financial center, first to Tokyo, London, and New York. Unlike any other financial market, investors can respond to currency fluctuations caused by economic, social and political events at the time they occur - day or night. The huge number and diversity of players involved make it difficult for even governments to control the direction of the market. The unmatched liquidity and around-the-clock global activity make forex the ideal market for active traders.

Traditionally the forex market was only available to larger entities trading currencies for commercial and investment purposes through banks. Now trading platforms, such as the RF2000TM, allow smaller financial institutions and retail investors access to a similar level of liquidity as the major foreign exchange banks, by offering a gateway to the primary (Interbank) market.

In the forex market currencies are always priced in pairs; therefore all trades result in the simultaneous buying of one currency and the selling of another. The objective of currency trading is to exchange one currency for another in the expectation that the market rate or price will change so that the currency you bought has increased its value relative to the one you sold. If you have bought a currency and the price appreciates in value, the trader must sell the currency back in order to lock in the profit. An open trade or position is one in which a trader has either bought/sold one currency pair and has not sold/bought back the equivalent amount to effectively close the position.

The first currency in the pair is referred to as the base currency, and the second currency is the counter or quote currency. This means that quotes are expressed as a unit of 1 of the first currency quoted per the other currency quoted in the pair.

As with all financial products, FX quotes include a "bid" and "ask". The bid is the price at which a market maker (Realtime Forex) is willing to buy (and clients can sell) the base currency in exchange for the counter currency. The ask is the price at which a market maker (Realtime Forex) will sell (and clients can buy) the base currency in exchange for the counter currency. The difference between the bid and the ask price is referred to as the spread.

2. Technical and Fundamental Analysis

There are two basic approaches to analyzing the currency market, fundamental analysis and technical analysis. The fundamental analyst concentrates on the underlying causes of price movements, while the technical analyst studies the price movements themselves.

a. Technical analysis

A Technical Analysis is what one uses to attempt to predict future price movements, based on past time framed analysis and the reading / understanding of graphics. Although within a Technical Analysis various thought patterns exist, generally all are based on historical graphics of a currency. As long as one realizes the various differences of Fundamental and Technical Analysis, both can be used to parallel one another, even though both may present different conclusions.

b. Fundamental Analysis

The study of specific factors, such as wars, discoveries, and changes in Government policies, which influence supply and demand, and consequently prices in the market place.

Fundamental analysis comprises the examination of macroeconomic indicators, asset markets and political considerations when evaluating a nation's currency in terms of another. Macroeconomic indicators include figures such as growth rates; as measured by Gross Domestic Product, interest rates, inflation, unemployment, money supply, foreign exchange reserves and productivity. Asset markets comprise stocks, bonds and real estate. Political considerations impact the level of confidence in a nation's government, the climate of stability and level of certainty.

Sometimes governments stand in the way of market forces impacting their currencies, and hence, intervene to keep currencies from deviating markedly from undesired levels. Currency interventions are conducted by central banks and usually have a notable, albeit a temporary impact on FX markets. A central bank could undertake unilateral purchases/sales of its currency against another currency; or engage in concerted intervention in which it collaborates with other central banks for a much more pronounced effect. Alternatively, some countries can manage to move their currencies, merely by hinting, or threatening to intervene.

Technical Analysis or Fundamental Analysis ?

One of the dominant debates in financial market analysis is the relative validity of the two major tiers of analysis: Fundamental and technical. In Forex, several studies concluded that fundamental analysis was more effective in predicting trends for the long-term (longer than one year), while technical analysis was more appropriate for shorter time horizons (0-90 days). Combining both approaches was suggested to be best suited for periods between 3 months and one year. Nonetheless, further empirical evidence reveals that technical analysis of long-term trends helps identify longer-term technical "waves", and that fundamental factors do trigger short-term developments.

But most traders abide by technical analysis because it does not require hours of study. Technical analysts can follow many currencies at one time. Fundamental analysts, however, tend to specialize due to the overwhelming amount of data in the market. Technical analysis works well because the currency market tends to develop strong trends. Once technical analysis is mastered, it can be applied with equal ease to any time frame or currency traded.

3. Psychology of Trading

Expectation and Sentiment

Fundamental and technical factors are undeniably essential in determining foreign exchange dynamics. There are, however, two additional factors that are paramount to understanding short-term movements in the market. These are expectations and sentiment. They may sound similar, but remain distinct.

Expectations are formed ahead of the release of economic statistics and financial data. Solely paying attention to the figures released does not suffice in grasping the future course of a currency.

If, for example, US GDP came out at 7.0% from 5% in the previous quarter, then the dollar may not necessarily move as you would expect it to. If market forecasts had expected an 8% growth, then the 7.0% reading might come as a disappointment, thus causing a very different market reaction from the one you were expecting had you not been aware of the forecast.

Nonetheless, expectations could be superseded by market sentiment. This is the prevailing market attitude vis-à-vis an exchange rate; which could be a result of the overall economic assessment towards the country in question, general market emphasis, or other exogenous factors. Using the above example on US GDP; even if the resulting figure of 7.0% undershot forecasts by a full percentage point, markets may show no reaction. A possible reason is that sentiment could be dollar positive regardless of the actual and forecasted figures. This might be due to solid US asset markets, or poor fundamentals in the counter currency (euro, yen or sterling).

A term that is commonly interchanged with "sentiment" is "psychology". During the first two months of 2000, the euro underwent fierce selling pressure against the dollar despite persistently improving fundamentals in the Eurozone. That is because market psychology had decidedly favoured US dollar assets due to continuous signs of non-inflationary growth, and sentiment that further increases in US interest rates will work in the advantage of US yield differentials, without derailing the economic expansion.

4. Forex vs Equities and Futures

Commission Free Trading

We are able to provide this level of service to our clients because Realtime Forex SA is a market maker, not a broker. There are, therefore, no mark ups, commissions or charges to pay. Our profitability, as our clients', depends solely on our trading ability

20 : 1 Leverage (or even greater)

Realtime Forex SA allows greater leverage than the equities, futures or options market. Traders can utilize 20:1 leverage (or even greater) without risking a margin call situation. Leverage is a double-edged sword. Without proper risk management this high degree of leverage can lead to large losses as well as gains.

24-Hour Market

The Forex market is a seamless 24-hour market. As a trader, this allows you to react to favorable/unfavorable events by trading immediately. It also gives traders the added flexibility of determining their trading day.

Ability to Profit in Up or Down Market

Unlike the equity market, there is no restriction on short selling. Profit potential exists in the currency market regardless of whether a trader is long or short, or which way the market is moving. Since currency trading always involves buying one currency and selling another, there is no structural bias to the market. This means a trader has an equal potential to profit in a rising, or falling market

Superior liquidity

With a daily trading volume that is 50x larger than the New York Stock Exchange, there are always broker/dealers willing to buy or sell currencies in the FX markets. The liquidity of this market, especially that of the major currencies, helps ensure price stability. Traders can almost always open or close a position at a fair market price.

5. The 8 most important trading recommendations

1. The Trend is your friend

2. In up-trends, buy the dips; in downtrends, sell bounces

3. Let profits run, cut losses short. Always use protective stops to limit losses and move them only to reduce potential losses or protect newly achieved profits

4. Set up your plan before entering the market; don't trade impulsively

5. Employ at least a 3 to 1 reward-to-risk ratio

6. When pyramiding, follow these guidelines:

a) Each successive layer should be smaller than the preceding one

b) Add only to winning positions

c) Never add to a losing position

d) Adjust protective stops to the break-even point (or better)

7 Learn to be comfortable being in the minority, if you are right on the market, most people will disagree with you

8. Keep it simple; more complicated isn't always better

6. Why trade Forex with Realtime Forex SA ?

Realtime, competitive prices

On screen prices are updated constantly to reflect current market prices and all clients receive the same price irrespective of deal size

Commission FREE

We are able to provide this level of service to our clients because Realtime Forex SA is a market maker, not a broker. There are, therefore, no mark ups, commissions or charges to pay. Our profitability, as our clients', depends solely on our trading ability

Quick and efficient trading

Clients are able to trade in a matter of seconds via the Internet on the prices quoted to them on RF2000tm. There is no need to call for a price or to call to place an order

Secure transactions

All clients transactions are secured and client accounts protected by a state-of-art encryption system.

Professional back-office services

Clients receive immediate deal confirmation, realtime accounting, and online position and margin monitoring

Market Information

Clients are provided with the latest market information and 24H access to Realtime Forex SA's experienced group of traders

Margin

The initial deposit is EUR 20'000.-- someone can already be engaging the foreign exchange market from anywhere, 24 hours a day with possibility to have 2.5 % leverages, i.e 40 times the initial deposit, and prices are quoted with a small spread.

II. Types of Orders

1. Types of Orders

Our customers can place various types of orders to secure profit or limit risk. These orders can come in handy but one should be aware that some orders are not necessarily combined with the actual transaction. If an order is executed one should make sure to cancel all outstanding related orders on that closed position. If not these orders can become a new order without tended to be so.

'GTC' (Good Till Cancelled) Orders

When placing an Order, you must specify for how long the Order is to be valid. The GTC Order is a very common type of Order; it remains valid, 24 hours a day, until you cancel it. Such an Order is not automatically cancelled at the close of business on Friday evening either; it is reinstated on Monday morning unless you specify otherwise.

'Day' Orders

Day Orders are good until 23:00 CET time.

We support the following Orders

Market Order
Limit Order
Stop Order
OCO Order
IF DONE Order
Loop Order

2. Market Order

An order to buy or sell which is to be done at the price immediately available; the 'spot' rate, the current rates at which the market is dealing.

Example

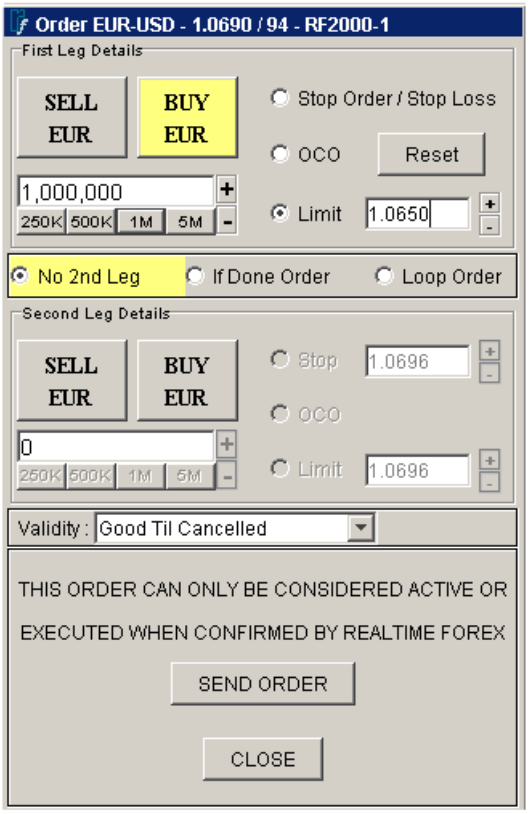
Current Spot EUR/USD is 1.0674/78 and you want to buy 1 Mio

3. Limit Order

An instruction to deal if a market moves to a more favorable level (i.e. an instruction to buy if a market goes down to a specified level, or to sell if a market goes up to a specified level) is called a Limit Order. A Limit Order is often used to take profit on an existing position but can also be used to establish a new one.

Example

EUR/USD is trading at 1.0690/94. You believe the Euro is going to strengthen, but think that EUR/USD will fall back to below 1.0650 before it goes higher. You put on a Limit Order to buy EUR/USD 1'000'000.-- at 1.0650. Your Limit Order is executed when EUR/USD is offered at 1.0650.

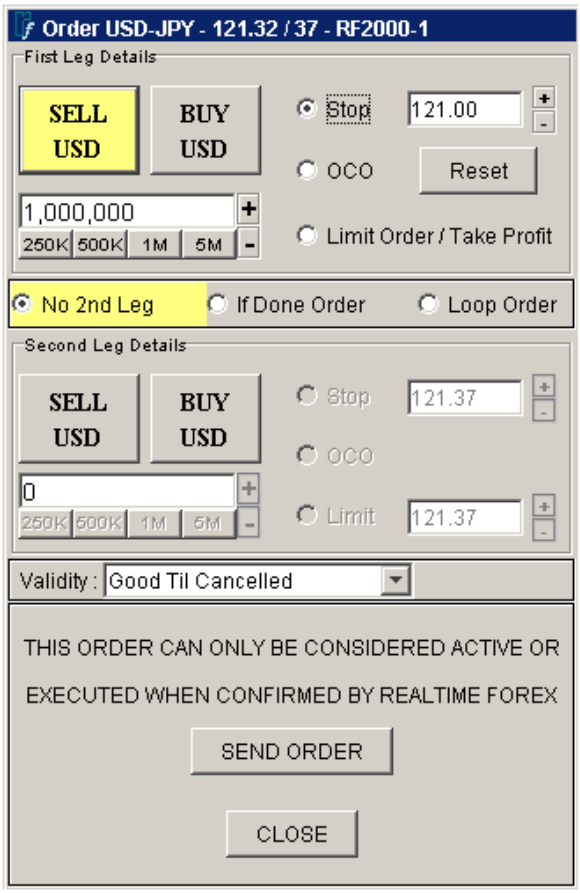


4. Stop Orders

An instruction to deal if a market moves to a less favorable level (i.e. an instruction to buy if a market goes up to a specified level, or to sell if a market goes down to a specified level) is called a Stop Order. A Stop Order is often placed to put a cap on the potential loss on an existing position; which is why Stop Orders are sometimes called Stop-loss Orders. But can be used to enter into a new position if the market breaks a certain level.

Example

If you have a long USD/JPY position, which you bought at 121.50 and you want to set a Stop Order in case USD/JPY starts to fall (to stop your loss). You could set a Stop Order to sell USD/JPY at 121.00, this order will close your position with a 50-pip loss. You Stop Order is executed when USD/JPY is 121.00 Bid.

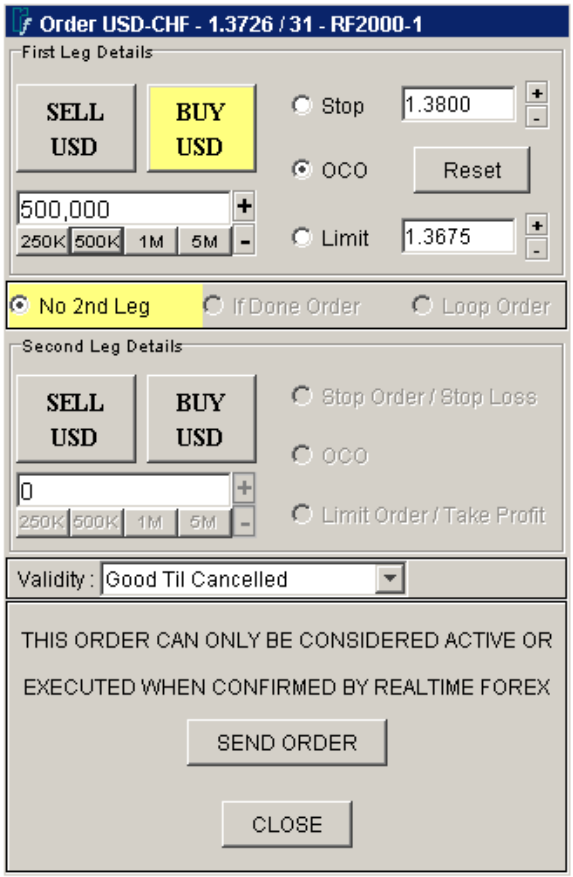


5. OCO Order - **One Cancels the Other.**

An 'OCO' ('One Cancels the Other') Order is a special type of Order where a Stop Order and a Limit Order in the same market are linked together. With an OCO Order, the execution of one of the two linked Orders results in the automatic cancellation of the other Order.

Example

You sold USD/CHF 500'000.-- at 1.3750, looking for a short-term move to 1.3675. However you decide that if USD/CHF moves above 1.3800 you want to cut out your position. You put on a Limit Order to buy USD/CHF 500'000.-- at 1.3675, and a Stop Order to buy USD/CHF 500,000.-- at 1.3800 on an OCO basis. This order will close your position with a 75-pip profit if Limit Order is reached first, or with a 50-pip loss if Stop Order is reached first.

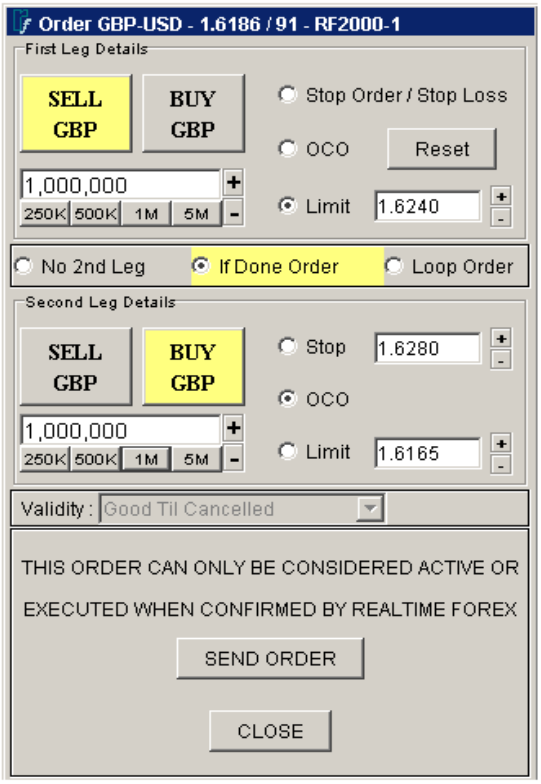


6. IF DONE Order

An IF DONE Order is a two-legged order in which the execution of the second leg can occur only after the conditions of the first leg have been satisfied. The first leg, either a Stop or a Limit, is created in an active state and the second, which can be a Stop, a Limit, or an OCO, is created in a dormant state. When the desired price is reached for the first leg, it is executed and the second leg is then activated. Let's look at one example of how an If Done Order could be used in trading the GBP/USD, as demonstrated below…

In the late night, GBP/USD is trading at 1.6190. You believe that 1.6240 is a very strong resistance level, which will not be easily broken. Furthermore, you also believe that when the 1.6240 level is first tested, there is a good chance GBP/USD will retrace at least 75 pips to approximately 1.6165, and you also believe that if 1.6280 breaks, GBP/USD could go much higher and you don't want to loose more than 40 pips on this position. The problem is, you do not know when this movement will occur. If you were able to watch the market 24 hours a day, then you might catch such a movement. However, now, you don't have to watch the screen because you can leave an order to Sell GBP/USD at 1.6240, and **if done** then to Buy back GBP/USD at 1.6175 Limit Order or 1.6280 Stop Order on OCO Basis, specifically in that sequence.

An **if done** order will only become active when the order to which it is attached is executed.

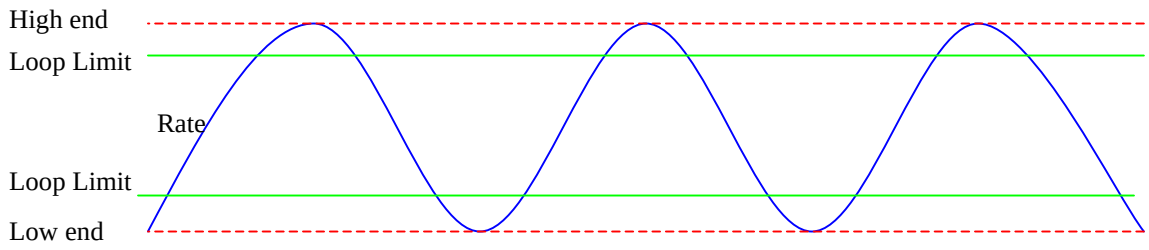


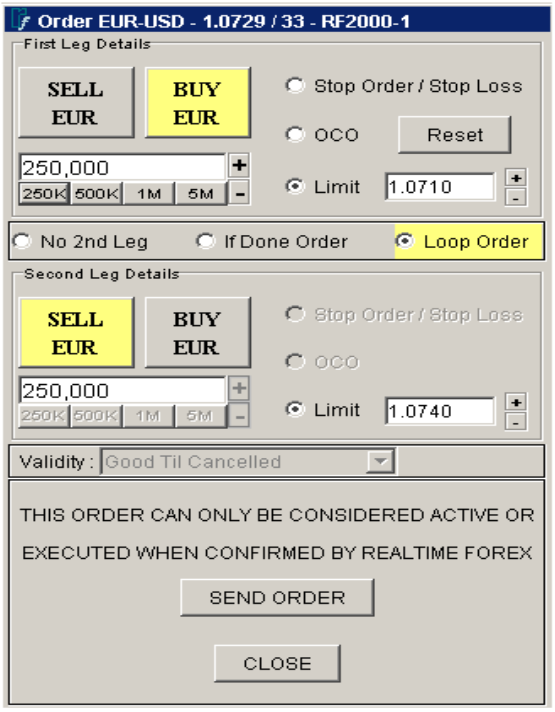
7. Loop Order

A Loop Order is a perpetual or repeating order placed in anticipation of a cyclical movement in the market. It is a pair of matching orders where the first leg is active and the second dormant. When the desired price is reached for the active order, it is executed, the dormant order becomes active, and a new order (a copy of the one just executed) is created in a dormant state. This process repeats until the order is explicitly cancelled.

Normally both legs of a Loop Order are Limit orders and they always are for the same amount.

For example, if a trader expects the rate of an instrument to fluctuate between two levels (range trading), a Loop Order placed just inside the limits of the fluctuations will produce repeated good results.

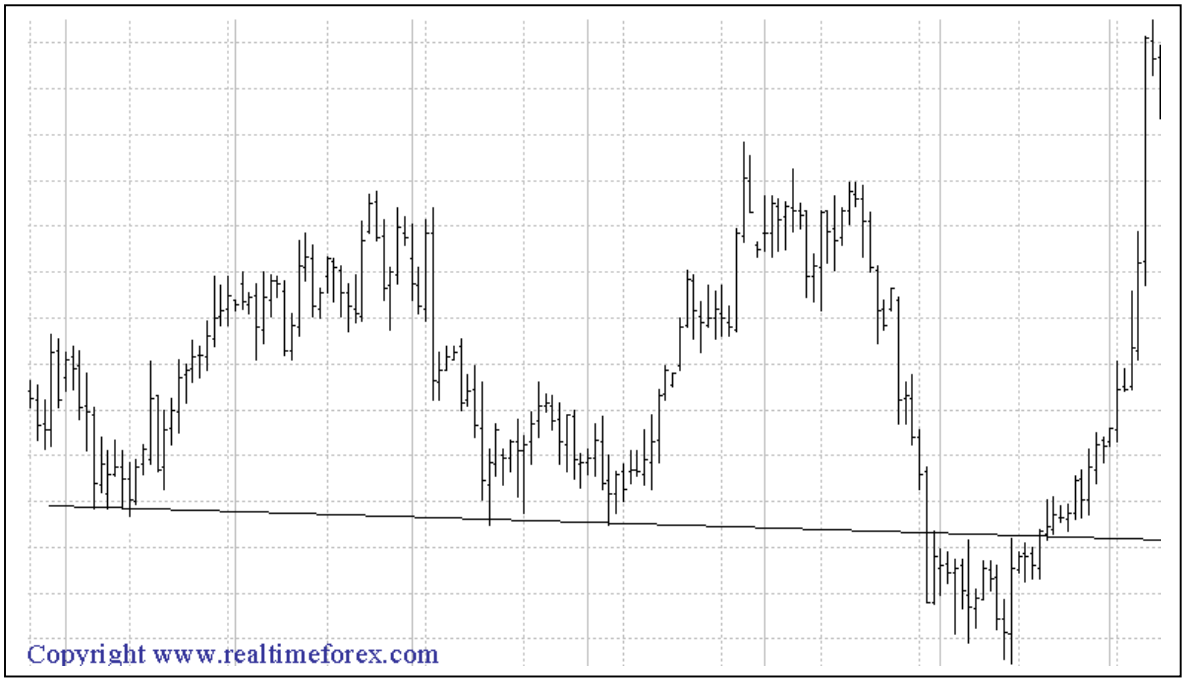




III. The Basic of Technical Analysis :

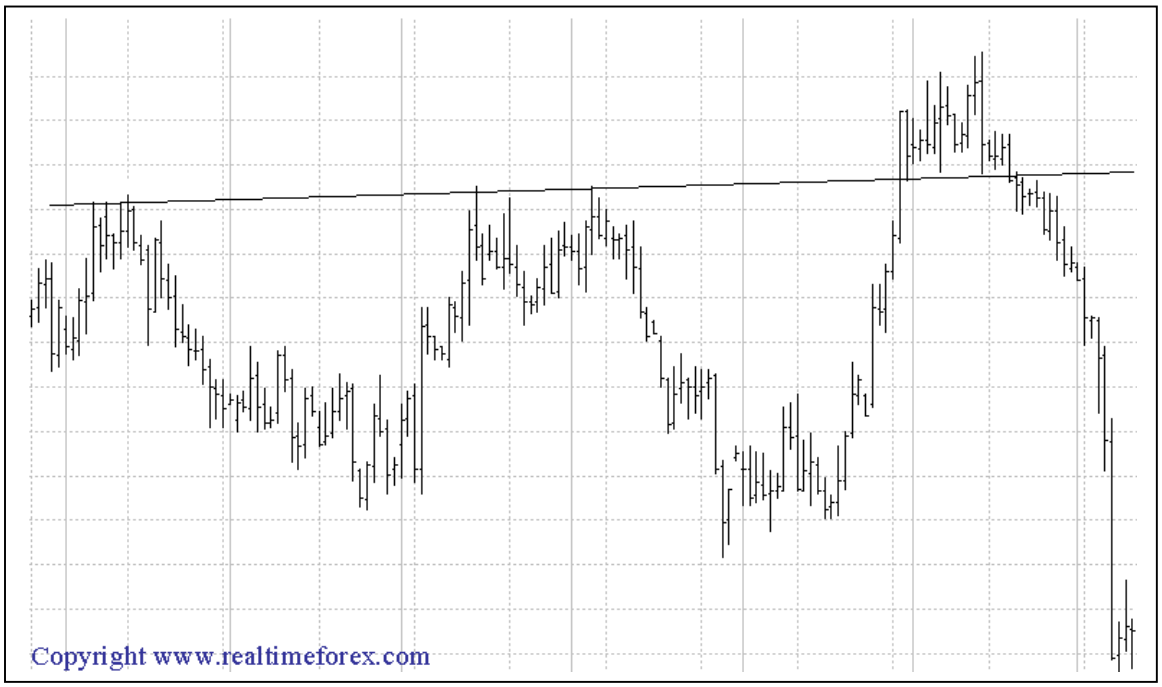
1. Support

A term used in technical analysis indicating a specific price level at which a currency will have the inability to cross below. Recurring failure for the price to move below that point produces a pattern that can usually be shaped by a straight line. A support level penetrated becomes resistance.



2. Resistance

A term used in technical analysis indicating a specific price level at which a currency will have the inability to cross above. Recurring failure for the price to move above that point produces a pattern that can usually be shaped by a straight line. A resistance level penetrated becomes support.



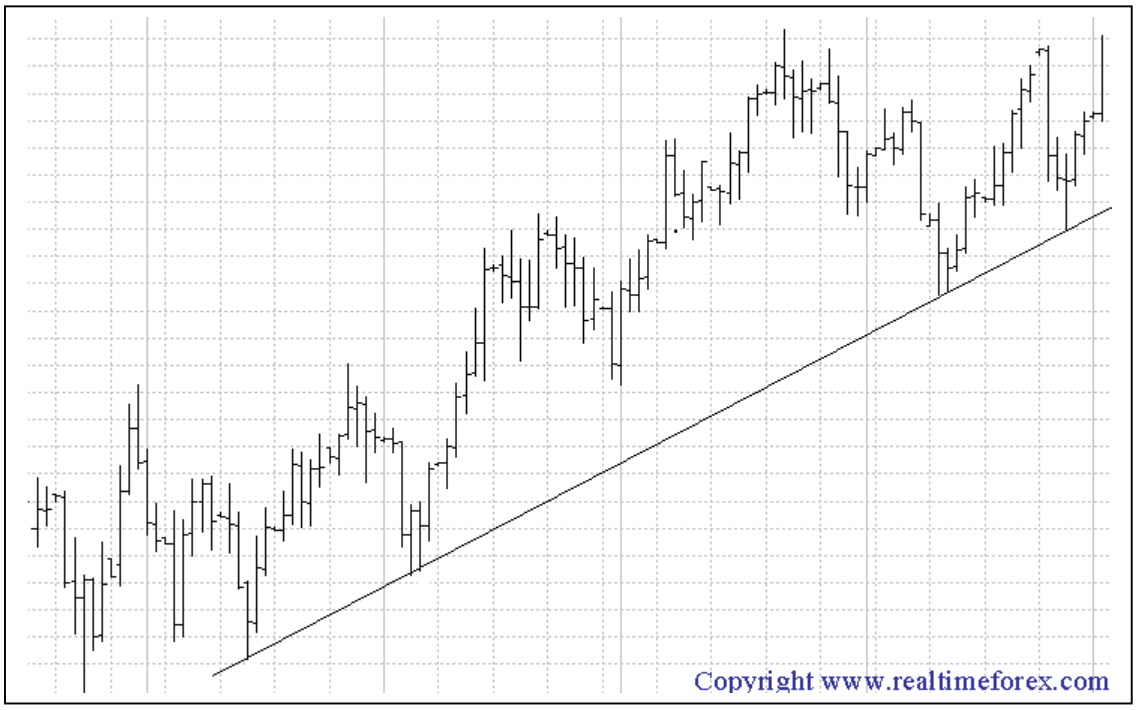
3. Trend

Trend is simply, the overall direction prices are moving, UP, DOWN, OR FLAT.

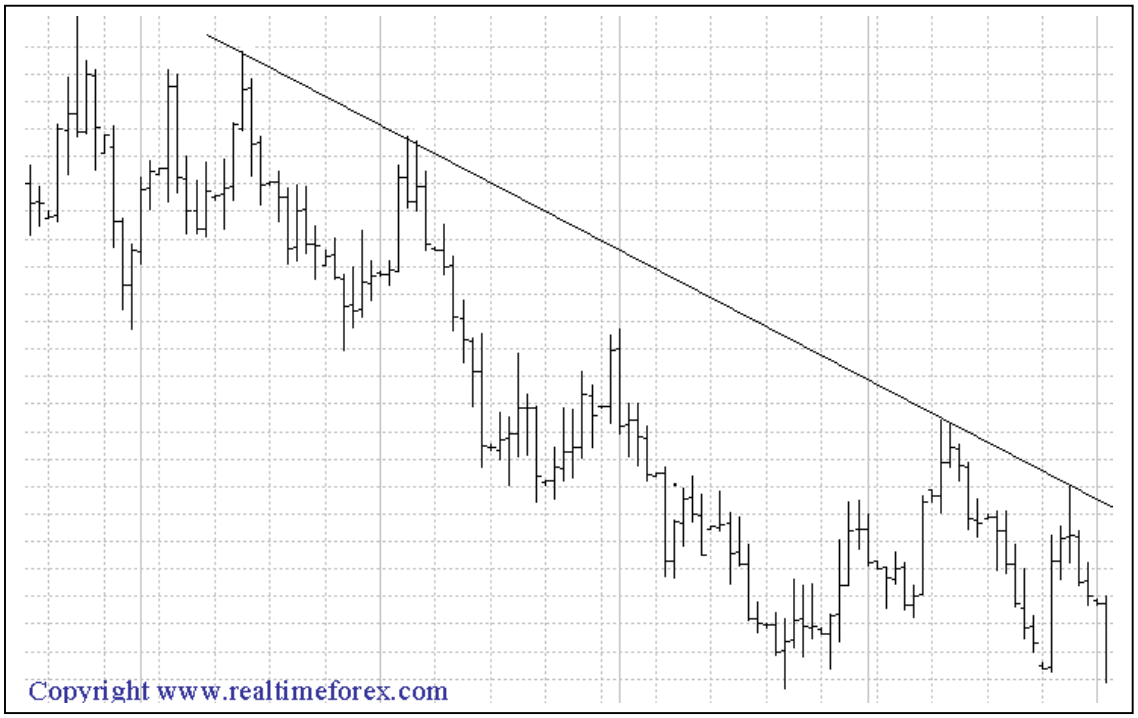
Classification :

Short term - less than 3 weeks,
Medium term - 3 weeks to 6 months
Long term (major term) - more than 6 months.

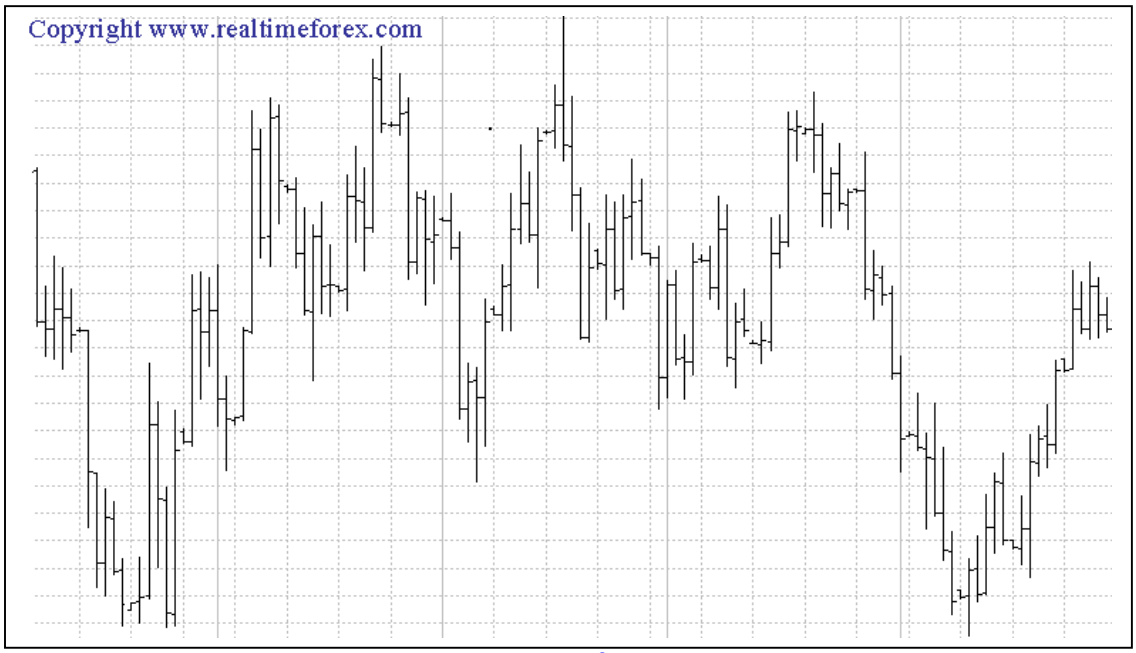
An **up-trendline** is a straight line passing through the "rising" troughs of an up-move. The importance of a trendline is increasing with every additional touching point, confirming the trendlines value. A reversal of the trend is indicated with a violation of the up-trendline.



A down-trendline is a straight line passing through he "falling" troughs of a down-move. The importance of a trendline is increasing with every additional touching point, confirming the trendlines value. A reversal of the trend is indicated with a violation of the down-trendline.

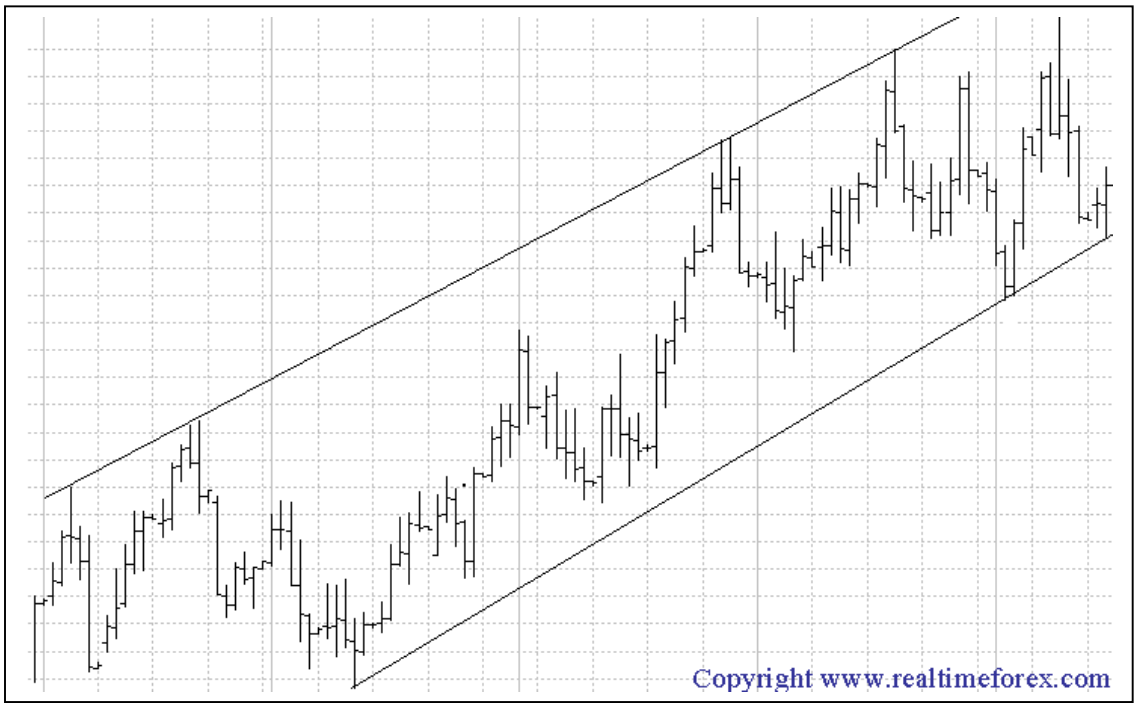


A **Neutral Trend** (No trend, Sideways trend) means there is no direction.



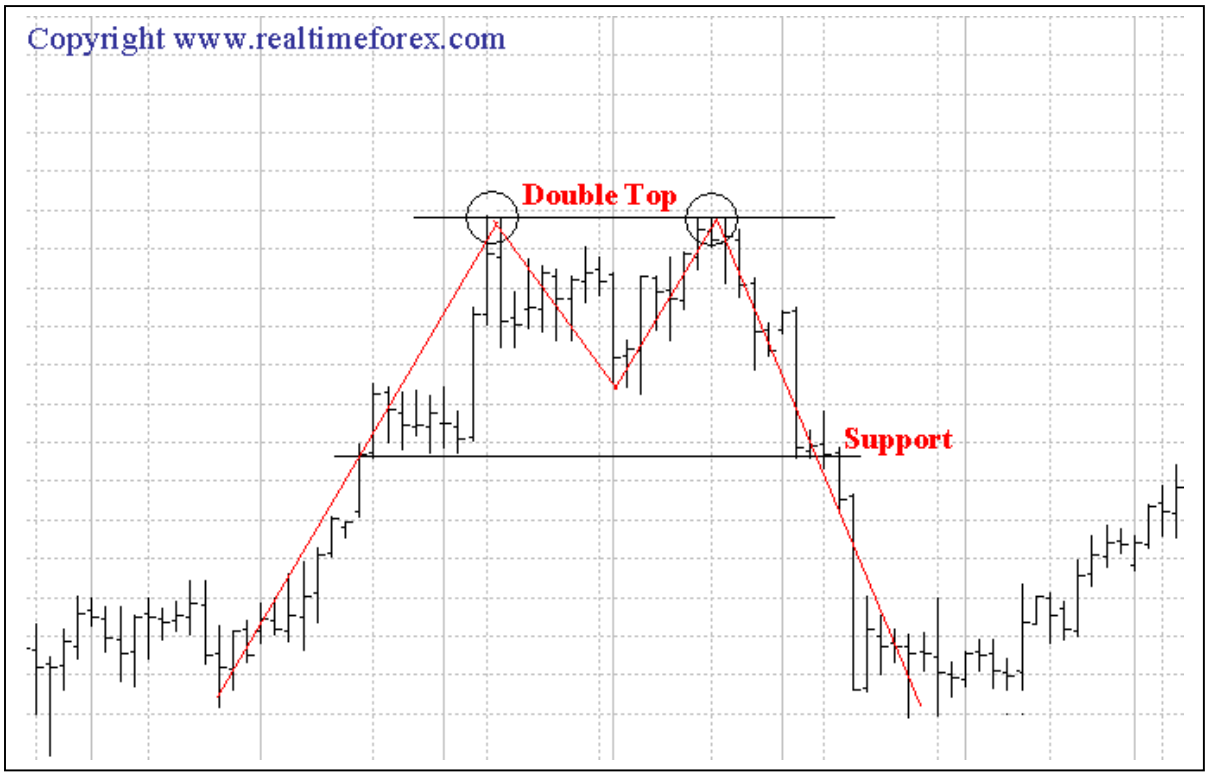
4. Channel

When prices trend between two parallel trendlines they form a Channel.
When prices hit the bottom trendline this may be used as a buying area and when prices hit the upper trendline this may be used as a selling.



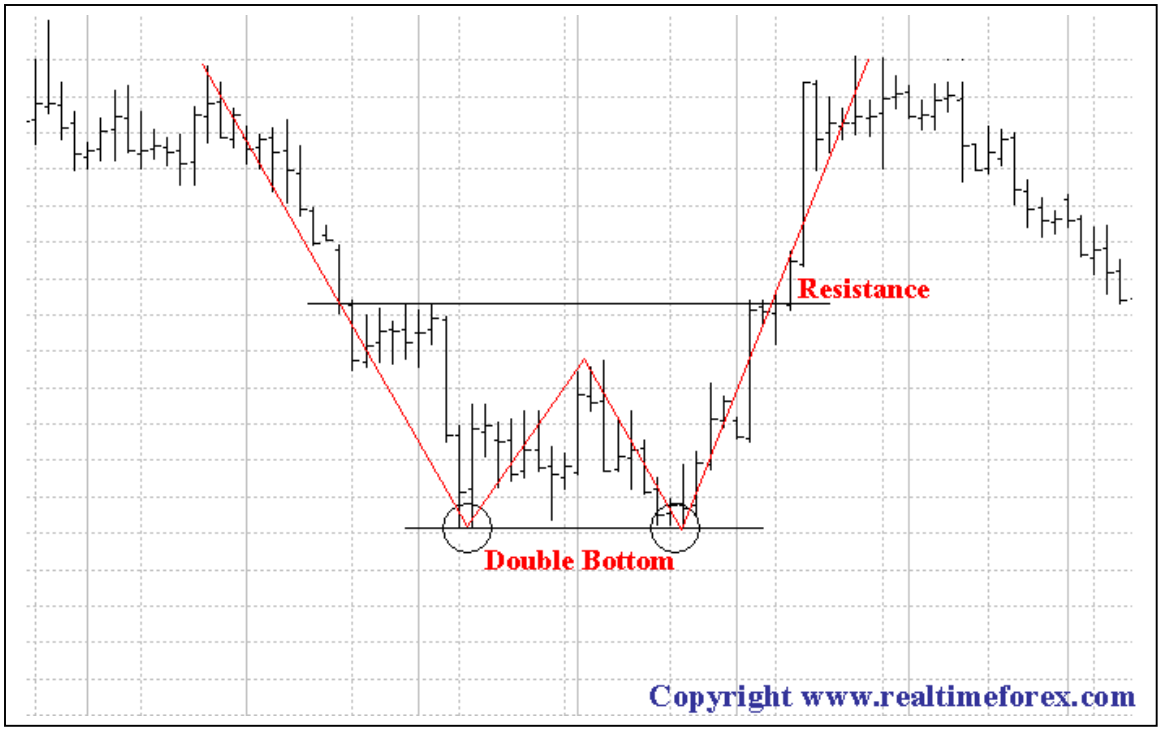
5. Double top (reversal formation)

For obvious reasons this is often called an "M-top". The market is failing twice at a resistance and is reversing then sharply. A break of the support would indicate further losses towards the target that can be evaluated through the following procedure. The vertical width of the "M" (price difference) is projected downwards from the breakpoint of the support.



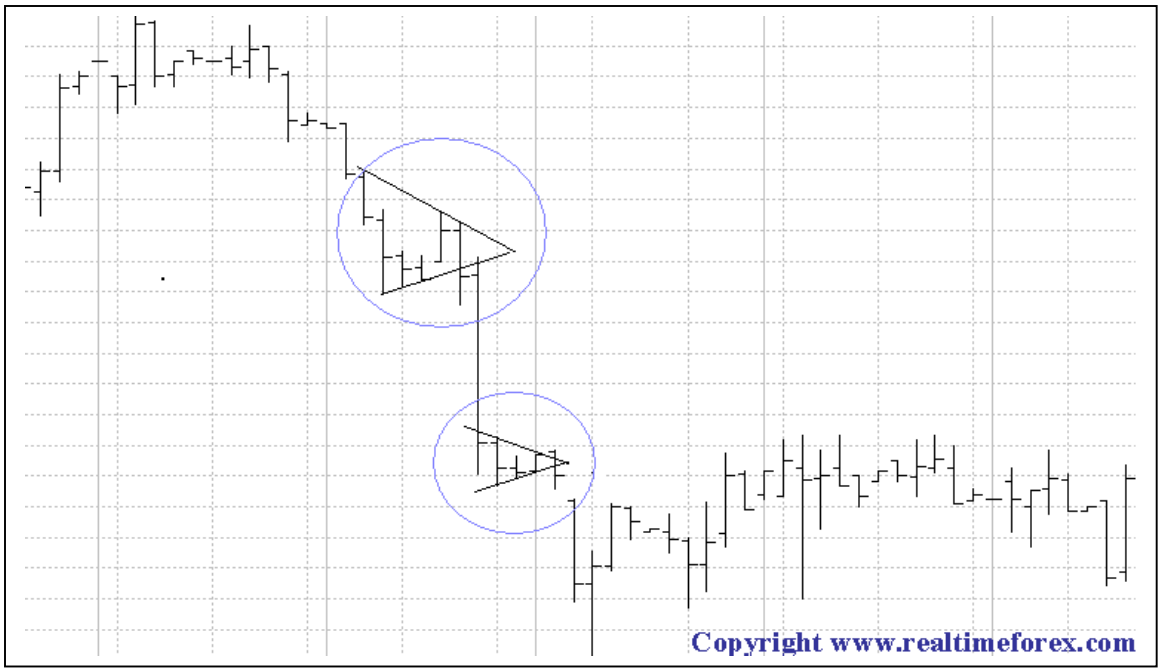
6. Double bottom (reversal formation)

The opposite of Double top. (often called an “W-top”). When the market is failing twice at a support and is reversing then sharply. A break of the resistance would indicate further rising towards the target that can be evaluated through the following procedure. The vertical width of the “W” (price difference) is projected downwards from the breakpoint of the resistance.



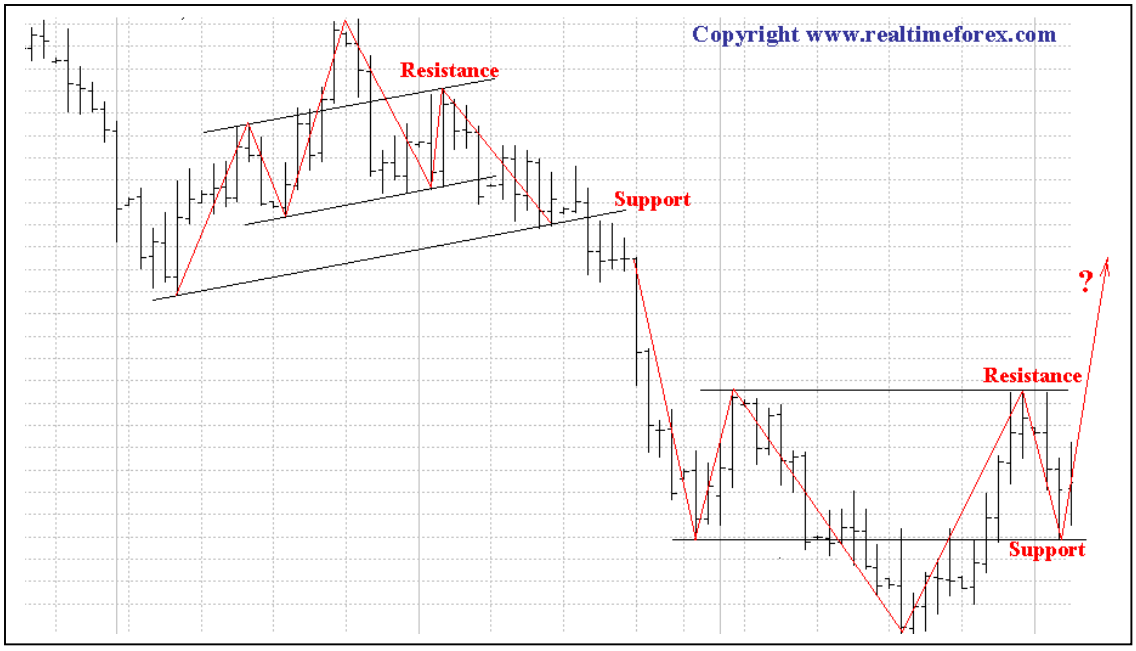
7. Triangle

The triangle formation can be quite difficult to analyse and the fact that a few different types of triangles exist doesn't make this task any easier. Furthermore a triangle is most commonly just a pause in a trend (continuation pattern) but can also terminate a trend (reversal formation).



8. Head and Shoulders

Formation of left shoulder forms a new high with a corrective dip, next rally forms higher high = head, correction from head goes below high of left shoulder and near as low of the left shoulder correction, breaching up trendline, rally of right shoulder does not breach head high, retracing half to three quarters of head correction.



9. Fibonacci

12th century monk Leonardo de Pisa, better known to his friends as Fibonacci, discovered a fascinating mathematics sequence that appears throughout nature. Beginning with a simple 1 + 1, the sum of the last two number sets that precede it creates another Fibonacci value:

1+1=2 1+2=3 2+3=5 3+5=8 5+8=13 8+13=21 13+21=34 21+34=55 etc, etc.

These numbers possess an intriguing number of interrelationships, such as the fact that any given number is approximately 1.618 times the preceding number and any given number is approximately 0.618 times the following number.

PIVOT POINTS. For reasons that remain unknown, major ratios drawn from Fibonacci numbers describe a predictable interaction between trend and countertrend movement in markets. The most important ones to remember are 38,2%, 50% and 61,8%. Applying these percentages to trending price predicts the extent of retracement contrary to the underlying trend, as well as how far a new high or low will travel. For traders, these hidden points represent invisible support/resistance zones where prices will hesitate and/or reverse.

Most markets (and stocks) swing off Fibonacci ratios as they move from support to resistance and back.
Fibonacci retracement works as well on intraday charts as it does on weekly and monthly ones.
Fibonacci Retracements are displayed by first drawing a trend line between two extreme points, for example, a trough and opposing peak. The retracement tool then automatically inserts a series of three horizontal lines intersecting the trend line at the Fibonacci levels of 38.2%, 50%, 61.8%.
After a significant price move (either up or down), prices will often retrace a significant portion (if not all) of the original move. As prices retrace, support and resistance levels often occur at or near the Fibonacci retracement levels.

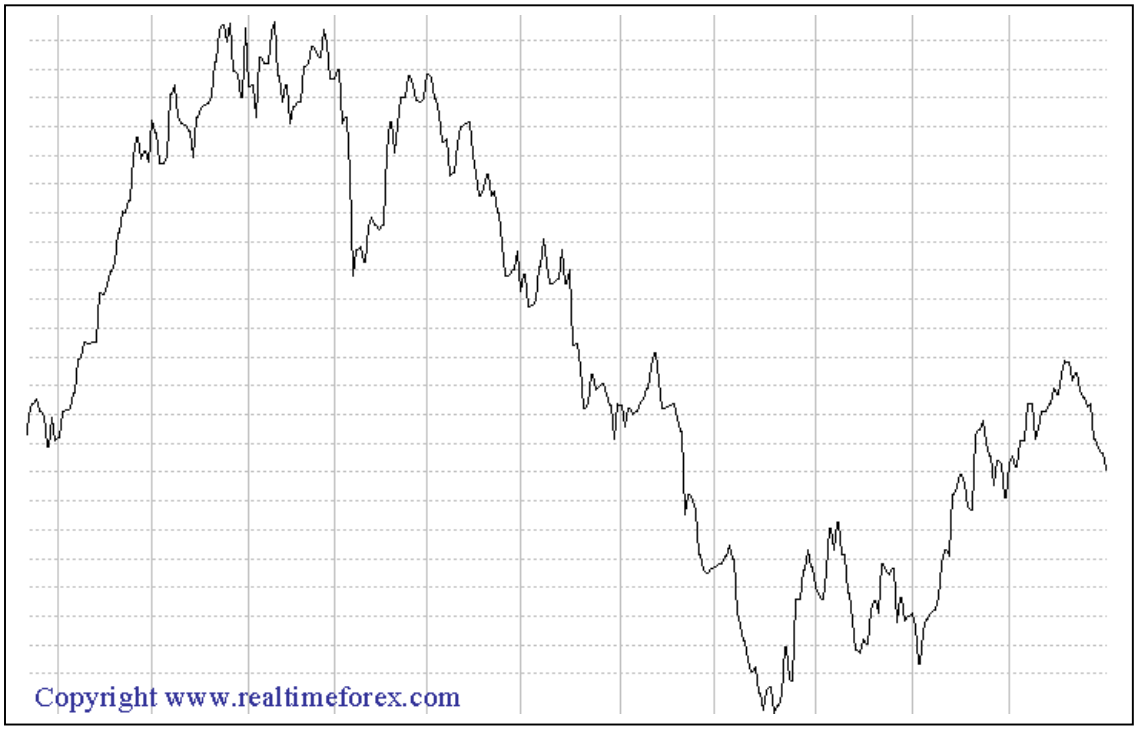
IV. Types of Chart

1. Introduction

A chart is a graphical representation of price movement over a specific period of time and is composed of an x-axis (time) and a y-axis (price). The choice of the time frame employed depends on the user's need. It is obvious that an intra-day scenario will not be based on a monthly chart.

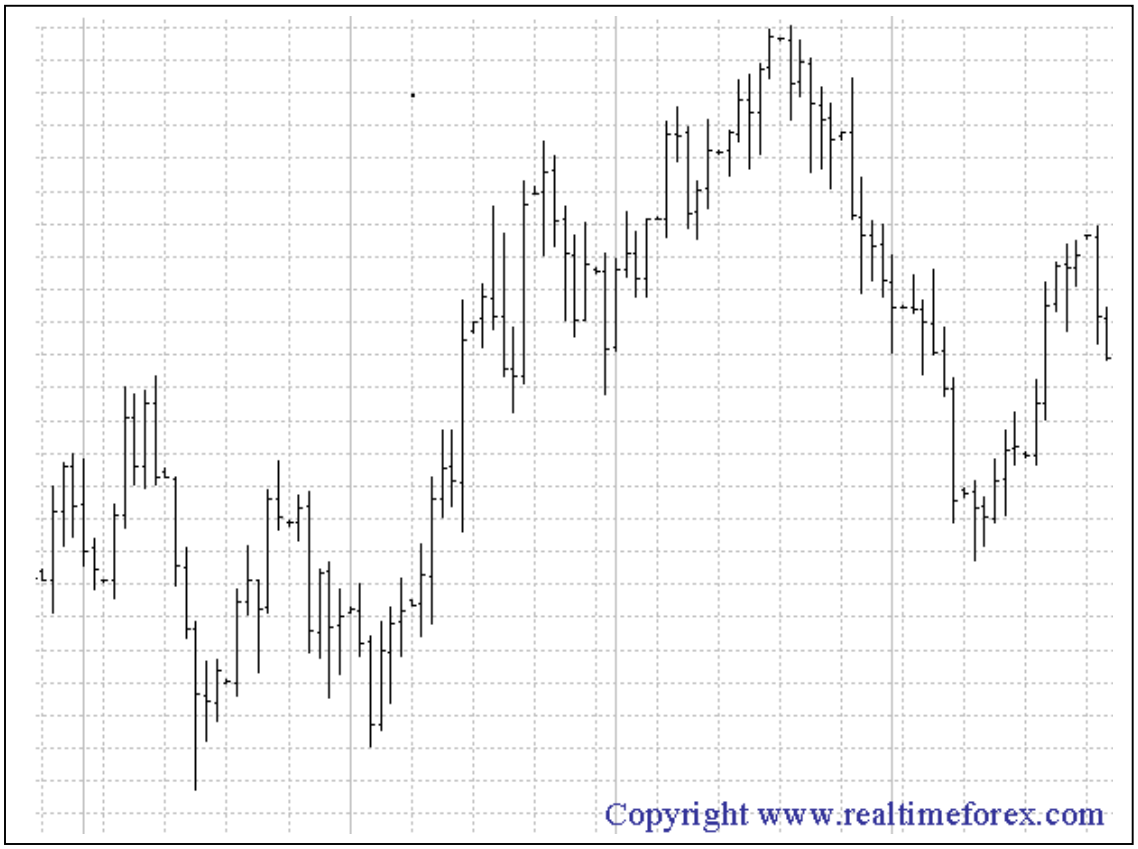
2. Line Chart

A line chart shows a line connecting the "closing prices". The closing is the last price recorded at the end of a specific period of time (session).



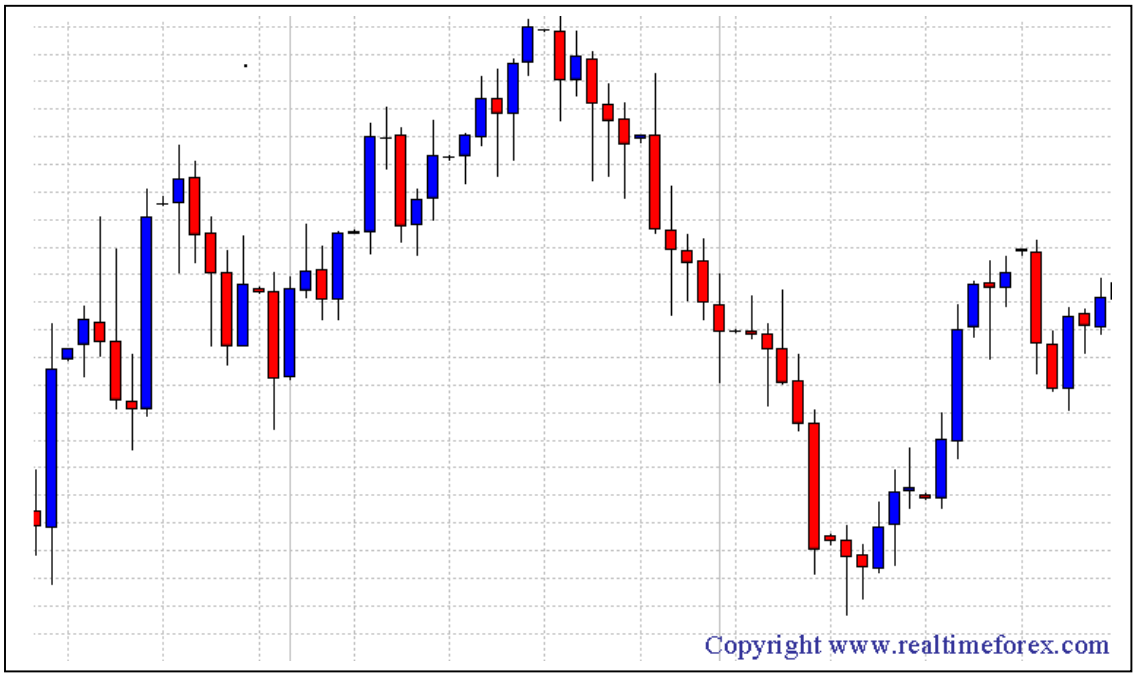
3. Bar Chart

Bar chart: Basically all characteristics mentioned for the line chart also hold true for the bar chart. However, the construction is a different one. The bar chart is composed of a high (highest price during a session), a low (lowest price during a session) and the close. All that is required is to draw a vertical line (bar) from the high to the low. Then, set a horizontal dot from the vertical line to the right, representing the close. Sometimes users refer also to the opening price; a dot drawn on the left side of the bar. The bar chart is probably the most popular chart in use today.



4. Candlestick Chart

The building blocks for the candlestick chart are the high, the low, the opening and the closing. The difference to the bar chart is that the open and the close form the cornerstones for the, so called, real body. The body is white if the closing is higher than the opening. The contrary is true for the black body. The candlestick charting technique is an ancient Japanese invention dating from the late 18th century. The theory tries to unveil trend reversal or continuation signals. Various tools of analysis (moving average, RSI, trend-lines etc.) can be applied in combination with the candlesticks.



V. Candlestick

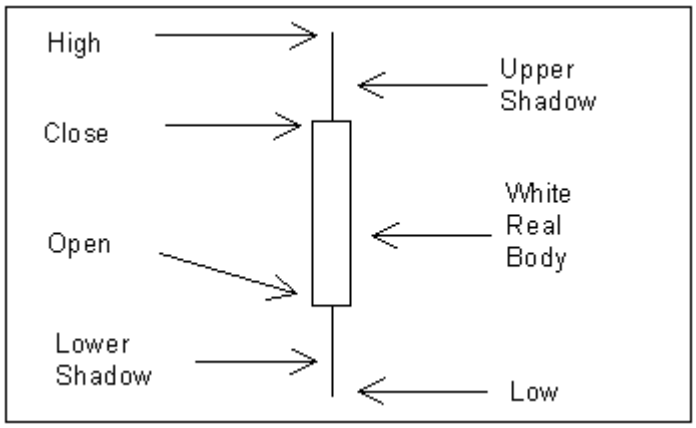
1. Introduction

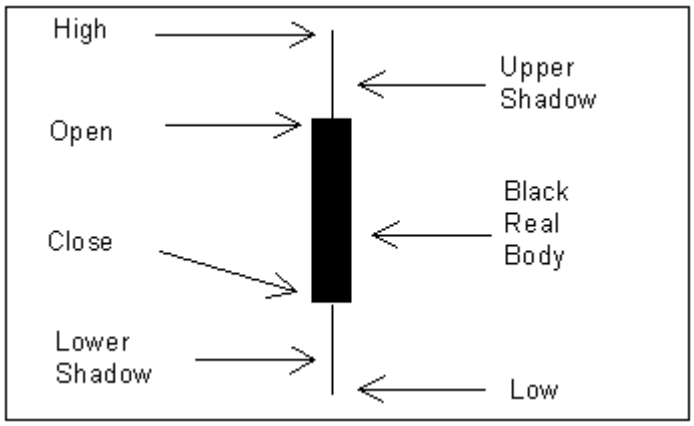
You may be asking yourself, "If I can already use bar charts to view prices, then why do I need another type of chart?"
The answer to this question may not seem obvious, but after going through the following candlestick chart explanations and examples, you will surely see value in the different perspective candlesticks bring to the table. In my opinion, they are much more visually appealing, and convey the price information in a quicker and easier manner.

The Japanese began using technical analysis to trade rice in the 17th century. While this early version of technical analysis may have been different from the US version initiated by Charles Dow around 1900, many of the guiding principles were very similar.

The "what" (price action) is more important than the "why" (news, earnings, and so on).
All known information is reflected in the price.
Buyers and sellers move markets based on expectations and emotions (fear and greed).
Markets fluctuate.
The actual price may not reflect the underlying value.

According to Steve Nison, candlestick charting came later and probably began sometime after 1850. Much of the credit for candlestick development and charting goes to Homma, a legendary rice trader from Sakata. Even though it is not exactly clear "who" created candlesticks, Nison notes that they likely resulted from a collective effort developed over many years of trading.

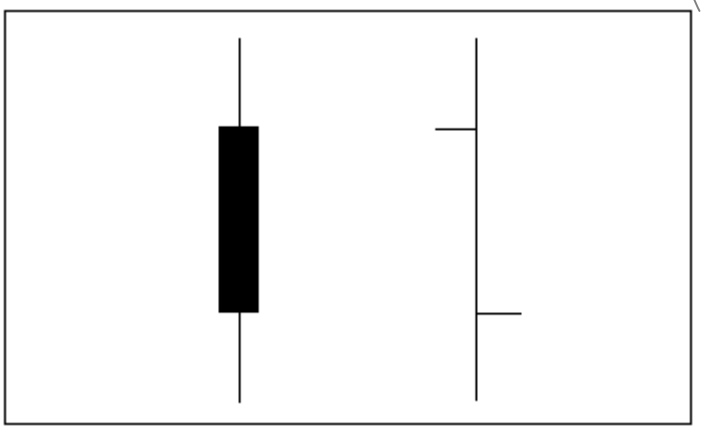




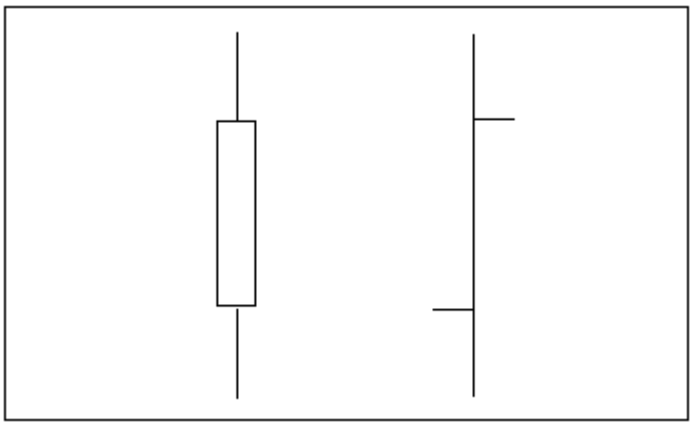
The body of the candlestick is called the *real body*, and represents the range between the open and closing prices.
A black or filled-in body represents that the close during that time period was lower than the open, (normally considered bearish) and when the body is open or white, that means the close was higher than the open (normally bullish).
The thin vertical line above and/or below the real body is called the *upper/lower shadow*, representing the high/low price extremes for the period.

Bar Compared to Candlestick Charts

Below is an example of the same price data conveyed in a standard bar chart and a candlestick chart. Notice how the candlestick chart appears 3-dimensional, as price data almost jumps out at you.



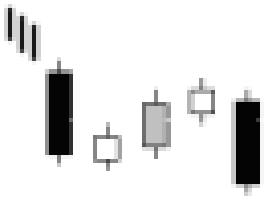
(3a)



(3b)

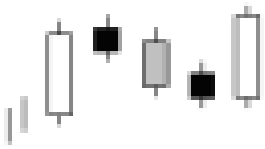
The long, dark, filled-in *real body* represents a weak (bearish) close (3a), while a long open, light-colored *real body* represents a strong (bullish) close (3b). It is important to note that Japanese candlestick analysts traditionally view the opening and closing prices as the most moment critical of the day. At a glance, notice how much easier it is with candlesticks to determine if the closing price was higher or lower than the opening price.

2. Falling Three Methods



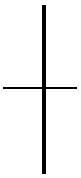
A bearish continuation pattern. A long black body is followed by three small body days, each fully contained within the range of the high and low of the first day. The fifth day closes at a new low.

3. Rising Three Methods



A bullish continuation pattern. A long white body is followed by three small body days, each fully contained within the range of the high and low of the first day. The fifth day closes at a new high..

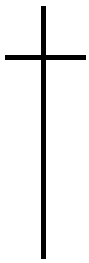
4. Doji



Doji are important candlesticks that provide information on their own and also feature in a number of important patterns. Doji form when a security's open and close are virtually equal. The length of the upper and lower shadows can vary and the resulting candlestick looks like a cross, inverted cross or plus sign. Alone, doji are neutral patterns. Any bullish or bearish bias is based on preceding price action and future confirmation. The word "Doji" refers to both the singular and plural form.

a. Dragon fly doji (Dragongly)

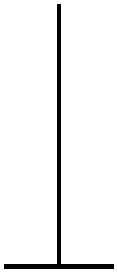
Dragon fly doji form when the open, high and close are equal and the low creates a long lower shadow. The resulting candlestick looks like a ″T″ with a long lower shadow and no upper shadow.



Dragon fly doji indicate that sellers dominated trading and drove prices lower during the session. By the end of the session, buyers resurfaced and pushed prices back to the opening level and the session high.
The reversal implications of a dragon fly doji depend on previous price action and future confirmation. The long lower shadow provides evidence of buying pressure, but the low indicates that plenty of sellers still loom. After a long downtrend, long black candlestick or at support, a dragon fly doji could signal a potential bullish reversal or bottom. After a long uptrend, long white candlestick or at resistance, the long lower shadow could foreshadow a potential bearish reversal or top. Bearish or bullish confirmation is required for both situations.

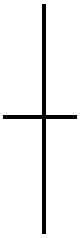
b. Gravestone doji (Pagoda

Gravestone doji form when the open, low and close are equal and the high creates a long upper shadow. The resulting candlestick looks like an upside down "T" with a long upper shadow and no lower shadow.



Gravestone doji indicate that buyers dominated trading and drove prices higher during the session. However, by the end of the session, sellers resurfaced and pushed prices back to the opening level and the session low.
As with the dragon fly doji and other candlesticks, the reversal implications of gravestone doji depend on previous price action and future confirmation. Even though the long upper shadow indicates a failed rally, the intraday high provides evidence of some buying pressure. After a long downtrend, long black candlestick or at support, focus turns to the evidence of buying pressure and a potential bullish reversal. After a long uptrend, long white candlestick or at resistance, focus turns to the failed rally and a potential bearish reversal. Bearish or bullish confirmation is required for both situations.

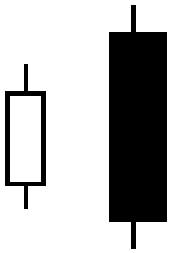
c. Long-legged doji



This line often signifies a turning point. It occurs when the open and close are the same, and the range between the high and low is relatively large.

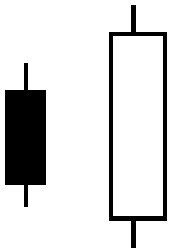
5. Engulfing Patterns

a. Bearish engulfing lines



This structure appears when a black, real body totally covers, "engulfs" the prior day's real body. The market should be in a definable trend, not chopping around sideways. The shadows of the prior candlestick do not need to be engulfed.

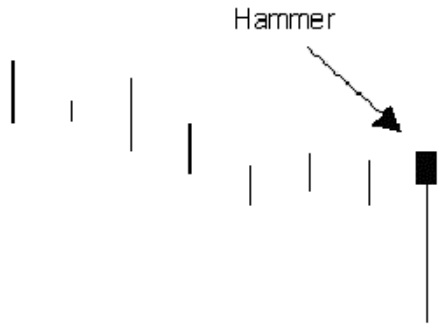
b. Bullish engulfing lines



This structure appears when a *white, real body* totally covers, "engulfs" the prior day's *real body*. The market should be in a definable trend, not chopping around sideways. The shadows of the prior candlestick do not need to be engulfed.

6. Hammer

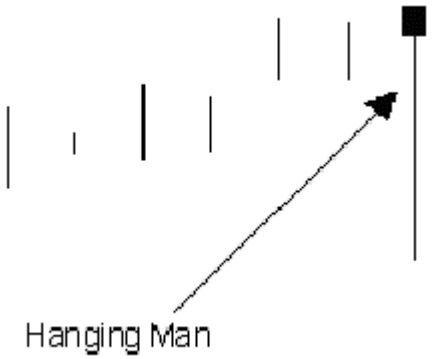
A candlestick with a long *lower shadow* and small *real body*. The *shadow* should be at least twice the length of the *real body*, and there should be no or very little *upper shadow*. The *body* may be either *black* or *white*, but the key is that this candlestick must occur within the context of a downtrend to be considered a *hammer*. The market may be "hammering" out a bottom.



The hammer is a bullish reversal pattern that forms after a decline. In addition to a potential trend reversal, hammers can mark bottoms or support levels. After a decline, hammers signal a bullish revival. The low of the long lower shadow implies that sellers drove prices lower during the session. However, the strong finish indicates that buyers regained their footing to end the session on a strong note. While this may seem enough to act on, hammers require further bullish confirmation. The low of the hammer shows that plenty of sellers remain. Further buying pressure, and preferably on expanding volume, is needed before acting. Such confirmation could come from a gap up or long white candlestick. Hammers are similar to selling climaxes and heavy volume can serve to reinforce the validity of the reversal.

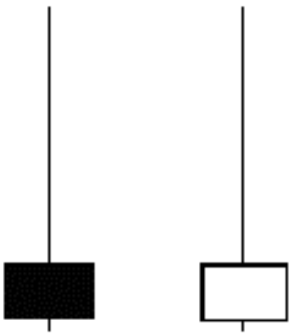
a. Hanging man

identical in appearance to the *hammer*, but appears within the context of an uptrend.



The hanging man is a bearish reversal pattern that can also mark a top or resistance level. Forming after an advance, a hanging man signals that selling pressure is starting to increase. The low of the long lower shadow confirms that sellers pushed prices lower during the session. Even though the bulls regained their footing and drove prices higher by the finish, the appearance of selling pressure raises the yellow flag. As with the hammer, a hanging man requires bearish confirmation before action. Such confirmation can come as a gap down or long black candlestick on heavy volume.

b. Inverted hammer and shooting star



The inverted hammer and shooting star look exactly alike, but have different implications based on previous price action. Both candlesticks have small real bodies (black or white), long upper shadows and small or non-existent lower shadows. These candlesticks mark potential trend reversals, but require confirmation before action.

The shooting star is a bearish reversal pattern that forms after an advance and in the star position, hence its name. A shooting star can mark a potential trend reversal or resistance level. The candlestick forms when prices gap higher on the open, advance during the session and close well off their highs. The resulting candlestick has a long upper shadow and small black or white body. After a large advance (the upper shadow), the ability of the bears to force prices down raises the yellow flag. To indicate a substantial reversal, the upper shadow should relatively long and at least 2 times the length of the body. Bearish confirmation is required after the shooting star and can take the form of a gap down or long black candlestick on heavy volume.

The inverted hammer looks exactly like a shooting star, but forms after a decline or downtrend. Inverted hammers represent a potential trend reversal or support levels. After a decline, the long upper shadow indicates buying pressure during the session. However, the bulls were not able to sustain this buying pressure and prices closed well off of their highs to create the long upper shadow. Because of this failure, bullish confirmation is required before action. An inverted hammer followed by a gap up or long white candlestick with heavy volume could act as bullish confirmation.

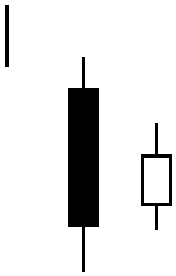
7. Harami

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.

a. Bearish Harami

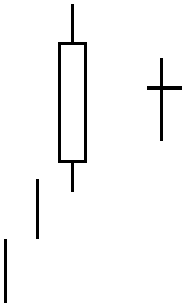
A two day pattern that has a small body day completely contained within the range of the previous body, and is the opposite color.

b. Bullish Harami



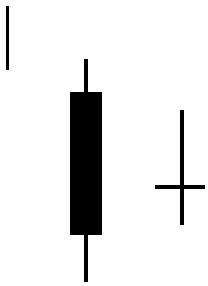
A two day pattern that has a small body day completely contained within the range of the previous body, and is the opposite color.

c. Bearish Harami cross or Bearish Harami doji



A two day pattern similar to the Harami. The difference is that the last day is a Doji.

d. Bullish Harami cross or Bullish Harami doji



A two day pattern similar to the Harami. The difference is that the last day is a Doji.

8. Long white (empty) line

This is a bullish line. It occurs when prices open near the low and close significantly higher near the period's high.

9. Long black (filled-in) line

This is a bearish line. It occurs when prices open near the high and close significantly lower near the period's low.

10. Doji

Doji are important candlesticks that provide information on their own and also feature in a number of important patterns. Doji form when a security's open and close are virtually equal. The length of the upper and lower shadows can vary and the resulting candlestick looks like a cross, inverted cross or plus sign. Alone, doji are neutral patterns. Any bullish or bearish bias is based on preceding price action and future confirmation. The word "Doji" refers to both the singular and plural form.

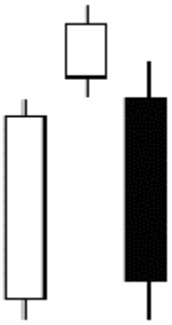
a. Bullish doji star

A "star" indicates a reversal and a doji indicates indecision. Thus, this pattern usually indicates a reversal following an indecisive period. You should wait for a confirmation (e.g., as in the morning star,) before trading a doji star. The first line can be empty or filled in.

b. Bearish doji star

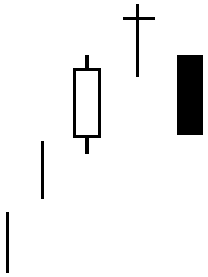
A star indicates a reversal and a doji indicates indecision. Thus, this pattern usually indicates a reversal following an indecisive period. You should wait for a confirmation (e.g., as in the evening star illustration) before trading a doji star. The first line can be empty or filled in.

c. Evening star



This a bearish top reversal pattern and counterpart to the Morning Star. Three candlesticks compose the evening star, the first being long and white. The second forms a star, followed by the third, which has a black real body that moves sharply into the first white candlestick.

d. Evening Doji star

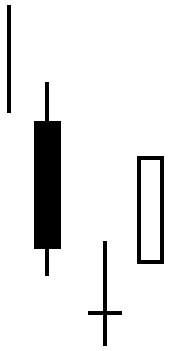


This is a doji star in an uptrend followed by a long, black real body that closed well into the prior white real body. If the candlestick after the doji star is white and gapped higher, the bearishness of the doji is invalidated.

e. Morning Star

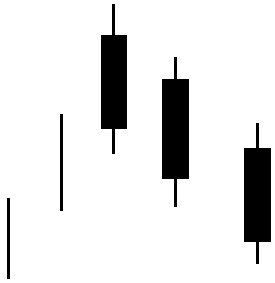
This is a bullish bottom reversal pattern. The formation is comprised of 3 candlesticks. The first candlestick is a tall black real body followed by the second, a small real body, which gaps (opens), lower (a star pattern). The third candlestick is a white real body that moves well into the first period's black real body. This is similar to an island pattern on standard bar charts.

f. Morning Doji star



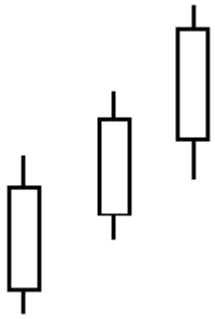
This a doji star in a downtrend followed by a long, white real body that closes well into the prior black real body. If the candlestick after the doji star is black and gapped lower, the bullishness of the doji is invalidated.

11. Three Black Crows



A bearish reversal pattern consisting of three consecutive black bodies where each day closes near below the previous low, and opens within the body of the previous day.

12. Three White Soldiers



A bullish reversal pattern consisting of three consecutive white bodies, each with a higher close. Each should open within the previous body and the close should be near the high of the day.

VI. Technical Indicators

1. Average True Range – ATR

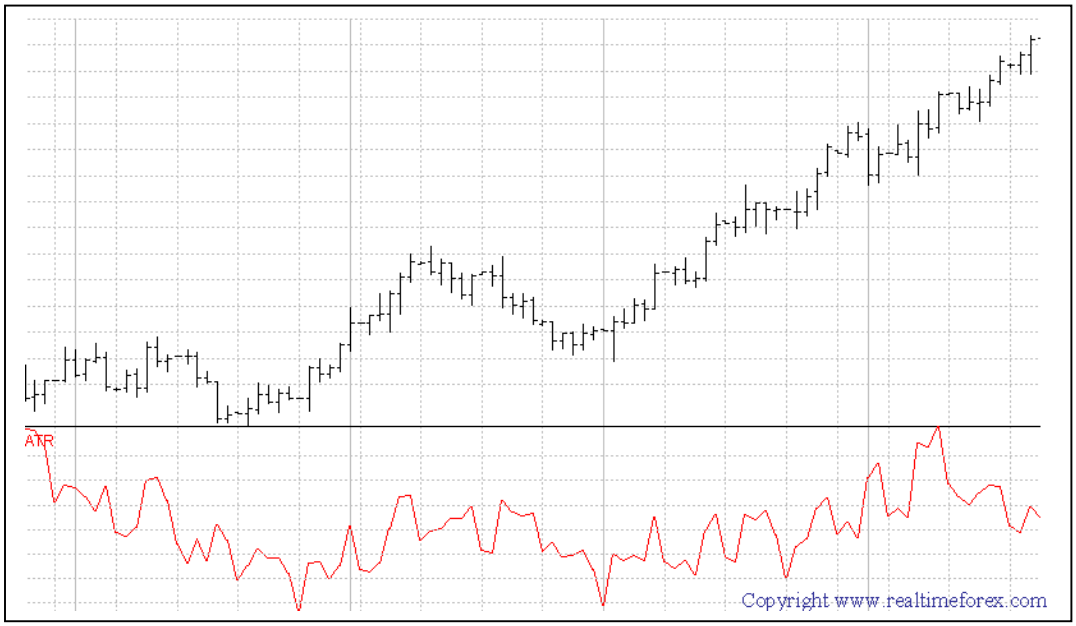
A measure of volatility introduced by Welles Wilder in his book: "New Concepts in Technical Trading Systems."

The True Range indicator is the greatest of the following:

- current high less the current low.
- The absolute value of the current high less the previous close.
- The absolute value of the current low less the previous close.

The Average True Range is a moving average (generally 14-days) of the True Ranges.

Wilder originally developed the ATR for commodities but the indicator can also be used for Forex. Simply put, a currency experiencing a high level of volatility will have a higher.



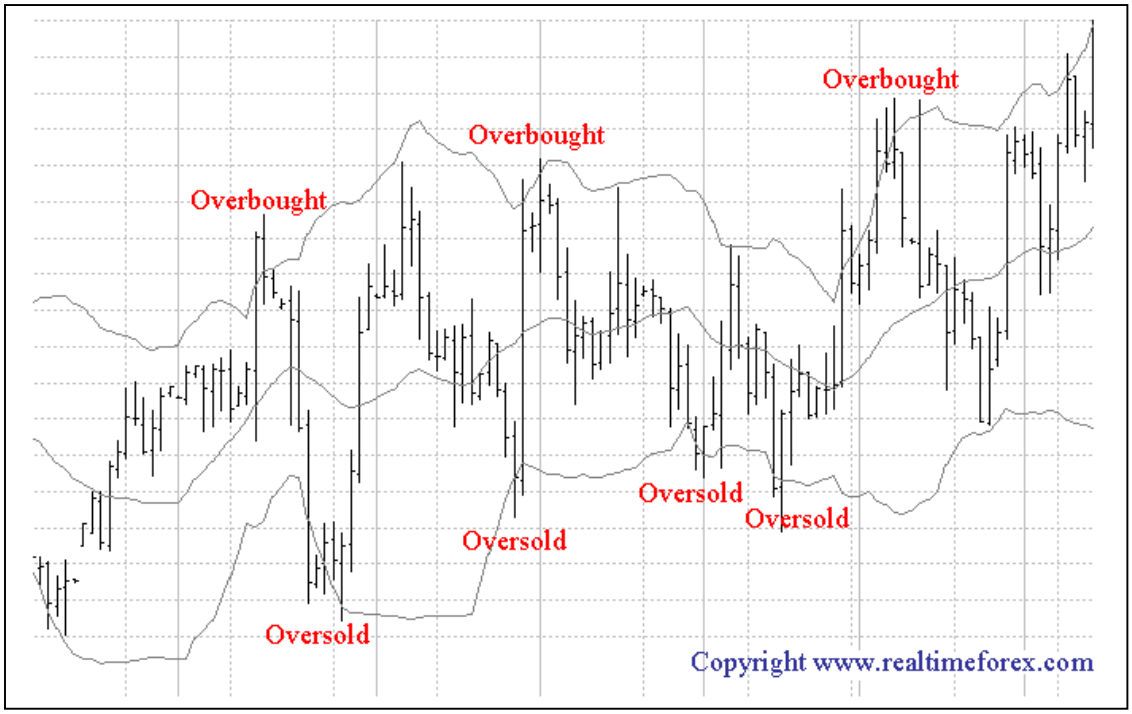
2. BOLLINGER BAND

Developed by John Bollinger, Bollinger Bands are charted by calculating a simple moving average of price, then creating two bands a specified number of standard deviations above and below the moving average. You can draw the simple moving average analysis on the same chart as the Bollinger Bands analysis, using the same interval. In addition, Bollinger Bands are usually plotted with a bar analysis so that the proximity of the bands to the prices can be easily observed.

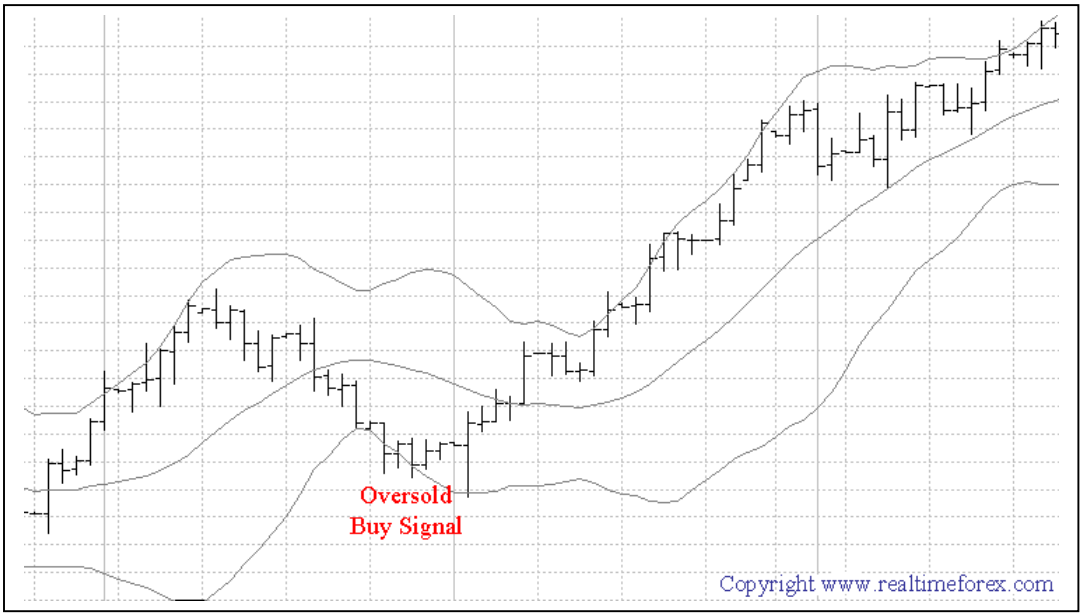
The most common uses of Bollinger Bands are to:

- *Identify overbought and oversold markets*

An overbought or oversold market is one where the prices have risen or fallen too far and are therefore likely to retrace. Prices near the lower band signal an oversold market and prices near the upper band signal an overbought market.
Overbought and oversold signals are most reliable in a non-trending market where prices are making a series of equal highs and lows.

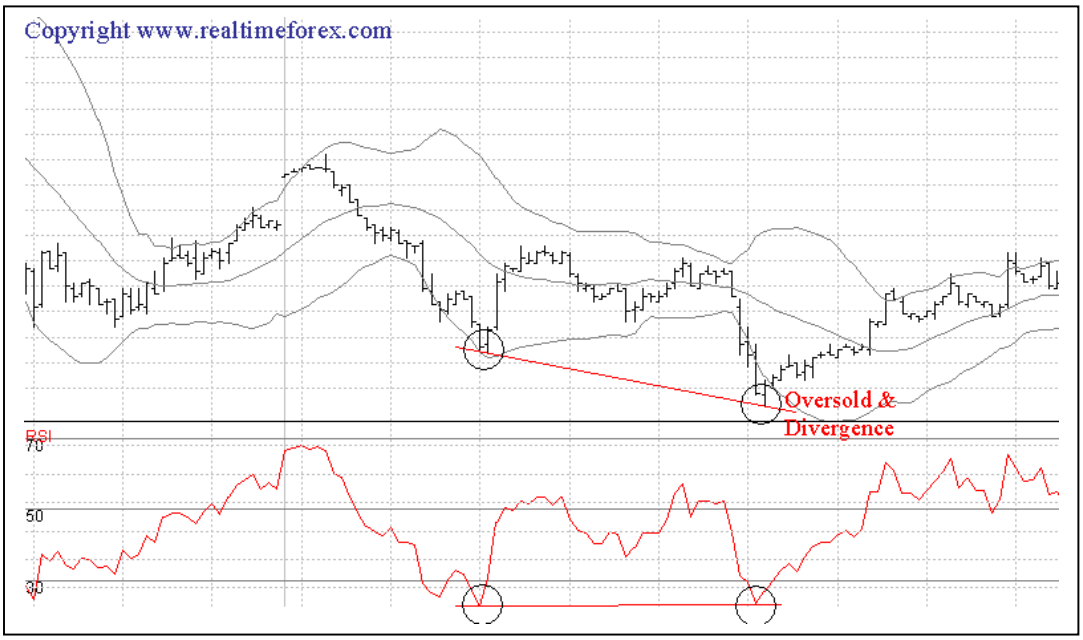


If the market is trending, then signals in the direction of the trend are likely to be more reliable. For example if prices are in an up trend, a safer trade entry may be obtained by waiting for prices to pullback giving an oversold signal and then turn up again.



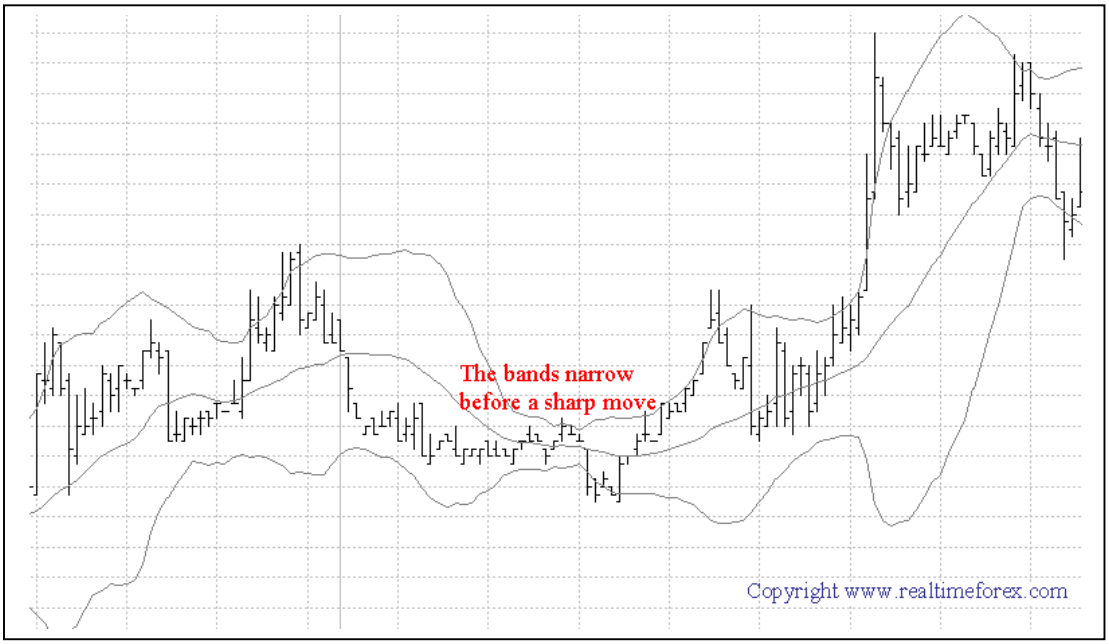
- Used in combination with an oscillator, generate buy or sell signals

If you use Bollinger Bands in combination with an oscillator such as Relative Strength Index (RSI), buy and sell signals are generated when the Bollinger Bands signal an overbought/oversold market at the same time the oscillator signals a divergence.



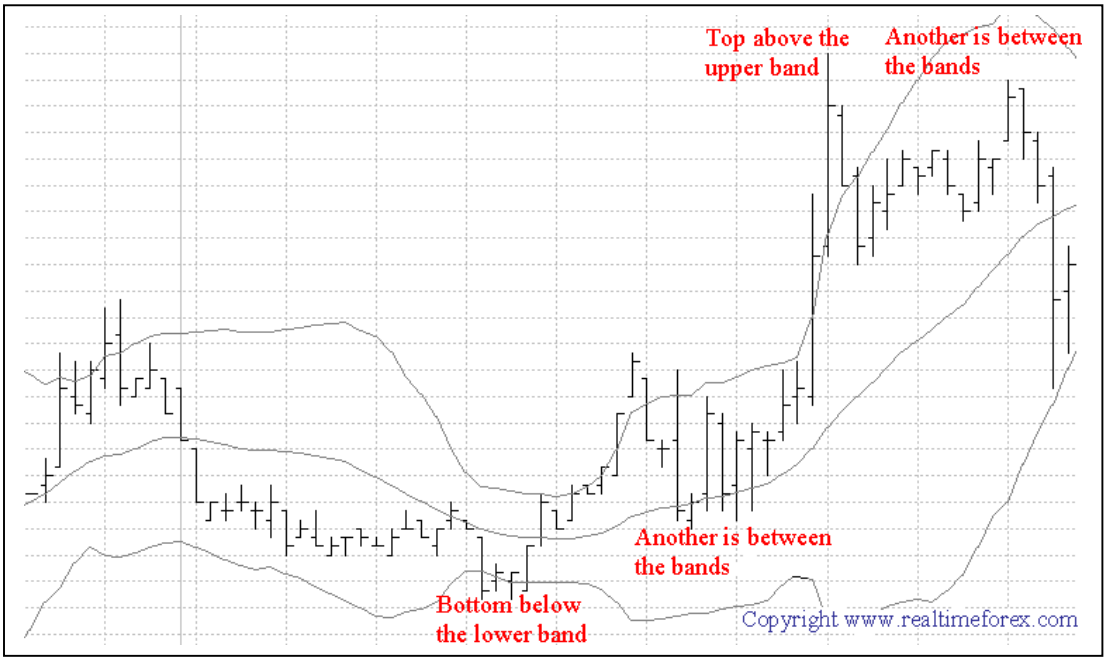
- Warn of an impending price move

The bands often narrow just before a sharp price move. A period of low volatility often precedes a sharp move in prices; low volatility will cause the bands to narrow.



- Signal potential tops and bottoms

A top that breaks above the upper band followed by another that is between the bands signals a potential top in the market. A bottom that breaks below the lower band followed by another that is between the bands signals a potential bottom.



Parameters

The length of the moving average is usually 20 days or less. Bollinger suggested using a moving average that would catch the first retracement of an up move.

Bollinger used a figure of 2 standard deviations in his work, which was in stock trading. A value of 2 captures about 95% of the variation in price action. Different figures may be more appropriate for other types of markets.

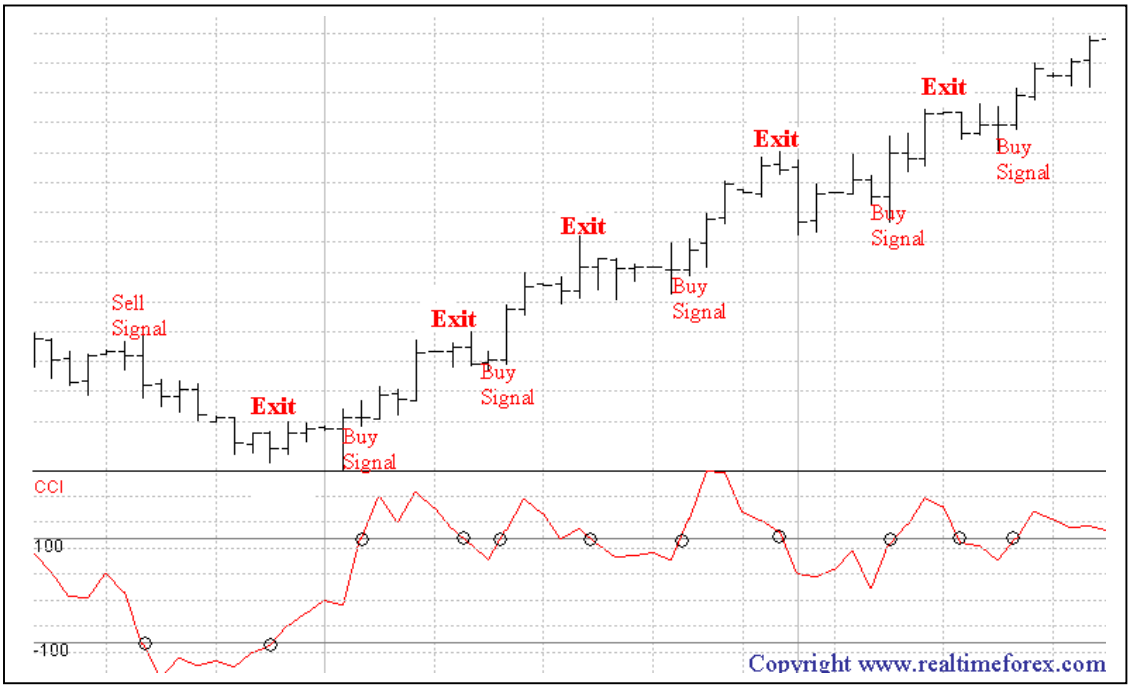
3. CCI – Commodity Channel Index

Commodity Channel Index (CCI) was originated by Donald Lambert in 1980. It is based on the assumption that a perfectly cyclical commodity price approximates a sine wave. Designed to be used with instruments, which have seasonal or cyclical tendencies, Commodity Channel Index is not used to calculate cycle lengths but rather to indicate that a cycle trend is beginning.

The most common uses of Commodity Channel Index are to:

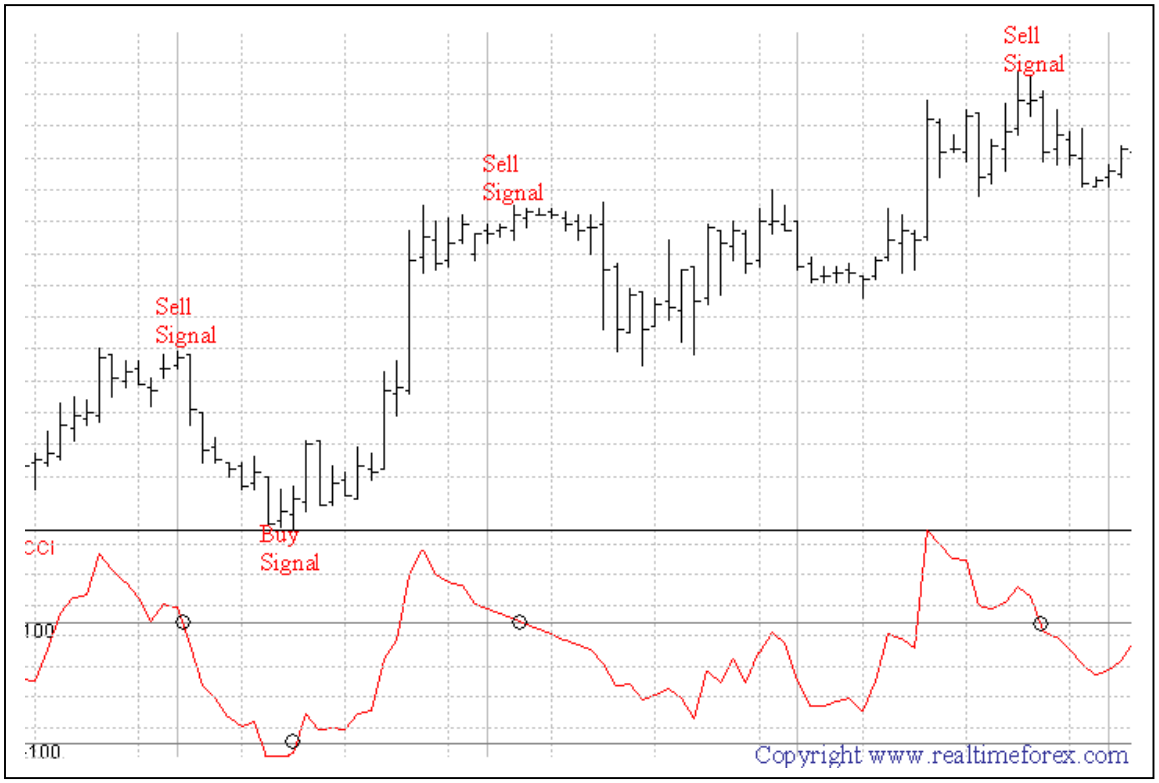
- *Indicate breakouts*

This is Lambert's original interpretation, buying when the Commodity Channel Index moved above +100 and selling when the Commodity Channel Index went below -100. Lambert would exit the trade once the Commodity Channel Index moved back within the -100 to +100 bands. The assumption with this use of Commodity Channel Index is that once an instrument breaks +100 or -100 it has begun to trend.



- Generate buy and sell signals

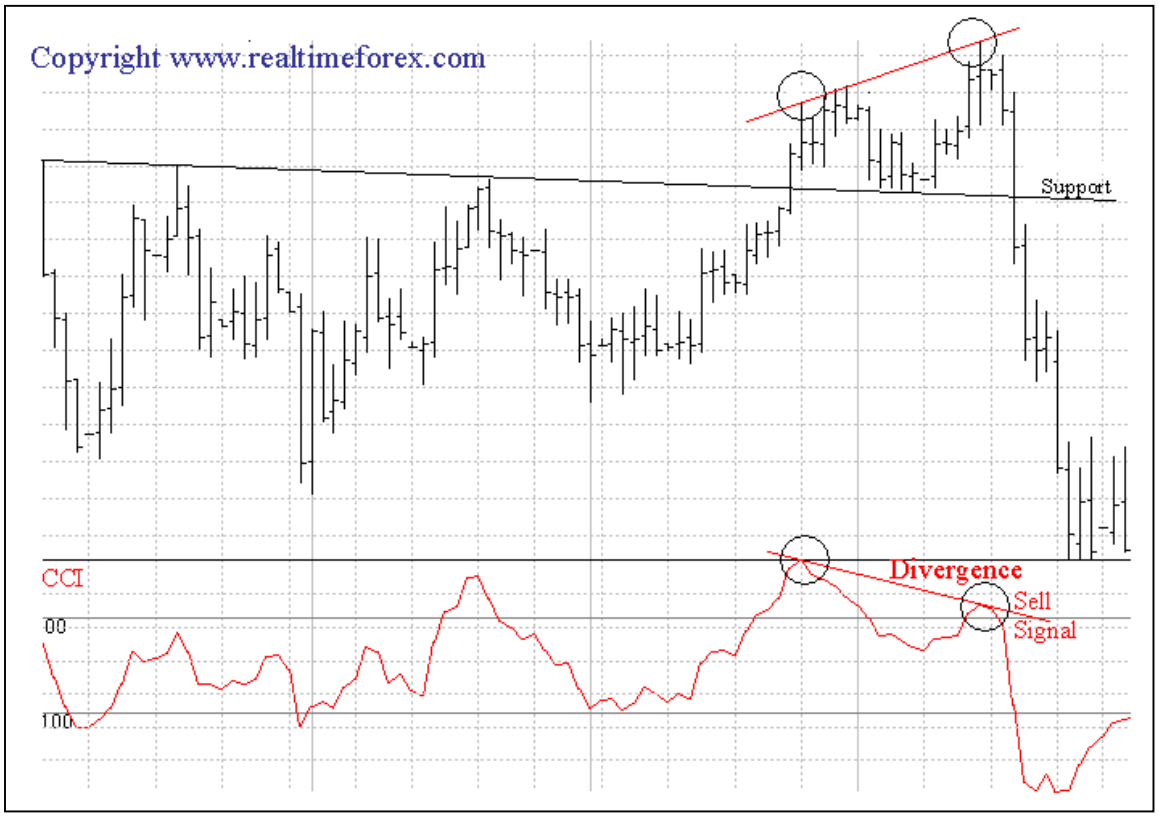
Sell signals are when the CCI moves from above +100 to below +100 and buy signals are when the CCI moves from below -100 to above -100. This method works best when the market is non-trending.



- Indicate Bullish and Bearish Divergence

In trending markets the Commodity Channel Index can be used to indicate that the trend is weakening by signaling divergence. Divergence between the CCI line and the price indicates that an up or down move is weakening.

Bearish Divergence occurs when prices are making higher highs but the CCI is making lower highs. This is a sign that the up move is weakening.
Bullish Divergence occurs when prices are making lower lows but the CCI is making higher lows. This is a sign that the down move is weakening.



Parameters

Observation period: (default 5)

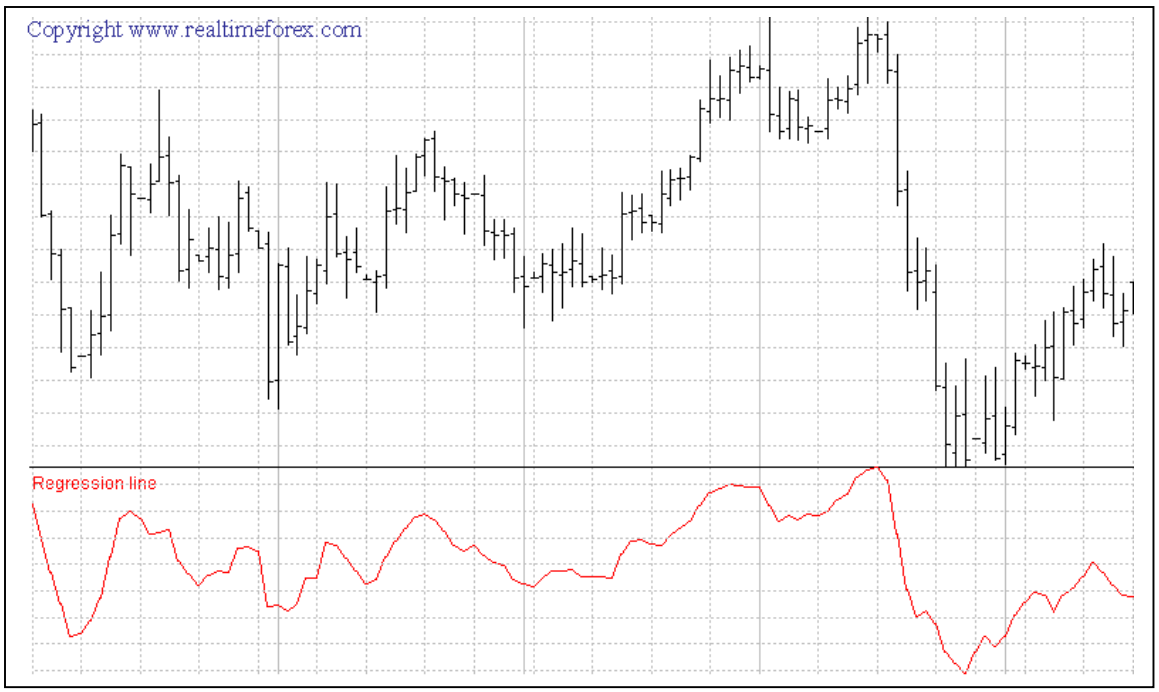
The choice of observation period is important. If the Commodity Channel Index is to be used as Lambert originally suggested then the Observation Period should be one third of the cycle length.
If the Commodity Channel Index is to be used for purposes other than in relation to cycles, the Observation Period can be set so that the -100 to +100 bands contain 70% to 80% of the data.

4. Linear Regression

Linear regression is a statistical tool used to measure trends. Linear regression uses the least squares method to plot the line. The linear regression line is a straight line extending through the prices.

The most common use of Linear Regression is:

- To trade in the direction of the linear regression line. Colby and Meyers found that trading in this manner provided good results using a 66-week figure. The only drawback was a large draw down in relation to the profitable trades.



5. MACD - Moving Average Convergence Divergence

Moving Average Convergence Divergence or MACD as it is more commonly known, was developed by Gerald Appel to trade 26 and 12-week cycles in the stock market. MACD is a type of oscillator that can measure market momentum as well as follow or indicate the trend.

MACD consists of two lines, the MACD Line and the Signal Line. The MACD Line measures the difference between a short Exponential Moving Average and a long Exponential Moving Average. The Signal Line is an Exponential Moving Average of the MACD Line. MACD oscillates above and below a zero line without upper and lower boundaries.

There is another form of MACD, which displays the difference between the MACD Line and the Signal Line as a histogram.

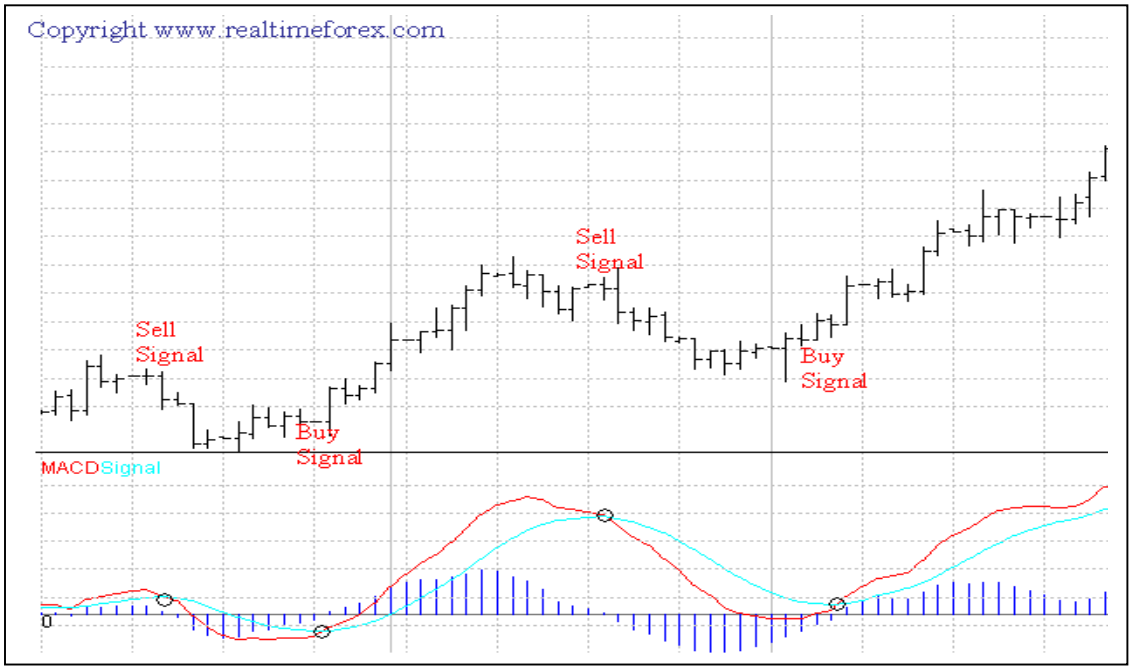
MACD Forest displays the positive and negative difference between the two lines found in an MACD graph (the MACD Line and the Signal Line) as a histogram above and below a zero line.

The default periods are the same as the periods used by Appel. Remember that Appel used 26 and 12 because he observed weekly cycles of similar length in the US stock market. You may wish to change the parameters to match another cycle period you have observed.

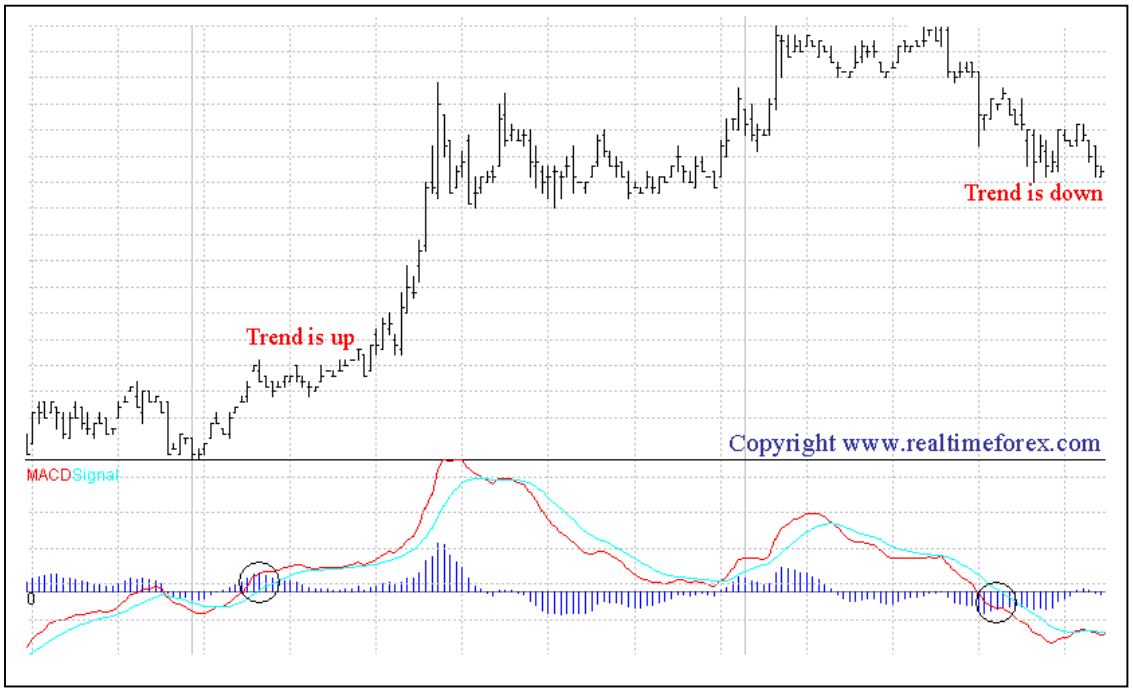
The most common uses of MACD are to:

- Generate buy and sell signals

Signals are generated when the MACD Line and the Signal Line cross. A buy signal occurs when the MACD Line crosses from below to above the Signal Line, the further below the zero line that this occurs the stronger the signal. A sell signal occurs when the MACD Line crosses from above to below the Signal Line, the further above the zero line that this occurs the stronger the signal.

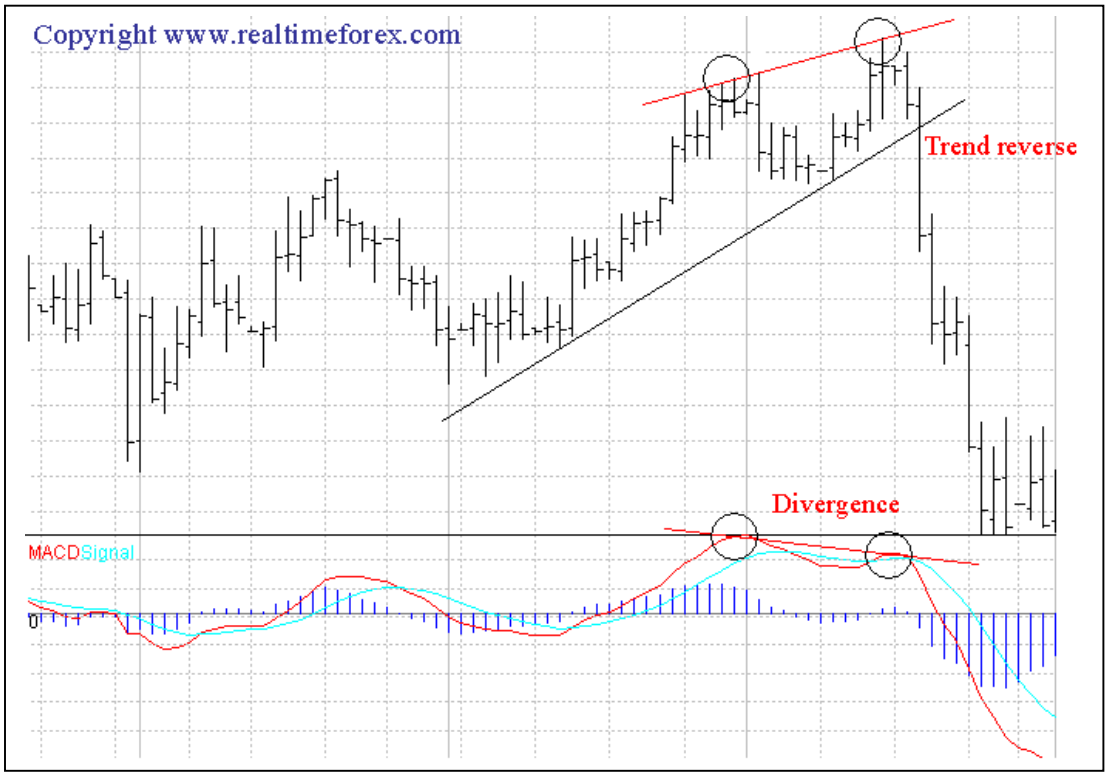


If a trend is gaining momentum then the difference between the short and long moving average will increase. This means that if both MACD lines are above (below) zero and the MACD Line is above (below) the Signal Line, then the trend is up (down).



- Indicate Bullish and Bearish Divergence

Divergence between the MACD and the price indicates that an up or down move is weakening.
Bearish Divergence occurs when prices are making higher highs but the MACD is making lower highs. This is a sign that the up move is weakening.
Bullish Divergence occurs when prices are making lower lows but the MACD is making higher lows. This is a sign that the down move is weakening.
It is important to note that although Divergences indicate a weakening trend they do not in themselves indicate that the trend has reversed. The confirmation or signal that the must come from price action, for example a trend line break.



Parameters

Short averaging period: (default 12)

Long averaging period: (default 26)

Signal line averaging period: (default 9)

The default periods are the same as the periods used by Appel. Remember that Appel used 26 and 12 because he observed weekly cycles of similar length in the US stock market. You may wish to change the parameters to match another cycle period you have observed.

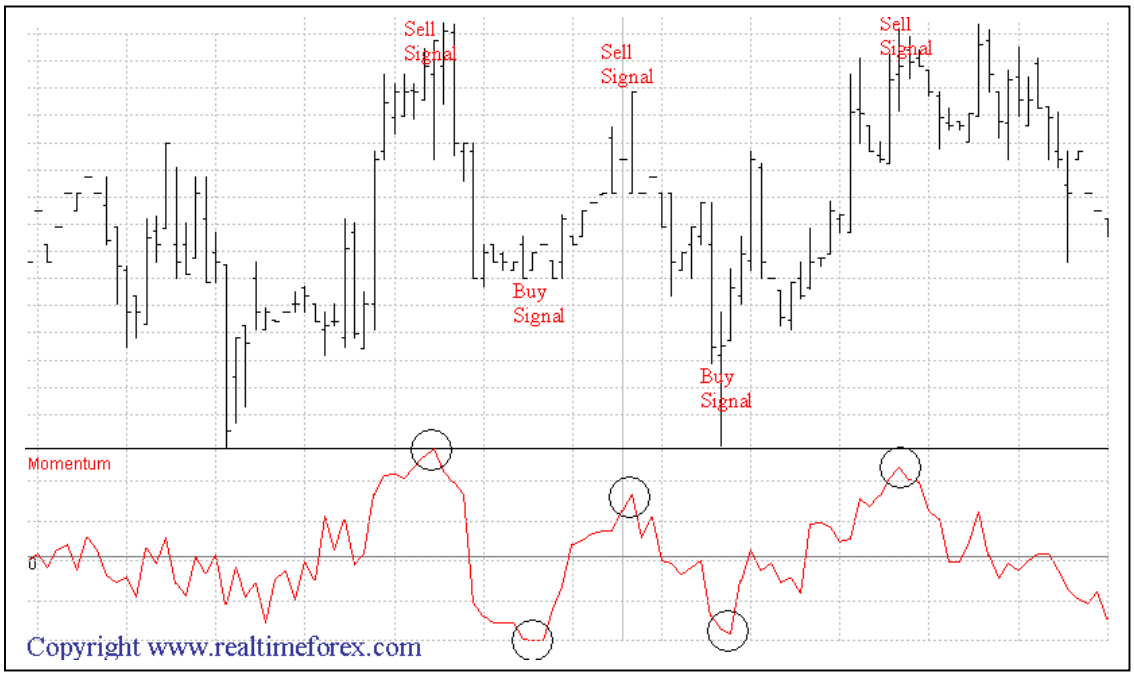
6. Momentum

Momentum is an oscillator that measures the rate at which prices are changing over the Observation Period. It measures whether prices are rising or falling at an increasing or decreasing rate. The Momentum calculation subtracts the current price from the price a set number of periods ago. This positive or negative difference is plotted about a zero line.

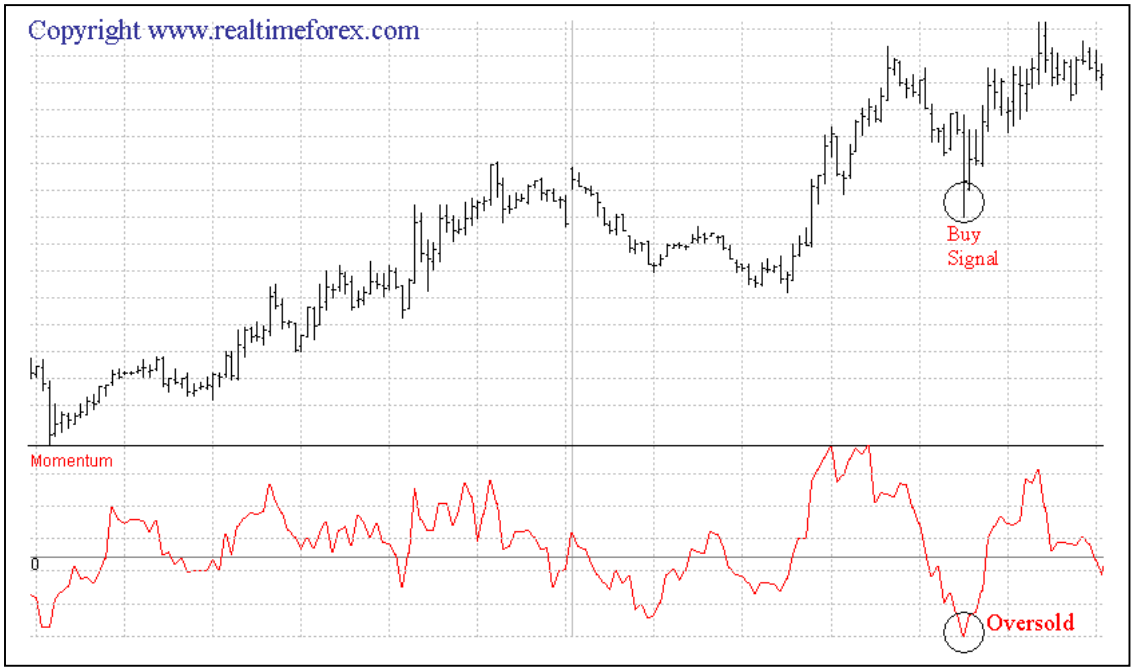
The most common uses of Momentum are to:

- *Indicate overbought and oversold conditions*

An overbought or oversold market is one where the prices have risen or fallen too far and are therefore likely to retrace. If the Momentum line moves to a very high value above the zero line, this is a sign of an overbought market. If the Momentum line moves to a very low value below the zero line this is a sign of an oversold market.
Overbought and oversold signals are most reliable in a non-trending market where prices are making a series of equal highs and lows.

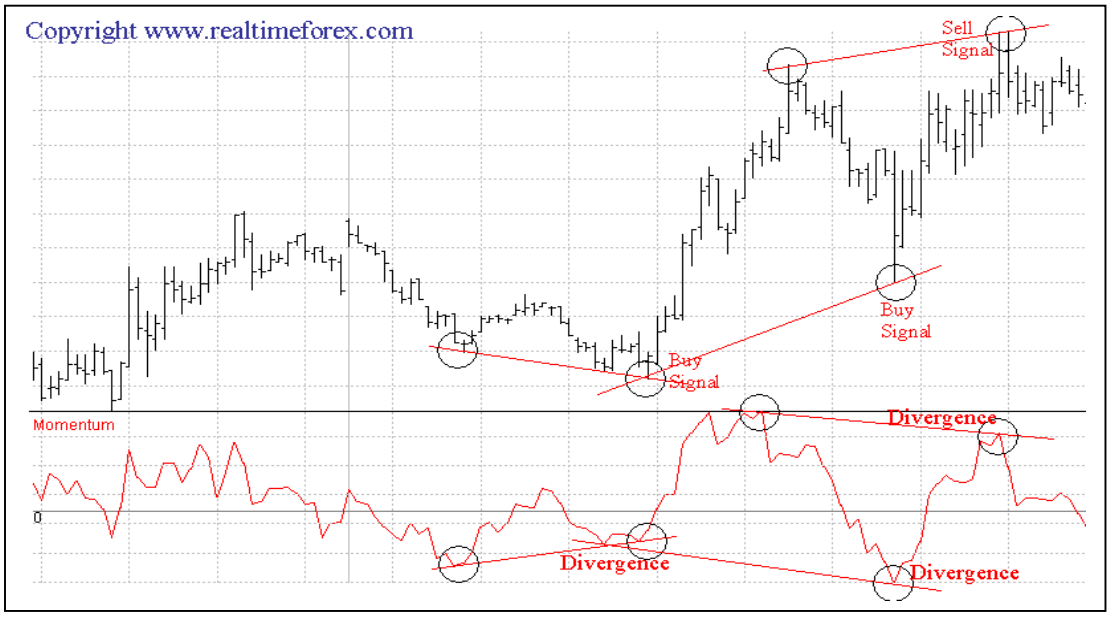


If the market is trending, then signals in the direction of the trend are likely to be more reliable. For example if prices are in an up trend, a safer trade entry may be obtained by waiting for prices to pullback giving an oversold signal and then turn up again.



- Indicate Bullish and Bearish Divergence

Divergence between the Momentum line and the price indicates that an up or down move is weakening.
Bearish Divergence occurs when prices are making higher highs but the Momentum is making lower highs. This is a sign that the up move is weakening.
Bullish Divergence occurs when prices are making lower lows but the Momentum is making higher lows. This is a sign that the down move is weakening.
It is important to note that although Divergences indicate a weakening trend they do not in themselves indicate that the trend has reversed. The confirmation or signal that the trend has reversed must come from price action, for example a trend line break.



Parameters

Observation period: (default 10)

Normally the Observation Period is set to half the cycle length of the underlying instrument. This means that the Momentum line will peak and bottom along with prices.

7. MOVING AVERAGE

A Moving Average is a moving mean of data. In other words, Moving Averages perform a mathematical function where data within a selected period is averaged and the average 'moves' as new data is included in the calculation while older data is removed or lessened. Moving Averages essentially smooth data by removing 'noise'. This smoothing of data makes Moving Averages popular tools in identifying price trends and trend reversals.
The differences between the three types of moving averages lie in the way that they are calculated and whether they look at all the data available or only the data within a selected period. This means that each type of moving average has its own characteristics, for example how quickly each will respond to changes in the underlying price.

Simple Moving Average

Simple Moving Averages are the most common and popular form of moving average. The primary reason for this is the relative ease with which Simple Moving Averages are calculated. A Simple Moving Average is calculated by adding values over a set number of periods and then dividing the sum by the total number of values.
As with other types of moving averages, Simple Moving Averages smooth the data by removing 'noise' over the selected period. The ability to smooth data makes them a useful tool in identifying price trends and trend reversals.

Moving average - weighted

As with Simple Moving Averages, Weighted Moving Averages smooth the data by removing 'noise' over the selected period. However a Weighted Moving Average will be more sensitive to recent changes in data. This is because a Simple Moving Average gives all observations equal emphasis in its calculation, but a Weighted Moving Average assigns a greater weight to the most recent observations.

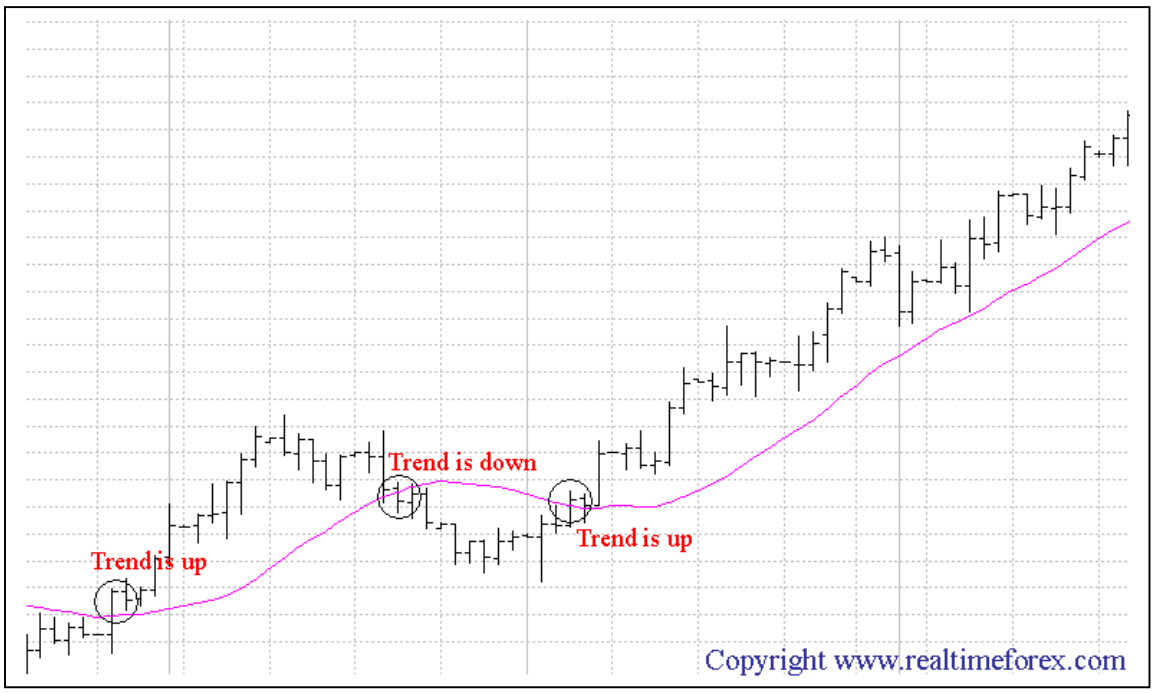
Moving average - exponential

The Exponential Moving Average is similar to the Weighted Moving Average in that they both assign greater weight to the most recent data. Where they differ is that instead of dropping off the oldest data point in the selected period of the moving average, the Exponential Moving Average continues to maintain all the data. In other words, a 5 day Exponential Moving Average will contain more than 5 pieces of data information. Each observation becomes progressively less significant but still includes in its calculation all the price data in the life of the instrument. The Exponential Moving Average is another method of weighting a moving average.

The most common uses of Moving Averages are to:

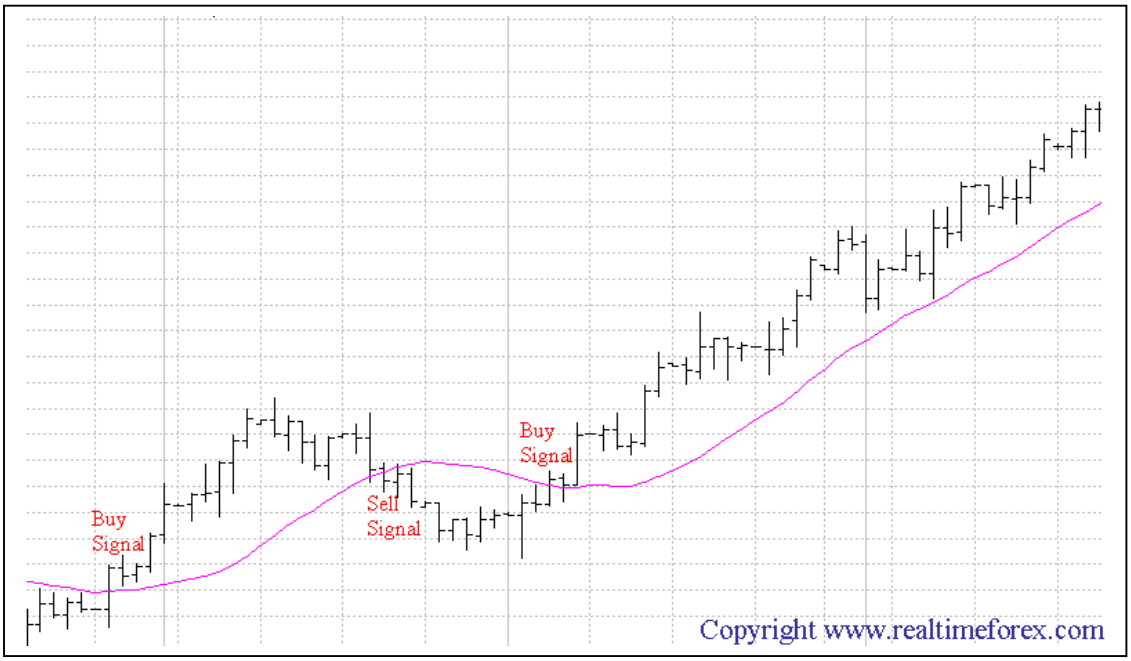
- Identify the trend

A common method involves looking at the slope of the Moving Average and the relationship of the prices to the Moving Average. For example, if the Moving Average is sloping down and prices are below the Moving Average then prices are considered to be in a downtrend. The opposite is true for an up trend. If prices are moving above and below the Moving Average and the Moving Average is flat then a non-trending market exists.

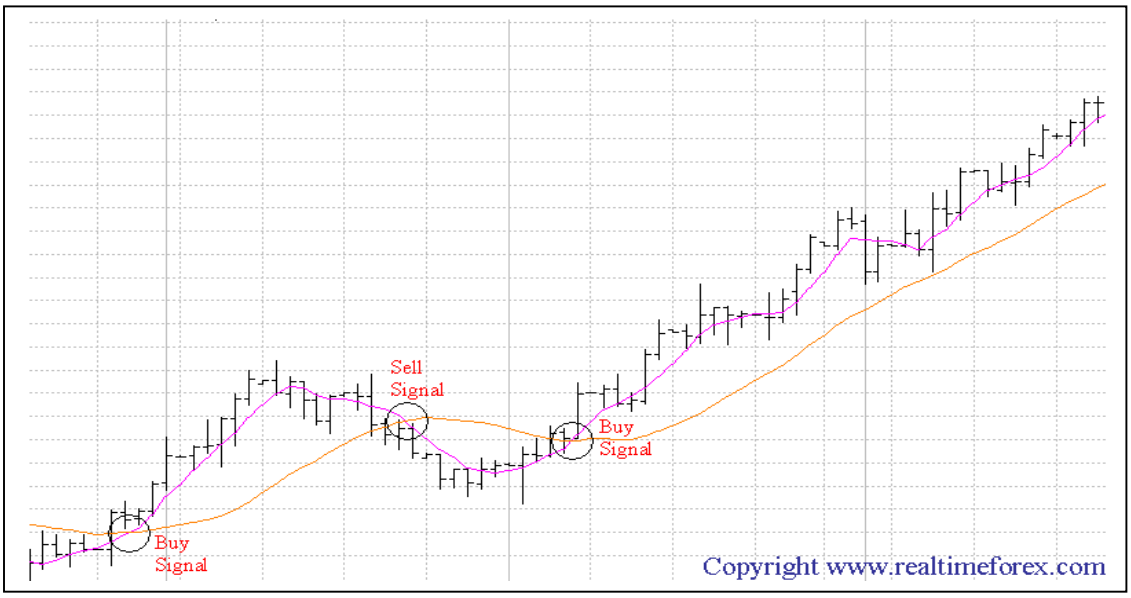


- Give buy and sell signals

This can be achieved a number of ways. The first method looks at the relationship between the close and a single Moving Average. If the market closes above the Moving Average then a buy signal is generated, if the market closes below the Moving Average then a sell signal is generated.



The second method uses two Moving Averages, one with a shorter observation period than the other. Buy and sell signals are generated when the short moving average crosses over the long moving average. For example if the short moving average crosses above the long moving average a buy signal is generated; a sell signal is generated when the short Moving Average crosses below the long Moving Average.



Note: Both of these buy and sell techniques are most effective when the market is trending. If the market is non-trending then these techniques are likely to give false signals. This is simply because the market needs to continue in the direction of the buy or sell signal in order for the trade to be profitable.

Exponential Moving Averages are used in the same manner as the other types of moving average, usually to identify price trends and trend reversals.

Parameters

Averaging period: (default 5)

The exact averaging period to be used will depend upon the purpose of the moving average.
If you are using moving averages to identify the trend, then the length of the averaging period should reflect the length of the trend you are trying to identify. The longer the trend - the longer the averaging period. For example, if you are looking at a daily chart to identify the long-term trend, you may decide to use an averaging period of 200. For short and medium term trends periods of 20 and 50 could be used respectively.

If you are using moving averages to generate buy and sell signals then shorter, more responsive averaging periods are normally used. For example a two moving average system may use averaging periods of 5 and 20.

Note: When selecting an averaging period there is a tradeoff between the averaging period, the number of signals generated and the risk associated with the signal. A longer averaging period will generate less signals but will require a larger price move before responding, sacrificing potential profits in order to confirm the signal. A shorter averaging period will generate more signals and require less of a price move before responding, however the risk that the signal is false increases.

8. PARABOLIC TIME PRICE - SAR

Parabolic Time Price is a system that always has a position in the market, either long or short. You would close out the current position and enter a reverse position when the price crosses the current Stop And Reverse (SAR) point.
The SAR points resemble a parabolic curve as they begin to tighten and close in on prices once prices begin to trend. This explains the name - Parabolic Time Price.

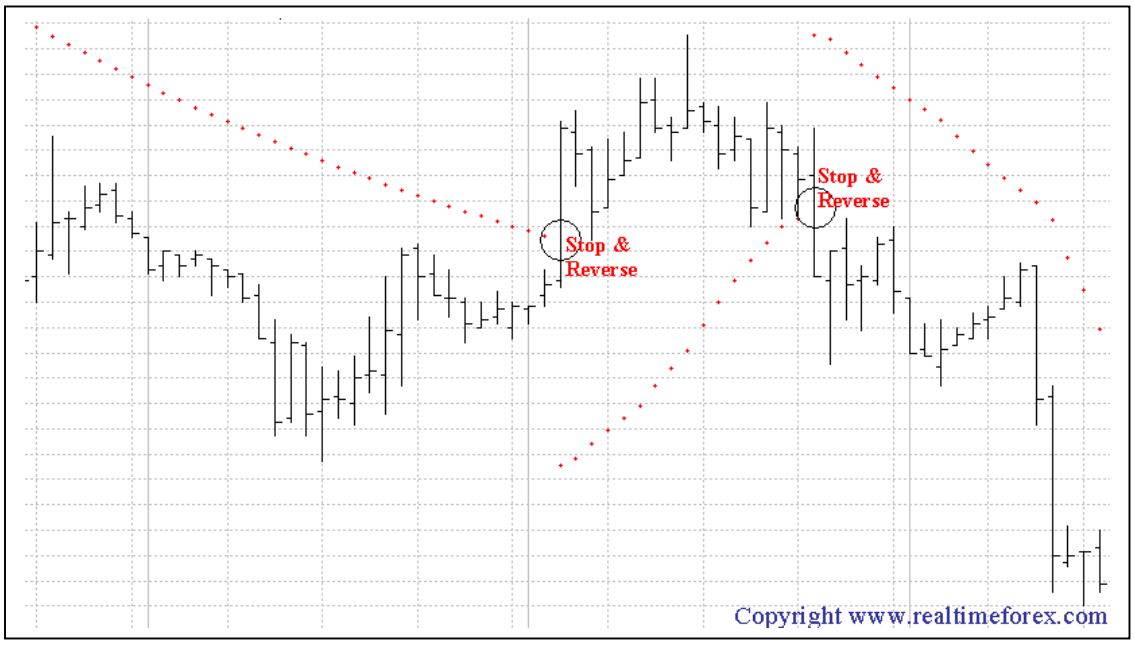
Parabolic Time Price is usually charted with a bar analysis so that the stop and reverse points are easily identified. If you are long, the SAR points will be below the prices and the signal to go short will be when prices cross the current SAR point from above. If you are short, the SAR points will be above the prices and the signal to go long will be when prices cross the current SAR point from below.
When a new position is entered the SAR points will be positioned far enough away from the prices to permit some contra-trend price movement. As the market begins to trend the SAR points will move with prices and progressively tighten as the trend continues. This is accomplished by the use of an acceleration factor that increases up to a given limit each time a new extreme in the direction of the trend is reached.

The most common uses of Parabolic Time Price are:

- As a Stop And Reverse system

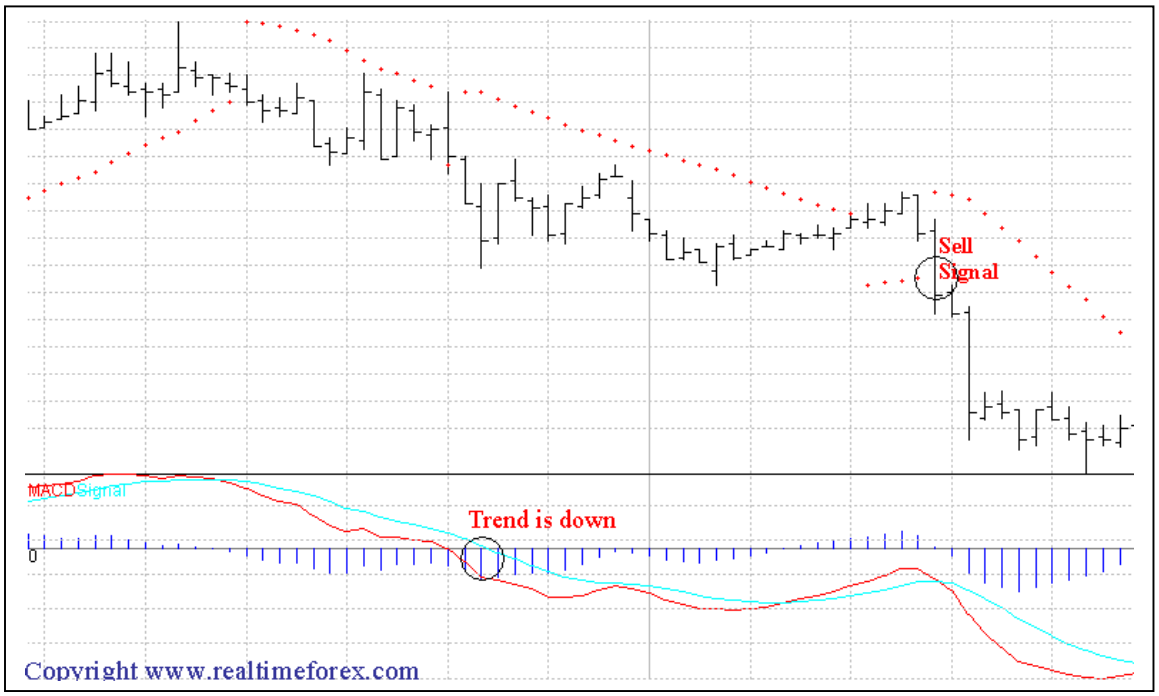
Signals to stop out of the current position and enter a reverse position are when prices cross the current SAR point. For example if the SAR points are below prices you would be long with an order to close out the current long position and enter a short position at that period's SAR point. Once you are stopped into a short position the SAR points will be above prices and the current period's SAR point will be the level at which you will be stopped out of your short position and enter a long position.

When applied in its original form Parabolic Time Price is a system that is always in the market. In order for this technique to be successful the underlying market needs to be trending strongly.
If Parabolic Time Price is applied in a non-trending market then it is likely that losses will result because the buy signals will occur at the top of the range and the sell signals at the bottom of the range.



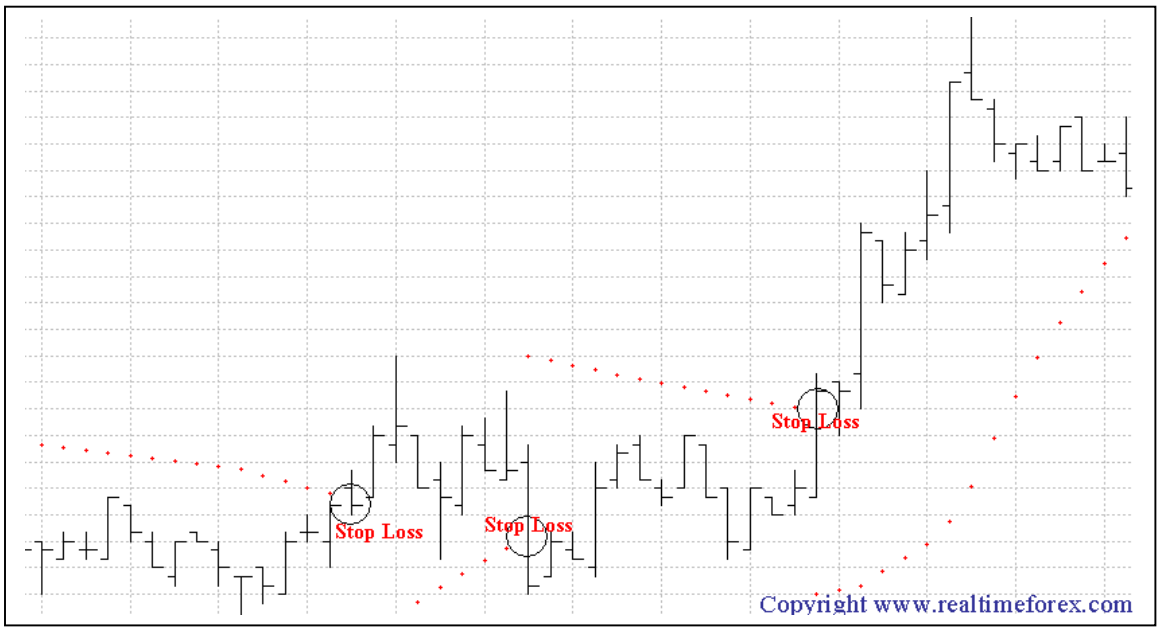
- As an entry and exit technique in a trending market

By using Parabolic Time Price in conjunction with an analysis that indicates market trend such as MACD, you would take only long trades when the trend was up and only short trades when the trend was down.



- To select a level at which to place a stop loss

After a trade has been entered using another method or technique, the SAR points of Parabolic Time Price are used to trail a stop on the position.



Parameters

Acceleration factor: (default 0.02)

The Acceleration increment is the rate at which the SAR points will progressively tighten upon prices each time a new extreme in the direction of the trend is reached.
A value greater (less) than 0.02 means that the SAR points will tighten more quickly (slowly) upon prices, leaving less (more) room for counter trend price movements.

Maximum constant: (default 0.2)

When a new signal is given the acceleration factor will use the Start acceleration as its initial value. Each time a new extreme is made in the direction of the trend the acceleration factor will increase by the value of the Acceleration increment until the acceleration factor equals the Maximum acceleration.
A value greater (less) than 0.2 means that the SAR points will tighten more quickly (slowly) upon prices, leaving less (more) room for counter trend price movements.

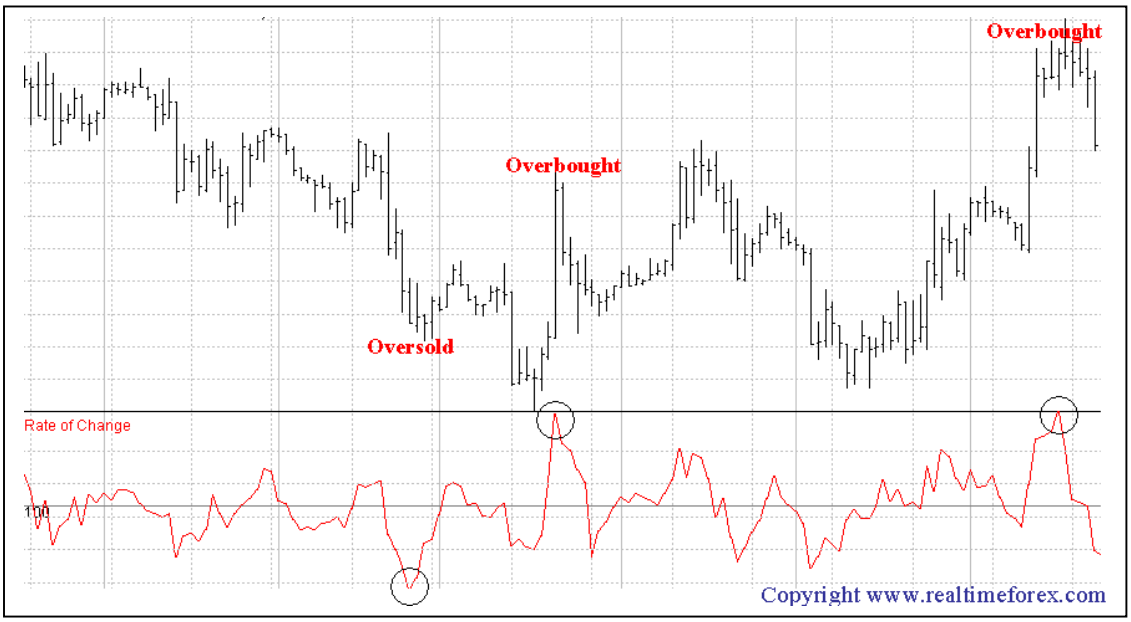
9. ROC – Rate of Change

Rate of Change is an oscillator that measures how fast the momentum of the market is changing over the Observation Period. Rate of Change is very similar to Momentum in that it compares the current price with the price a specified number of periods ago, however Rate of Change is calculated differently. Where Momentum subtracts the current price from the price a specified number of periods ago, Rate of Change divides the current price by the price a specified number of periods ago and then multiplies the result by 100.

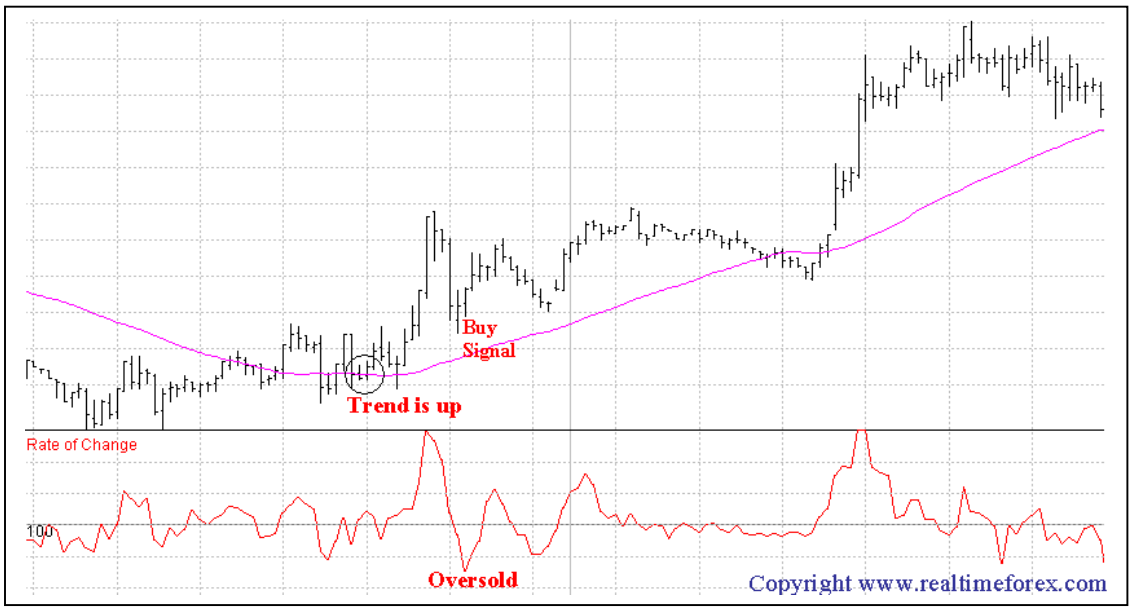
The most common uses of Rate of Change are to:

- *Indicate overbought and oversold conditions*

An overbought or oversold market is one where the prices have risen or fallen too far and are therefore likely to retrace. If the Rate of Change line moves to a very high value above the 100 line, this is a sign of an overbought market. If the Rate of Change line moves to a very low value below the 100 line, this is a sign of an oversold market.
Overbought and oversold signals are most reliable in a non-trending market where prices are making a series of equal highs and lows.

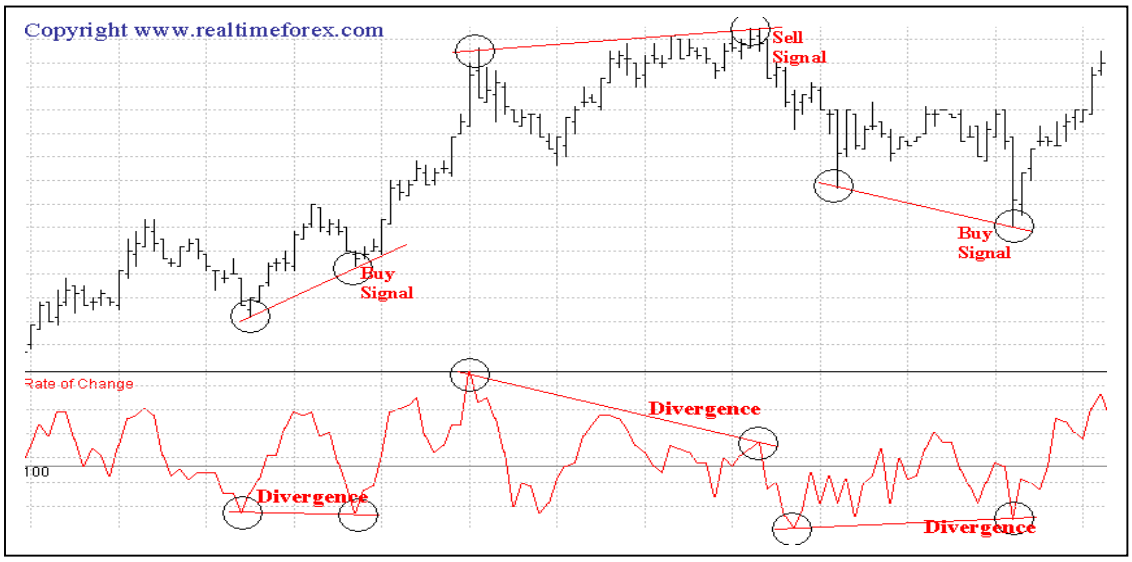


If the market is trending, then signals in the direction of the trend are likely to be more reliable. For example if prices are in an up trend, a safer trade entry may be obtained by waiting for prices to pullback giving an oversold signal and then turn up again.



- Indicate Bullish and Bearish Divergence

Divergence between the Rate of Change line and the price indicates that an up or down move is weakening. Bearish Divergence occurs when prices are making higher highs but the Rate of Change is making lower highs. This is a sign that the up move is weakening.
Bullish Divergence occurs when prices are making lower lows but the Rate of Change is making higher lows. This is a sign that the down move is weakening.
It is important to note that although Divergences indicate a weakening trend they do not in themselves indicate that the trend has reversed. The confirmation or signal that the trend has reversed must come from price action, for example a trend line break.



Parameters

Observation Period: (default 14)

Normally the Observation Period is set to half the cycle length of the underlying instrument. This means that the Rate of Change line will peak and bottom along with prices.
Using a shorter Observation Period increases the responsiveness of the Rate of Change oscillator while also increasing the risk of false signals. Using a longer Observation Period slows the responsiveness of the oscillator to price changes, resulting in late signals.

10. RSI – Relative Strength Index

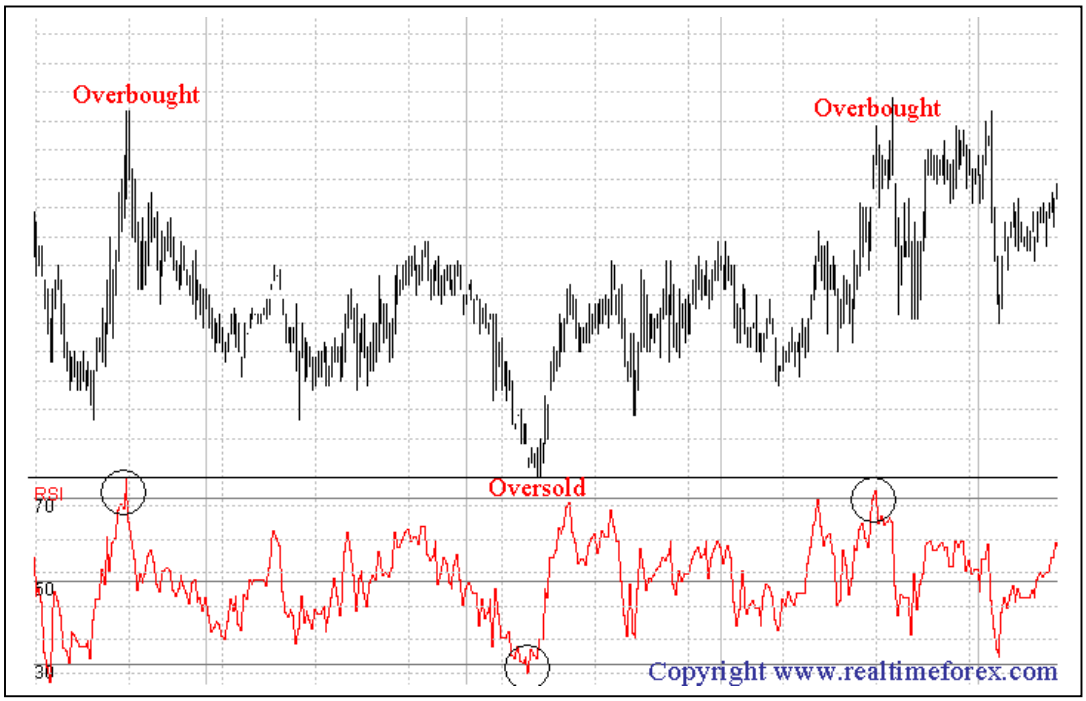
Developed by J. Welles Wilder and introduced in his book New Concepts in Technical Trading Systems.
RSI calculates the difference in values between the closes over the Observation Period. These values are averaged, with an up average being calculated for periods with higher closes and a down-average being calculated for periods with lower closes. The up average is divided by the down average to create the Relative Strength. Finally, the Relative Strength is put into the Relative Strength Index formula to produce an oscillator that fluctuates between 0 and 100.

By calculating the RSI in this way Wilder was able to overcome two problems he had encountered with other momentum oscillators. Firstly, the RSI should avoid some of the erratic movements common to other momentum oscillators by smoothing the points used to calculate the oscillator. Secondly, the Y Axis scale for all instruments should be the same, 0 to 100. This would enable comparison between instruments and for objective levels to be used for overbought and oversold readings.

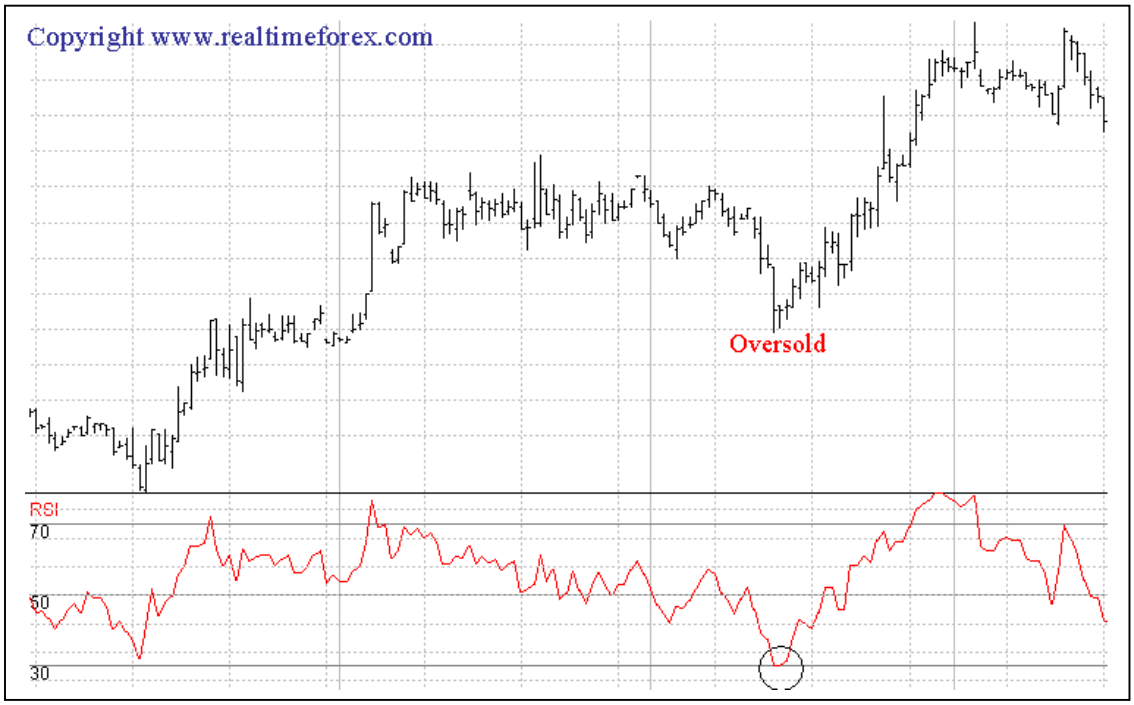
The most common uses of RSI are to:

- *Indicate overbought and oversold conditions*

An overbought or oversold market is one where prices have risen or fallen too far and are therefore likely to retrace.
If the RSI is above 70 then the market is considered to be overbought, and an RSI value below 30 indicates that the market is oversold. 80 and 20 can also be used to indicate overbought and oversold levels.
Overbought and oversold signals are most reliable in a non-trending market where prices are making a series of equal highs and lows.

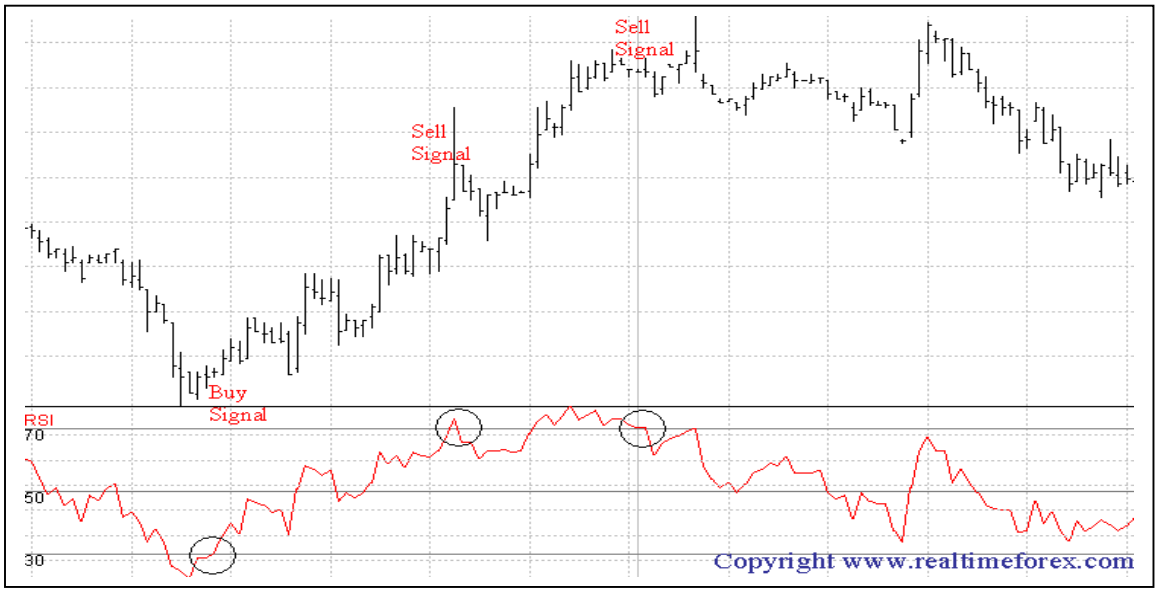


If the market is trending, then signals in the direction of the trend are likely to be more reliable. For example if prices are in an up trend, a safer trade entry may be obtained by waiting for prices to pullback giving an oversold signal and then turn up again.

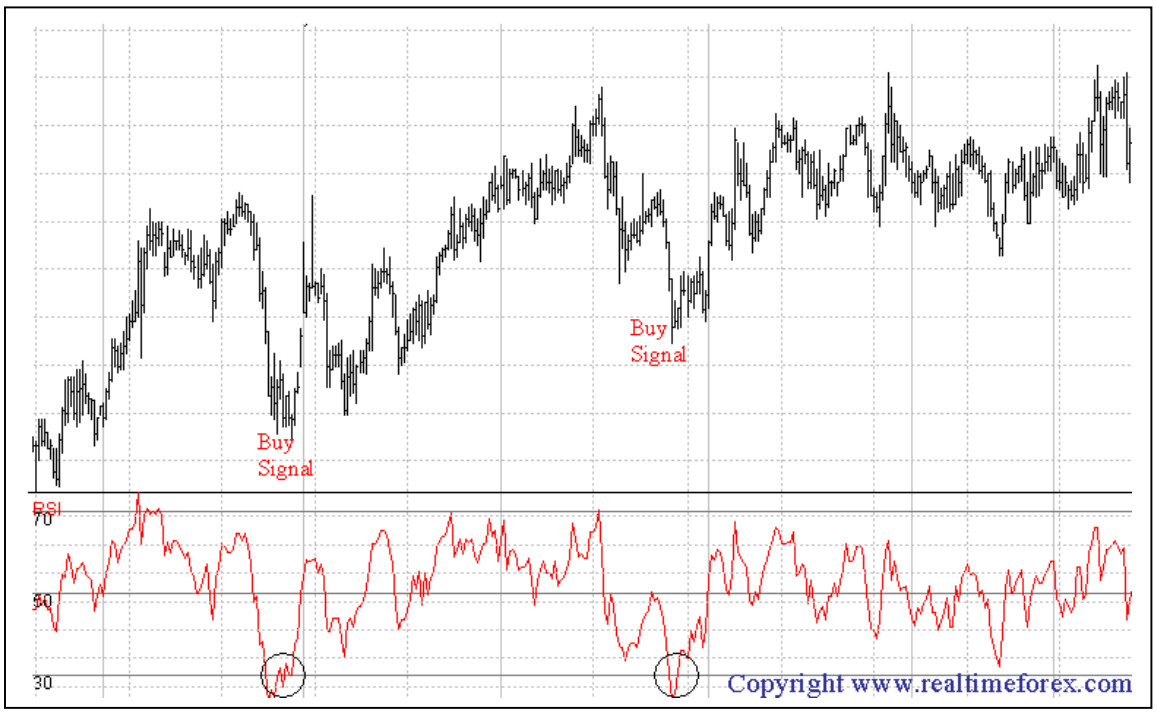


- Generate buy and sell signals

If the RSI is above 70 and you are looking for the market to form a top, then the RSI crossing back below 70 can be used as a sell signal. The same is true for market bottoms, buying after the RSI has moved back above 30. These signals are best used in non-trending markets.

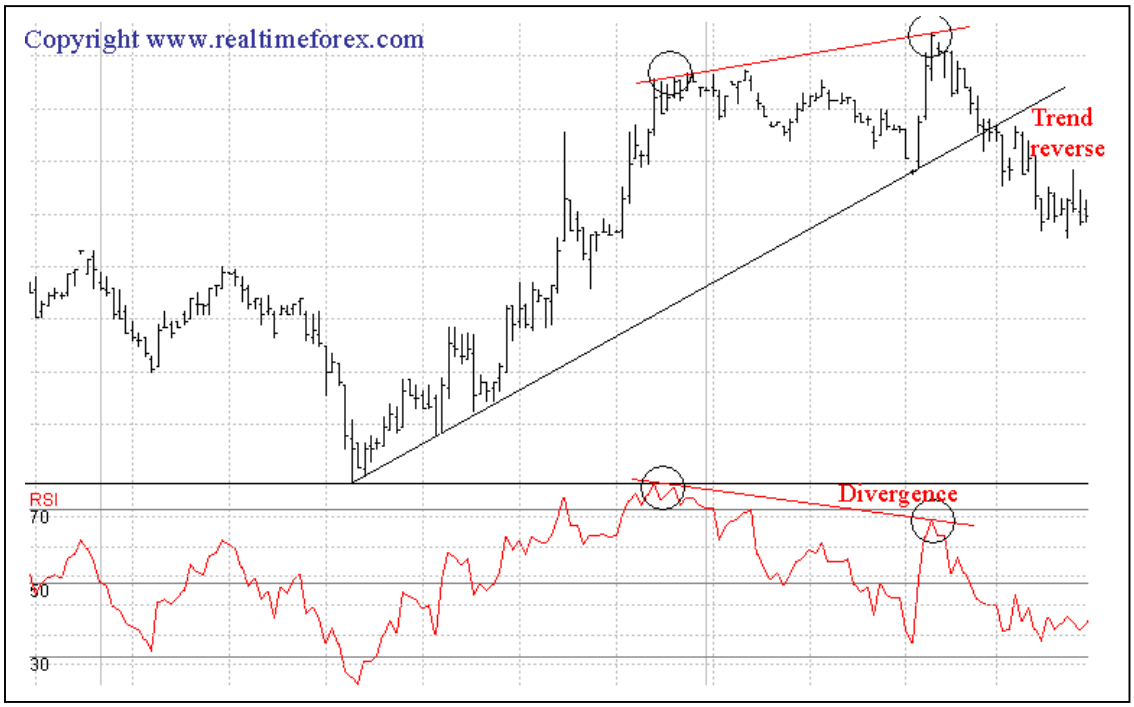


In trending markets, the most reliable signals will be in the direction of the trend. For example if the market is trending up, taking only buy signals after the RSI has moved back above 30 after dipping below it. The reason for taking signals only in the direction of the trend, is that when the market is trending any counter-trend signal is likely to indicate a small retracement against the underlying trend rather than true reversal.



- Indicate Bullish and Bearish Divergence

Divergence between the RSI and the price indicates that an up or down move is weakening.
Bearish Divergence occurs when prices are making higher highs but the RSI is making lower highs. This is a sign that the up move is weakening.
Bullish Divergence occurs when prices are making lower lows but the RSI is making higher lows. This is a sign that the down move is weakening.
It is important to note that although Divergences indicate a weakening trend they do not in themselves indicate that the trend has reversed. The confirmation or signal that the trend has reversed must come from price action, for example a trend line break.



Parameters

Observation Period: (default 14)

Lower Bound percentage (default 30); this provides the lower boundary expressed as a percentage of the instrument's value. The number must be less than the Upper Bound.
Upper Bound percentage (default 70); this provides the upper boundary expressed as a percentage of the instrument's value.

Wilder used 14 as an Observation Period although periods of 9 and 7 are also popular. Decreasing the observation period increases the sensitivity of the RSI to changes in price, resulting in a more responsive RSI. Note that a shorter observation period may also result in an increase in the number of false signals. A longer period results in a smoother RSI that will generate less signals.

11. Slow Stochastic

Stochastics are an oscillator developed by George Lane and are based on the following observation:

As prices increase - closing prices tend to be closer to the upper end of the price range
As prices decrease - closing prices tend to be closer to the lower end of the price range

Slow Stochastics are based on Fast Stochastics but provide a slower, smoother response to price movements.
Slow Stochastic consist of two lines, %K and %D:
The %K line in Slow Stochastic is the same as the %D line in Fast Stochastic.
The %D line in Slow Stochastic is a Simple Moving Average of %K Slow Stochastic. This line is smoother than the %K and provides the signals for an overbought / oversold market.

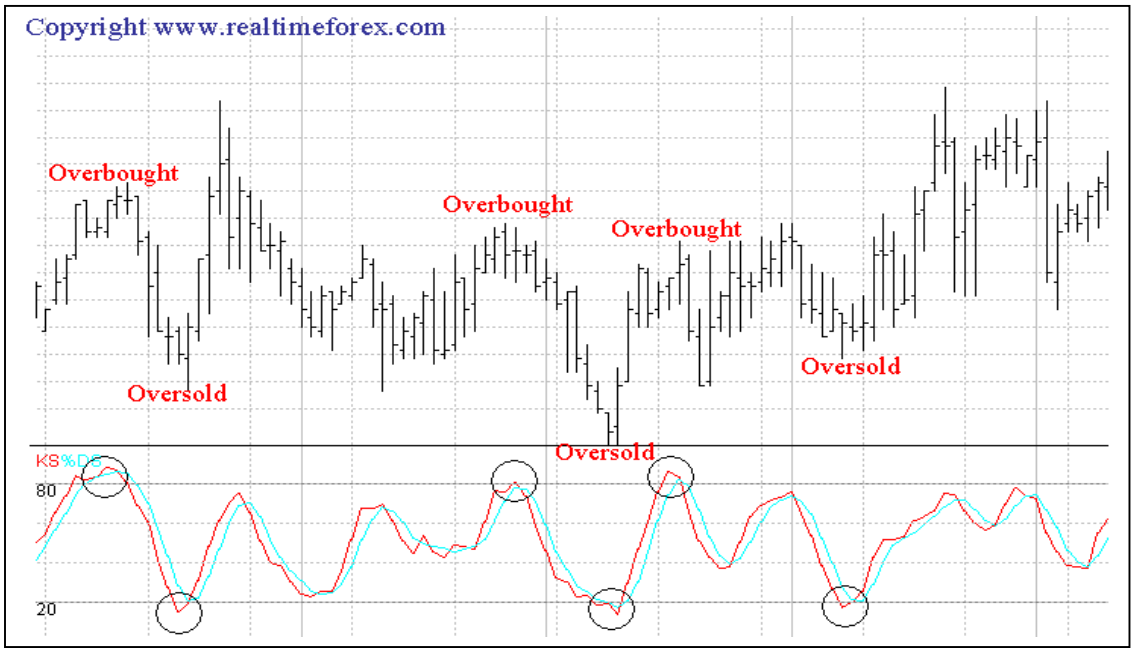
Slow Stochastics are the more commonly used of the two Stochastic types - Fast and Slow. This is because Slow Stochastics are smoother and are less likely to give false signals.

The most common uses of Stochastics are to:

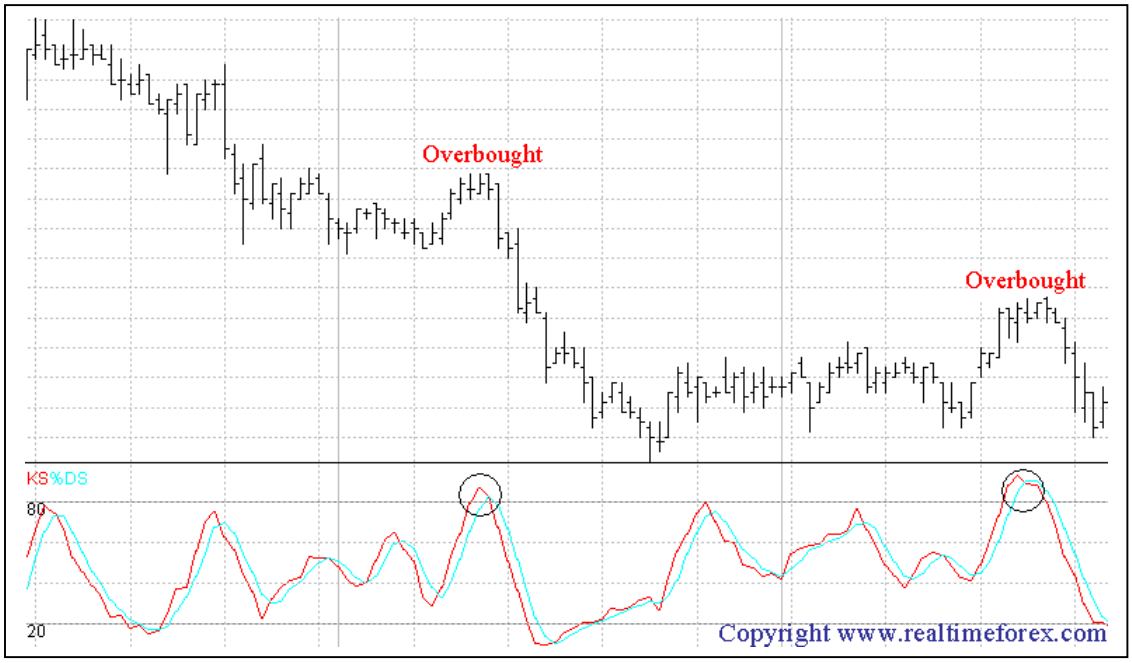
- *Indicate overbought and oversold conditions*

An overbought or oversold market is one where the prices have risen or fallen too far and are therefore likely to retrace. If the %D line is above 80% then the close is near the top end of the range of the observation period, while a reading below 20% means that the close is near the bottom end of the range of the observation period.
Generally the area above 80 is considered overbought, while the area below 20 is oversold. The specified overbought/oversold ranges vary. Other commonly used ranges include 75-25, 70-30 and 85-15.

Overbought and oversold signals are most reliable in a non-trending market where prices are making a series of equal highs and lows. If the market is trending, then signals in the direction of the trend are likely to be more reliable.



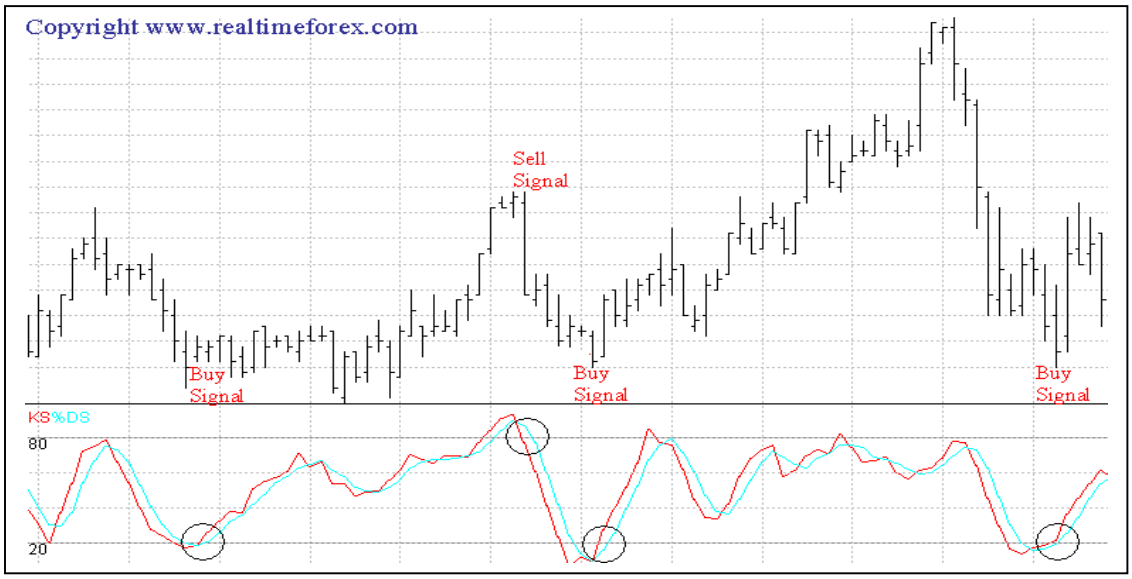
For example if prices are in a downtrend, a safer trade entry may be obtained by waiting for prices to pullback giving an overbought signal and then turn down again.



- Generate buy and sell signals

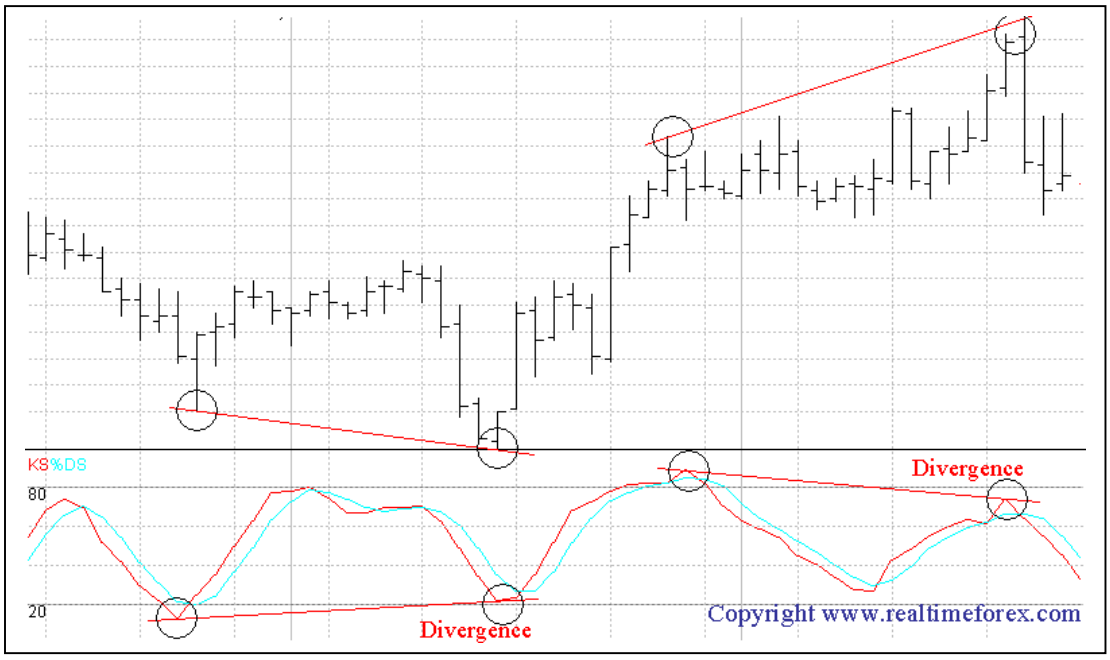
For a buy or sell signal the following conditions must be met in order.

1. The %K and %D lines move above 80 or below 20
2. The %K and %D lines cross
3. The %K and %D lines move below 80 or above 20



- Indicate Bullish and Bearish Divergence

Divergence between Stochastics and the price indicates that an up or down move is weakening.
Bearish Divergence occurs when prices are making higher highs but the Stochastics are making lower highs. This is a sign that the up move is weakening.
Bullish Divergence occurs when prices are making lower lows but the Stochastics are making higher lows. This is a sign that the down move is weakening.



Parameters

Observation period for %K Fast: (default 5)
Fast %K is used to calculate Slow %K, but is not charted.

Averaging period for %K Slow: (default 5)
This is the same as the%D Fast in Fast Stochastics. The averaging period is the number of observations of %K Fast used in the moving average.

Averaging period for %D Slow: (default 3)

This is the number of observations used in the moving average of %K Slow. The smaller the value the closer the %D will be to the %K.

12. Standard Deviation

A measure of dispersion of a set of data from their mean. The more spread apart the data is, the higher the "deviation". In statistics is can also be calculated as the square root of the variance *A.*

Volatile price would have a high standard deviation. In mutual funds, the standard deviation tells us how much the return on the fund is "deviating" from the expected normal returns.

13. STOCHASTIC

Stochastics are an oscillator developed by George Lane and are based on the following observation:

As prices increase - closing prices tend to be closer to the upper end of the price range
As prices decrease - closing prices tend to be closer to the lower end of the price range

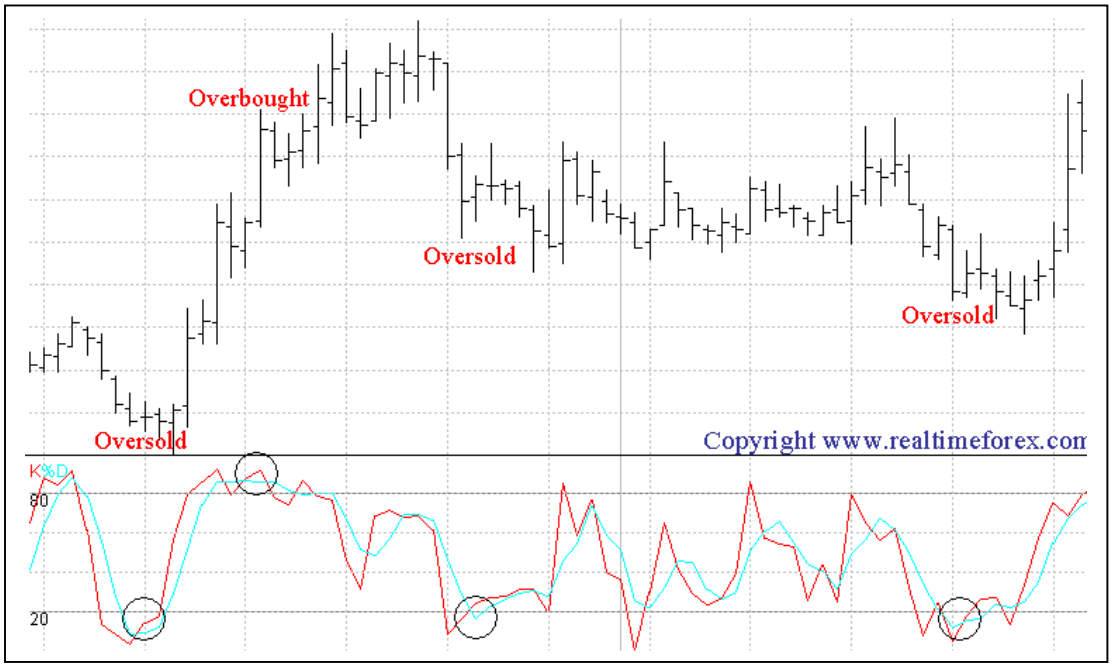
Fast Stochastics consists of two lines, %K and %D:
The %K line measures, as a percentage, where the current close is, in relation to the lowest low over the observation period. This is shown on a scale of 0 to 100, where 0 is the observation period low, and 100 is the observation period high.
The %D line is a Simple Moving Average of the %K. Because it is a moving average, this line is smoother than the %K and provides the signals for an overbought / oversold market.

Fast Stochastics are more sensitive than Slow Stochastics and therefore more likely to give false signals. As a result Fast Stochastics are less commonly used than Slow Stochastics.

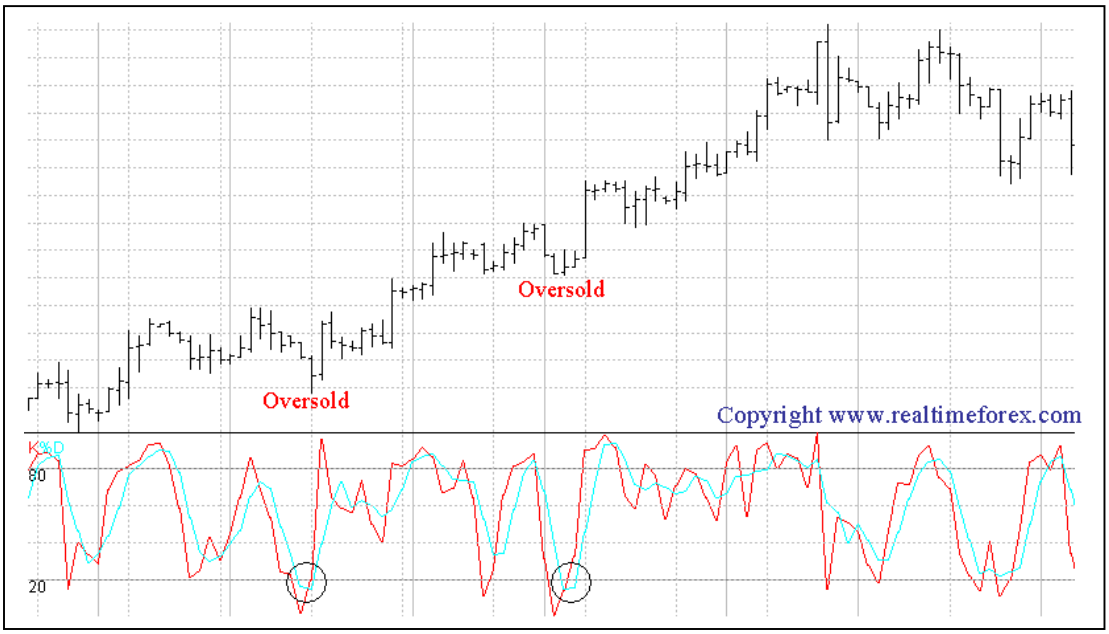
The most common uses of Stochastics are to:

- *Indicate overbought and oversold conditions*

An overbought or oversold market is one where the prices have risen or fallen too far and are therefore likely to retrace. If the %D line is above 80% then the close is near the top end of the range of the observation period, while a reading below 20% means that the close is near the bottom end of the range of the observation period.
Generally the area above 80 is considered overbought, while the area below 20 is oversold. The specified overbought/oversold ranges vary. Other commonly used ranges include 75-25, 70-30 and 85-15.
Overbought and oversold signals are most reliable in a non-trending market where prices are making a series of equal highs and lows



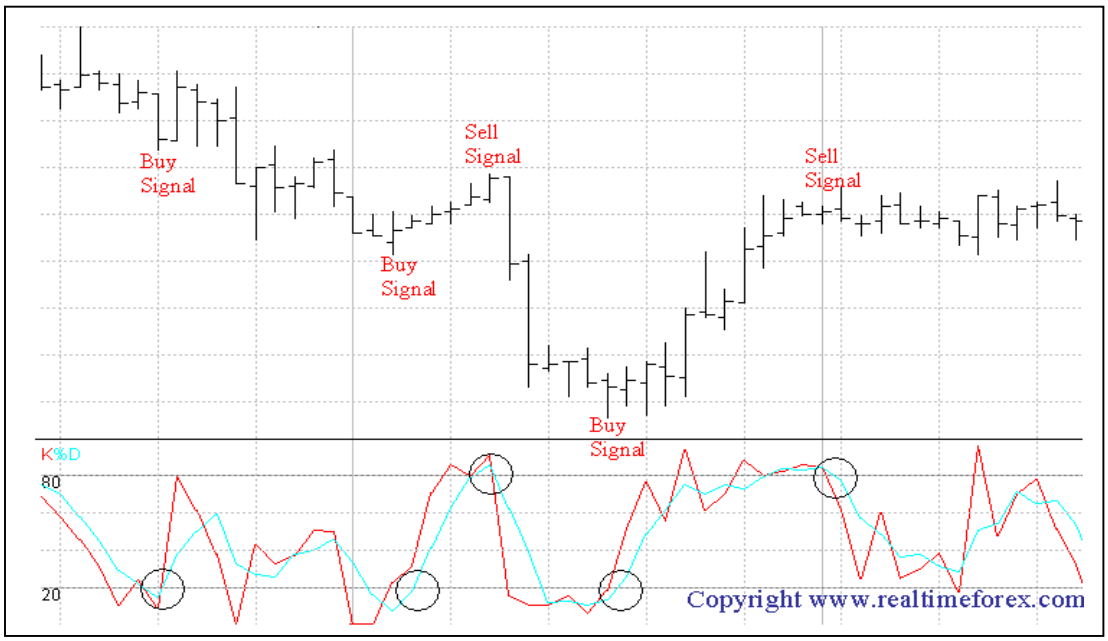
If the market is trending, then signals in the direction of the trend are likely to be more reliable. For example if prices are in an up trend, a safer trade entry may be obtained by waiting for prices to pullback giving an oversold signal and then turn up again.



- Generate buy and sell signals

For a buy or sell signal the following conditions must be met in order.

1. The %K and %D lines move above 80 or below 20
2. The %K and %D lines cross
3. The %K and %D lines move below 80 or above 20



- Indicate Bullish and Bearish Divergence

Divergence between Stochastics and the price indicates that an up or down move is weakening.
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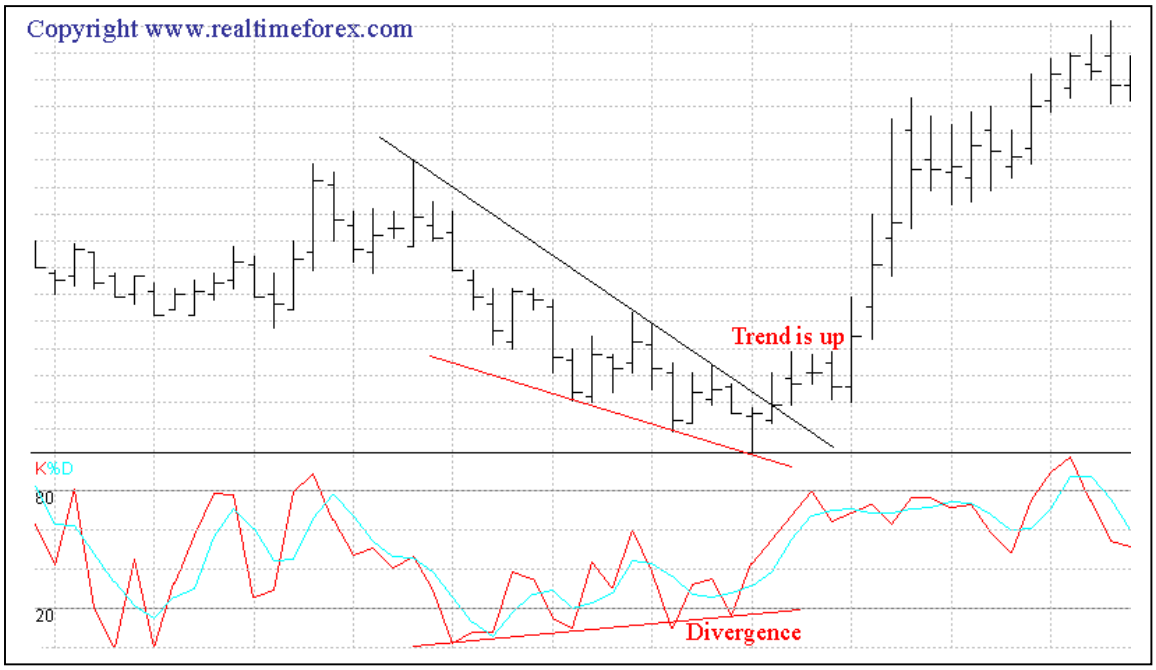
Bullish Divergence occurs when prices are making lower lows but the Stochastics are making higher lows. This is a sign that the down move is weakening.
It is important to note that although Divergences indicate a weakening trend they do not in themselves indicate that the trend has reversed. The confirmation or signal that the trend has reversed must come from price action, for example a trend line break.



Parameters

Observation Period for %K FAST: (default 5)

The number of intervals in the period used for selecting the high and low. A value greater than the default results in a smoother less sensitive %K Fast line.

Averaging period for %D FAST: (default 3)

The averaging period is the number of observations of %K FAST lines used in the moving average. The smaller the value, the closer the %D will be to the %K.